



VOL-I

District Disaster Management Plan Balangir for the year 2023-24

Cyclone



Earthquake



Flood / Heavy Rain



PREFACE



“**Disaster** is a serious disruption of the functioning of society which poses a significant, widespread threat to human life, health, property or the environment, whether arising from accident, nature or human activity, whether developing suddenly or as the result of long term processes, but excluding armed conflict.”

The District Disaster Management Plan is a key part of an Emergency Management. It will play a significant role to address the unexpected disasters that occur in the District. The information available in DDMP is valuable in terms of its use during disaster. Based on the history of various disasters that occur in the District, the plan has been so designed as an action plan rather than a resource book. During the time of Disaster there will be a delay before outside help arrives. At first, self help is essential and depends on a prepared community which is alert and informed. Efforts have been made to collect and develop this plan to make it more applicable and effective to handle any type of disaster.

The District Disaster Preparedness and Response Plan, includes the facts and figures that have been collected from various formal and informal sources with a view to meet the challenges during any Natural Disaster. Collection and classification of data are to be updated twice in May and November every year.

MESSAGE

I convey my immense pleasure to present the people of Balangir, “the District Disaster Management Plan 2023-24”. The plan is brief and exhaustive, covering all the aspects under the purview of Disaster Management. The DDMP should provide necessary information on disaster mitigation, preparedness, response and re-construction measures helpful for a Disaster Manager.

A dedicated effort has been made by the District Disaster Management Authority, Balangir to prepare a comprehensive plan under the stewardship of Additional District Magistrate, Deputy Collector (Emergency), Balangir and DRR Consultant, OSDMA. We have prepared a complete plan for possible disasters in the district including standard operating procedures (SOPs) for each disasters, contact no. of all line department officers, list of shelters, medical facilities & a hazard specific Crisis Management plan with vulnerability analysis keeping in view the history of disasters in the district.

I sincerely wish that, this plan will assist the District Administration with an effective deal & subsequently reduce the loss of Life, Livelihood and Property due to disasters and to achieve the mission of “Zero Casualty” through successful Disaster Management.

I wish all the success to the team behind the preparation of DDMP 2023-24.



**Sri Chanchal Rana, IAS
Collector-cum-Chairman
District Disaster Management Authority,
Balangir**

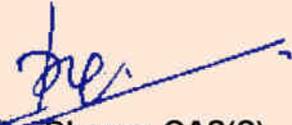
MESSAGE

It was essential that, we look at Disaster Management from the development angle. It is no longer either a one-off or stand-alone activity. Despite the fact that, Disaster Preparedness is most essential, it is apparent that, proper mechanisms for Disaster Awareness and mean of Disaster Recovery are essential for achieving the Millennium Development Goals. Reversing the loss of environmental resources can never be achieved without giving due to emphasis to effective Disaster Management Strategies.

The District Disaster Management Plan (DDMP) 2023-24 has illustrated the various key activities that are required to be followed for mitigating the risk. I think, it will be extremely useful to help understand the methods and path to be followed in Disaster Risk Reduction in the District.

I am very much glad that, all out efforts have been made to bring out this plan in this complete shape. I am also very much thankful to all the Officers and staff who have provided the valuable inputs for making it a final compilation of DDMP. It should therefore be the responsibility of all concerned stakeholders from Government to Non-Government Organizations, to give the right priority to follow the same with co-operation. Only that will ultimately guarantee Disaster Risk Reduction for all and minimize their sufferings.

Lastly, I wish the plan be reviewed timely and updated in order to be amply rewarded.



**Sri Lambodar Dharua, OAS(S)
Additional District Magistrate
Balangir**

MESSAGE

I congratulate the whole team of District Disaster Management Authority of Balangir District under the guidance of Collector-cum-Chairman, DDMA and ADM (Emergency) for preparing a comprehensive plan integrating prevention, mitigation, preparedness & response measures for a successful Disaster Management. I am confident that the implementation of this plan will make this District Disaster Resilient.

The plan aim's to improve the Disaster Resiliency of the District by integrating Disaster Risk Reduction into development methodologies and by increasing the preparedness to respond to all kinds of disaster successfully. The implementation of the plan requires sincere co-operation from the line Department as well as the active participation of PRI Members, Community Based Organizations, Communities, private sector players and other stakeholders.

I thank all the stakeholders involved for their timely support in preparing the DDMP, 2023-24



**Subhasmita Mishra, OAS
Deputy Collector (Emergency),
Collectorate Balangir**

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Abbreviations

ANM	Auxiliary Nurse Midwife
ASHA	Accredited Social Health Activist
AWC	Anwanwadicentre
BEOC	Block Emergency Operation Centers
BNRGSK	Bharat Nirman Rajiv Gandhi Seva Kendra
BSF	Boarder Security Forces
CDVO	Chief District Veterinary Officer
CHC	Community Health Centre
CIFS	Central Industrial Security Forces
CPMF	Central Paramilitary Forces
CWC	Central Warehouse Corporation
DDA	Deputy Director Agriculture
DDMA	District Disaster Management Authority
DDMP	District Disaster Management Plan
DDMT	District Disaster Management Teams
DEOC	District Emergency Operation Centre
DIP	District Irrigation Plan
DLCNC	District Level Committee on Natural Calamity
DM Act	Disaster Management Act 2005
DRR-CCA	Disaster Risk Reduction and Climate Change Adaptation
FIR	First Information Report
GPDP	Gram Panchayat Development Plan
IAY	Indira AwasYojna
IEC	Information Education and Communication
IMR	Infant Mortality Rate
IPPE	Intensive participatory Planning Exercises
MGNREGS	Mahatma Gandhi National Rural Employment Guarantee Scheme
MHUs	Mobile Health Unit
MMR	Maternal Mortality Rate

NABARD	National Bank for Agriculture and Rural Development
NDMA	National Disaster Management Authority
NDRF	National Disaster Response Force
NDRFs	National Disaster Response Funds
NEC	National Executive Committee
NFSA	National Food Security Act
NGOs	Non-Government Organisation
NH	National Highways
NRLM	National Rural Livelihood Mission
ODF	Open Defecation Free
ODRAF	Odisha Disaster Rapid Action Force
OSDMA	Odisha State Disaster Management Authority
OSWC	Odisha State Warehouse Corporation
PACS	Primary Agriculture Cooperative Society
PHCs	Public Health Centre
PWD	Person with Disability
RAT	Railway Affected Tank
RAW	Railway Affected Work
RMC	Regulated Market Committee
SDG	Sustainable Development Goal
SDHs	Sub-Divisional Hospital
SDMA	State Disaster Management Authorities
SDRF	State Disaster Response Funds
SDVO	Sub-Divisional Veterinary Officer
SEC	State Executive Committee
VDMC	Village Disaster Management Committee
SLCNC	State Level Committee on Natural Calamity
SoP	Standard Operating Procedure

Chapter –1

Introduction

India has been traditionally vulnerable to Natural Disasters on account of its unique geo-climatic conditions. Floods, drought, cyclone, earthquakes and landslides have been a recurrent phenomenon. About 60% of the landmass is prone to earthquakes of various intensities, about 40 million hectares of land is prone to floods, about 8% of the total area is prone to cyclones which covers around 8000 K.M. stretch of Indian coastline 68% of the area is susceptible to drought. In the past decade, about 4344 people lost their lives and about 30 million people were affected by disasters every year. The loss in terms of private, community and public assets has been astronomical.

The super cyclone of Odisha in October 1999 and the Bhuj Earthquake in Gujarat in January 2001 underscored the need to adopt a multi disciplinary and multi-sectoral approach and incorporation of risk reduction in the development plans and strategies. Over the past couple of years, the Government of India has brought a paradigm shift in the approach to disaster management from relief and rehabilitation to prevention, mitigation and preparedness. The new approach proceeds from the conviction that development cannot be sustainable unless disaster mitigation has to be multidisciplinary spanning across all sectors of development. The new policy also emanates from the belief that investment in disaster mitigation is much more cost effective than expenditure on relief and rehabilitation.

Odisha is vulnerable to multiple natural hazards. Due to its sub-tropical littoral location, the state is prone to tropical cyclones, storm surges and tsunamis. It has a 480 km coastline. There are eleven major river systems in Odisha such as the Subarnarekha, the Budhabalanga&Jambhira, the Baitarani, the Brahmani, the Mahanadi, the Rushikulya, the Vansadhara, the Nagabali, the Indravati, the Kolab and the Bahuda. Its densely populated areas with heavy load of silt have very little carrying capacity, resulting in frequent floods, only to be compounded by breached embankments. About two-third of the total cultivated area being rain-dependent, drought poses a serious threat at regular intervals in the event of failure of Monsoon. Though a large part of the state comes under Earthquake Risk Zone-II (Low Damage Risk Zone-III (Moderate Damage Risk Zone) covering 44 out of the 106 urban local bodies of the state.

Apart from these, loss of life due to lightning has remained the highest of all natural calamities over the last decade. Heat-wave conditions during summer months also lead to heat-stroke death and other suffering to the people. And its occurrence is not limited to any particular season or month although increased number of fire accidents occurs in the summer months.

Balangir District has witness's loss of human lives and livelihoods due to the devastating affects of Drought, Heat wave, Floods, Fire accidents and lightings. In the recent past the District has faced drought during 1996,1998, 2000, 2002, 2009, 2010, 2011, 2015, 2017,2018 2021 and Flood / Heavy rain during 2001, 2003, 2014 and 2019. This District is one among the hottest place in the country with the mercury reaching 45⁰C. Besides, numbers of death cases have been recorded in an increasing trend in the District due to lighting and snake bites. Experience showed that the best approach for mitigating disasters or minimizing their impact is to take timely action, which is possible only if the Communities and concerned agencies and organizations in both public and private sectors became agree to undertake risk reduction measures in a sustainable way.

1.1 Overview to Disaster Management Plan

A dangerous condition or events that threaten or have the potential for causing injury to life or damage to property or the environment is called **Hazard**. Hazards can be categorized in many ways. But based on their origin, worldwide they are basically grouped in two broad categories.

1. **Natural Hazard:** Hazards with Meteorological, geological or even biological origin.
2. **Human Induced Hazard:** Hazards with Human Caused or Technological origin. It is popularly known as Manmade Disasters.

It is also important to know that natural Phenomena are extreme Climatological, Hydrological or Geological processes that do not pose any threat to human or property. For example, a massive earthquake in an unpopulated area is a natural phenomenon but not a hazard. It is when these natural phenomena interact with human population or fragile areas which causes wide spread damage. The population which are prone to these natural phenomena are called **Vulnerable** to hazards. A disaster is the output of a hazard such as earthquake, flood, landslide or cyclone coinciding with a vulnerable situation, which may include communities, cities or villages. Without vulnerability or hazard there is no disaster. A disaster happens when vulnerability and hazard meet.

India is a vast country and is prone to many hazards. In the meantime, India has experienced the disaster like tsunami in 2008, great earthquakes like Assam-1950, Gujarat-1992, Sikkim-2011, Super cyclones of Odisha 1999, Phailin 2013, unexpected flash flood of Mumbai etc. Considering such situation, Government of India already has passed the Disaster Management Act on 23rd December, 2005 in the Parliament. After this Act, disaster is no more confined to any particular department rather it is confined to all departments. This act enables the state government to form disaster management authority at the state level and make it more effective and specific.

The state of Odisha is highly prone to many hazards like Droughts, Flash Flood, Landslide, Heat wave and Cyclone. The State Disaster Management Authority has been trying to visualize measures to mitigate disaster imparting training and awareness programmes including media and printed documents for public and Govt. Officials, by preparing disaster management plan for any kind of disaster.

Stormy Affair: Odisha's encounters with 10 Cyclones in two decades

Odisha has encountered 10 Cyclones, including the approaching Jawad, in a span of 22 years and the frequency of such natural disasters is on only on the rise.

Odisha has encountered 10 cyclones in a span of 22 years and the frequency of such natural disasters is on only on the rise., The memories of the 1999 super cyclone is still fresh, wind speed of which could not be properly ascertained at the meteorological centre, Bhubaneswar, as the velocity crossed the capacity of the anemometer available then. After the 1999 disaster, which left over 10,000 people dead, the state had experienced another major calamity as cyclone Phailin. It made landfall near Gopalpur in Ganjam district on October 12, 2013, becoming the second strongest tropical cyclone in India since the 1999 one. It had hit Odisha at a wind speed of 260 mph. Twenty-three people were killed in the cyclonic storm after the government set a "Zero Casualty" mission with precautionary measures in place,.Phailin was followed by cyclone Hudhud in 2014 that struck the Visakhapatnam city of Andhra Pradesh on October 12, 2014.

Odisha, too, was affected by Hudhud. More than 60 people lost their lives in Andhra Pradesh, while the casualty count in the state was two. Subsequently, cyclone Titli in 2018 had left authorities in shock, as the weather system had unexpectedly changed its course and entered Gajapati district, where no major preparations were made to deal with the calamity. Seventy-seven people were killed in Odisha due to heavy rainfall and landslide that

accompanied the cyclone. In the year that followed i.e. in 2019, two cyclones Fani and Bulbul -- hit the country's eastern coast, causing extensive damage in Odisha and West Bengal. Fani had reached its peak intensity a day before its landfall and was marked as a high-end Category-4 major hurricane, with maximum sustained wind speed ranging from 209-251 kmph. Cyclone Amphan in 2020 had also claimed lives and damaged property in Odisha and West Bengal. It made landfall near Bakkhali in West Bengal on May 20. It was the first pre-monsoon super cyclone of this century that emerged from the Bay of Bengal. In May this year, Cyclone Yaas hit Odisha's Dhamra and left two people dead.

Shortly after, in September, cyclone Gulab crossed the Odisha-Andhra Pradesh coast, bringing with it heavy rain. The remnants of Cyclone Gulab then gave rise to Cyclone Shaheen, in a unique weather phenomenon. The name Shaheen was given by Qatar. Gulab was proposed by Pakistan. More than 20 people across different states and neighbouring countries died in cyclone Gulab. No death, however, was reported in Odisha, records show. Odisha also faced cyclone Jawad, which is being considered as the first winter cyclone in the state in about 100 years. The system has, however, weakened and may even escape its coast. The former director of Regional Meteorological Centre, Bhubaneswar, Sarat C Sahu, stated that climate change was a major factor for increase in frequency of cyclones. "When sea temperature touches 26.5 degrees celsius or more, it helps a low pressure intensify. In case of Jawad, the sea water temperature was 29 degree celsius. Besides sea pollution could also be another factor that creates an atmosphere suitable for formation of a cyclone," he added.

Heavy Rain Fall in Balangir

In August, 2019 Balangir District received a total of 9708.4 mm of rainfall whereas on the 12th, 13th, 14th of August, Balangir District received 5662.10 mm of rainfall. In the intervening period of 24 hours i.e. 8.00 AM of 13.08.19 to 08.00 AM of 14.08.19 Balangir&Puintala received 555 mm and 333 mm of rainfall respectively. Due to this heavy downpour, Balangir District experienced flood, which marooned many areas damaging infrastructure (Roads & Bridges) and properties. Many roads (Urban/Rural/NH), Bridges, Electric Pole, Water Pipelines, Vehicles etc.were washed out and damaged.

Rescue & Relief



District Administration including line department swung into action and were kept in high alert. The Emergency Team headed by the Collector, Balangir was prepared with adequate stock of relief materials and was with constant communication with both field and line officials to prevent any casualties. The Emergency Team in a very limited time widely publicized the rainfall forecast through Mike Announcement, Media, including Social Media, communicated to local Citizen Groups, thus creating awareness among the local population and relocating vulnerable people to safer locations. The prime objective of the District Administration was to prevent any casualties and with the leadership of Collector, Balangir, the District Administration prevented the same.

Administrative Arrangement:

The Department of Revenue and Disaster Management is the administrative department for management of disasters. Special Relief Commissioner (SRC) is in charge of response phase of disasters, whereas, Odisha State Disaster Management Authority (OSDMA) deals with preparedness and mitigation aspects. OSDMA provides support to SRC during response phase. At the District level, Collector is the District Relief Officer and Disaster Manager. Block is the lowest unit of relief administration. Block Development Officer and Tahasildar jointly manage relief administration at the lowest level. A State Level Natural Calamity Committee functions under the chairmanship of the Chief Minister for overall

supervision and monitoring at the state level. At the District level, District Natural Calamity Committee along with DDMA functions with representation from District level officers and peoples' representatives under the chairmanship of the District Collector for supervision and monitoring.

Coordination and Networking Mechanism

Disaster Management is a multi-agency function. It involves actions by different departments, organization and agencies. In short, it involves almost all departments of the State Government, Central Government, Armed Forces, Civil Society, Corporate Sector, Trader's Organizations, Faith Based Organizations, International Organizations working in the field of disaster response and UN Agencies etc. It is therefore, important that roles and responsibilities of each stakeholder are laid down during normal time and coordination mechanism worked out so that the same works during emergencies. Regular interaction with all the stakeholders is held at least once in a year. Key stakeholders are also associated with the mock drills to test their preparedness and clarity of roles and responsibility.

Coordination and Networking strengthens the disaster preparedness mechanism to deliver tangible results in a time bound manner. In disaster management, coordination could be on the basis of information, service, support and institutional framework. OSDMA works as the focal point for coordinates with different stakeholders for strengthening the disaster preparedness in the state.

Section 31 of Disaster Management Act 2005 (DM Act) makes it mandatory on the part of District Disaster Management Authority (DDMA) to adopt a continuous and integrated process of planning, organizing, coordinating and implementing measures which are necessary and expedient for prevention as well as mitigation of disasters. DDMP shall include Hazard Vulnerability Capacity and Risk Assessment (HVCRA), prevention, mitigation, preparedness measures, response plan and procedures These processes are to be incorporated in the developmental plans of the different departments as a preparedness measure to meet the disaster and relief, rescue and rehabilitation thereafter, so as to minimize the loss to be suffered by the communities and are to be documented so that it is handy and accessible to the general public.

1.2 Aims and Objectives of the DDMP:

A. Aims of DDMP

This was an attempt towards evolving a systematic, comprehensive and holistic approach to all disasters, natural as well as man-made. It was felt that prevention is more cost-effective than post-disaster relief and rehabilitation.

The four pillars of this plan namely:

- a. Culture of preparedness
- b. Culture of Quick response
- c. Culture of Strategic Thinking and
- d. Culture of prevention

B. Objectives of DDMP

- Sustainable reduction of impact of natural and man-made disasters through preparedness at District, Block, Gram Panchayat and Village level.
- To provide effective support and resources to all the concerned individuals, groups and departments in disaster.
- To assist the line departments, block administration, communities in developing compatible skills for disaster preparedness and management
- To identify the areas vulnerable to major types of the hazards in the District.

- To adopt proactive measures at District level by all the govt. departments to prevent disaster and mitigate its effects.
- To define and assign the different tasks and responsibilities to stakeholders during the pre-disaster and post-disaster phases of the disaster.
- To enhance disaster resilience of the people in the District by way of capacity building.
- To have response system in place to face any eventuality to affect or elicit the least possible disruption to the normal life process when dealing with individuals in disaster.
- To ensure active participation by the government administration, communities, NGOs, CBOs and volunteers at all levels making optimal utilization of human and material resources at the time of disaster.
- To develop the standardized mechanism to respond to disaster situation to manage the disaster efficiently.
- To prepare a response plan based upon the guidelines issued in the State Disaster Management Plan so as to provide prompt relief, rescue and search support in the disaster affected areas.
- To adopt disaster resilient construction mechanism in the District by way of using Information, Education and Communication for making the community aware of the need of disaster resilient future development.
- To make the use of media in disaster management.
- Rehabilitation plan of the affected people and reconstruction measures to be taken by different govt. departments at District level and local authority.
- To develop immediate awareness among the people about hazard occurrence and increase their participation in preparedness, prevention, development, relief, rehabilitation and reconstruction process.

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

Authority for DDMP: Approval & Implementation

As per the Notification No. IVF (OSDMA)-24/20-10- 46209 did. 12th November, 2010 of Commissioner-cum-Secretary to Government, Revenue & Disaster Management, Government of Odisha, communicated by Joint Secretary to Government, R & D.M. Department, Odisha, Bhubaneswar, the District Disaster Management Authority of the District of Balangir has been constituted as per following.

(i)	Collector & District Magistrate	Chairperson, Ex-officio
(ii)	President, Zilla Parishad	Co-Chairperson, Ex-officio
(iii)	Superintendent of Police	Member, Ex-officio
(iv)	Chief District Medical Officer	Member, Ex-officio
(v)	The Executive Engineer(Embakments)	Member,Ex-officio
(VI)	Additional District Magistrate (Emergency)	Chief Executive Officer,Ex-officio
(VII)	Executive Engineer, (R & D)	Member
(VIII)	CDO-cum-EO, Zilla Parishad	Member
(IX)	Deputy Director, Agriculture.	Member.

All the members has been communicated on the above notification along with Powers and functions of the Chief Executive Officer of the District Authority communicated by Joint

1.3 Preparation and Approval of DDMP

The information submitted to all concerned was compiled and report was drafted under the close supervision of DDMA Authorities and members. The draft plan was shared with the officers of the line department to review and seeks suggestions for improvisation of the plan. After necessary modification, the revised plan shared with the members of District Disaster Management Authority (DDMA), Balangir for final Approval.

1.4 Evolution of DDMP in brief: (Evolution, Methodology followed for preparation of DDMP)

1.4.1 Evolution of DDMP

Poor natural resource base, huge population pressure, inadequate infrastructure and less adaptive capacity of the community are increasing their exposure to these natural hazards. Due to the global climate change the occurrence of natural hazards will be more frequent, the poor community will become more vulnerable and the resultant impact will be more devastating. The disastrous effects of natural hazards cannot be eliminated completely but the miseries can be minimised to a reasonable extent by adoption of appropriate management practices. The present disaster management strategies basically focus on the **Relief, Rehabilitation, Reconstruction and Restoration** aspects i.e. **Crisis Management**. This approach has been ineffective because response is untimely, insufficient, poorly coordinated and poorly targeted to disaster affected groups or areas, hence often increasing the societal vulnerability to hazards.

Hence, there is an urgent need to adopt a Community Based Disaster Management strategy, where maximum emphasis should be given on **Early Warning, Preparedness, and Mitigation** i.e. **Risk Management** to develop a well informed, better organised and more prepared community resilient to all type of disasters. This approach must include the capacity building of all stake holders, education and awareness generation among the community, IEC campaign on Dos and Don'ts during disasters, development of multi hazard plans, strengthening the existing support system and institution building to ensure sustainability.

Identification of the socio economic profile, natural resource base, opportunities, hazards and their potential impacts of the District and development of various preparedness, response and mitigation strategies to reduce the impact of disasters is the underlying principle for the preparation of District Disaster Management plan. The basic objective of this Action plan is to ensure safety of the lives, properties and livelihood of the people during the disasters. Therefore proper development and effective implementation of an integrated plan addressing each and every aspects of disaster management in Balangir context is highly essential. The DDMP should not contain some distinct sectorial activities rather it should essentially aim at the holistic approach of disaster mitigation emphasizing on a wide range of multi sectorial activities. Hence a concerted and a coordinated effort of all the departments during the planning, implementation of the plan is of utmost importance.

Since 2010 District Disaster Management Authority (DDMA) has been preparing the DDMP every year with the support of OSDMA under UNDP programme to tackle the various types of disaster in the District. District Emergency Operation Centre (DEOC), Balangir has been entrusted to prepare the DDMP. Moreover, recent development in Sendai Framework for Disaster Risk Reduction (2015-2030) and Sustainable Development Goal (SDG) focused in mainstreaming of DRR in development planning and programme. But the existing DDMP of the District is lacking of such important aspects of Disaster Management. During 2017, OSDMA has taken special efforts to bridge the gap under straightening of DDMA and SDMA projects. OSDMA developed detailed methodology and

temples to update the existing DDMP. Thus, for 2017 and onwards, the DDMP has two parts vis. Volume I which contains the DDMP and Volume II covered relevant statistical figures and annexure.

1.4.2 Methodology

Steps	What is to be done	Who are to be involved	Methodology
I	Review and Analysis	Collector, ADM, Emergency Officer, BDOs, Tahasildars Village community, NGOs/CBOs, Community/Village level workers	<ul style="list-style-type: none"> ▪ Past history of disasters to be discussed and documented ▪ Extent of severity and damage to be recorded ▪ The nature of the Warning issued to be analyzed <p>The nature and extent of the rescue and restoration done, to be revisited</p>
II	Situation Analysis	BDOs, Tahasildars Village community, NGOs/CBOs, Community/Village level workers	<ul style="list-style-type: none"> ▪ Mapping the geography and topography of the risk prone areas, block-wise, GP-wise and village-wise ▪ Demographic details to be recorded ▪ Mapping of the habitation in the concerned areas ▪ The natural resources to be marked on the maps ▪ Listing all the livelihoods and properties ▪ The existing risk prone/ safe infrastructure to be marked on the map
III	Hazard Analysis	BDOs, Tahasildars Village community, NGOs/CBOs, Community/Village level workers	<ul style="list-style-type: none"> ▪ Identification of all possible hazards in the area based on past experience and available records ▪ Identification of the most vulnerable areas with relation to threat to life, livelihoods and property
IV	Vulnerability Assessment	BDOs, Tahasildars Village community, NGOs/CBOs, Community/Village level workers	<ul style="list-style-type: none"> ▪ Locations of the vulnerable areas are to be mapped separately ▪ Identification of the vulnerable people such as, the elderly, the disabled, children and pregnant women, families living in thatched houses, fishermen at sea (if any), ailing people, etc. ▪ Identification of property or assets which are likely to be affected, such as, cattle and other livestock, kachcha houses, weak structures, pump sets, tube wells and other installations, crops, horticulture and plantations, boats, nets, etc. ▪ Identification of weak points on embankments (if any) ▪ Marking the drainage system in the concerned area

V	Resource Identification	BDOs, Tahasildars Village community, NGOs/CBOs, Community/Village level workers	<ul style="list-style-type: none"> ▪ Identification of the existing resources which may help to reduce risks to life and property ▪ Identification of the safe houses and buildings for shelter and storage ▪ Listing the existing flood/cyclone shelters, if any ▪ Identification of the elevated and up-lands which can act as natural barriers to protect livestock ▪ Listing of the existing health and sanitation facilities ▪ Identification of safe routes for evacuation ▪ Identification of the sources of funds to carry out the preparedness activities.
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Preparation of a Disaster Preparedness Plan involves the following steps:

1.4.3 Consultation with Dist& Block level Officials

For smooth implementation of the proposed Disaster Preparedness Response/Mitigation, the Plan for involving some institutional at the District level has been prepared. There are various Disaster Management Teams (DMTs) has been formed with distinct roles and responsibilities. (Briefly described in Chapter-4 of this Volume-1)

District Disaster Management Authority (DDMA) is the Nodal Committee for the Disaster Management at the District level and it consist of representatives of various stakeholders like PRIs (ZP President) Government officials (various departmental heads) NGOs etc. The Collector & District Magistrate is the Chairman of the Committee and the ADM in charge of Emergency, Balangir is the Chief Executive Officer of the Committee.

1.5 Stakeholders and their responsibilities

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

Roles and Responsibilities of the Collector and District Magistrate

PHASE	ACTIVITIES
Pre-Disaster	<p>Preparedness Before the Disaster:</p> <ul style="list-style-type: none"> ▪ Reviewing and analyzing the calamity situation in the District over the next one-year through a meeting at the District level involving all the departments of the District as well as block levels and the locally active NGOs ▪ Identifying and mapping of disaster prone zones and strategies to stay prepared for the worst. ▪ Ensure proper extension of the disaster preparedness techniques for drought, heat wave, flash flood, epidemics by the concerned department. ▪ Ensure IEC through Emergency section/BDO's /Tahasildars/NGO's /AW centers /Street plays/ Workshops / Wallings.

During
Disaster

- Reviewing the DCR and making it functional as per SOP fixed by him (SOP to be prepared earlier)
- Making the DCR well equipped and depute senior officers from time to time to review the receipt of information and dissemination.
- Calling a meeting for NGO co-ordination cell. And discuss issues such as Capacity assessment of different NGOs and ask them to adopt certain vulnerable areas to avoid overlapping and duplicity.
- Preparing a checklist (containing the dos and don'ts) and pass that on to the NGOs
- Ensuring/installing communication system to the inaccessible villages.
- Ensuring proper functioning of warning systems & communication systems.
- Checking stock of the Public distribution system/ICDS and arrangement of the temporary Godowns.
- Checking the Resources with other department such as Police, Fire, Civil Defense and of NSS/NCC/NYK.
- Preparing a list Power Boats already deployed and/or to be deployed on hire during crisis.
- Assigning specific duties to different officers/Sr. Officers at Headquarters and staying in constant touch with them.
- Ensuring Mock drill of the rescue and relief teams.
- Preparing a map showing the location of temporary shelter camps at high elevation with accessibility
- Ensuring formation of GP and village level Disaster Management Committee through Block Development officers.

Dissemination of Warning:

- Receiving Warning from reliable sources and crosschecking them for authenticity.
- Disseminating warning to District level officials /Revenue field functionaries /PRIs & coordination with the Revenue control room
- Keeping the Control Room active round the clock.
- Distributing duties to the District level officials, Sub-collectors, Tahasildars and BDOs.
- Arranging vehicles and public address systems for information dissemination.
- Establishing coordination with the NGOs and other Civil Society Organisations and assigning them duties.
- Asking the people in the vulnerable areas to move to the shelters and to move their domesticated animals to safer places and to cooperate with the volunteers and other officials engaged in similar activities

Flash Flood & Epidemics

- To co-ordinate with Civil defense, NGOs/CBOs. Police/ Fire Brigade for support during Flash Flood
- Arrangement & Deployment of boats/vehicles etc. for evacuation of people from low lying and marooned areas and administer emergent relief.
- Deployment of police for maintaining discipline and peace keeping during evacuation, relief distribution etc.
- Keeping a record of the affected area and people so as to account for the relief materials needed.
- Procurement and transportation of relief materials to affected areas
- Arrangement of free kitchen in the shelter camps & affected areas and assigning the responsibilities to officials for proper distribution with coordination from NGOs/CBOs

- Distribution of basic medicines and disinfectants to prevent epidemic and ensuring Health care activities by the CDMO in the shelter camps & through mobile Units/Temporary Health in regular intervals
- CDVO through Mobile units/Temporary Health camps in the affected areas
- Ensuring that there is enough storage of food and pure water in the shelters.
- Monitoring all the activities in the affected areas.

Drought & Heat Wave:

- Organizing urgent meeting with key line departments to review the heat wave & drought like situation and the initiatives taken by the department to combat the situation
- Instruct the Labour department to issue circulars to all the departments that are implementing labour intensive work for changing the working time and making provision of drinking water at the work site.
- Coordinate with the RWSS department to prepare its contingency plan to reduce the drinking water crisis during heat wave and drought situation
- Monitor the activities of Blocks, GPs,NGOsetc
- Meeting with the Irrigation, MIP, LI, Watershed department to assess the current water availability and the crop area likely to be saved
- Coordinate with the Agriculture/Horticulture department for timely supply of seeds/ seedlings of suitable variety.
- Monitoring and Supervision of the different Food and Social security schemes of the Govt. to check whether it is reaching the target group or not.
- Providing employment opportunity to the most vulnerable group by initiating FFW/CFW work.

Post-Disaster	<p><u>Short-term Measures:</u></p> <ul style="list-style-type: none"> ▪ Formation of special task force with required equipments. ▪ Assigning responsibilities for specific areas. ▪ Damage Assessment ▪ Temporary supply of food, drinking water and medicines to the shelters and affected areas ▪ Arrangement for safe shelter for animals. ▪ Providing temporary arrangements for income generation for the affected people ▪ Drought resistance short duration paddy seeds to be made available to farmers. ▪ Encouraging NGOs/INGOs from outside to carry out restoration and reconstruction works ▪ Ensuring crop insurance ▪ Supervising all the activities
	<p>Long Term Measures</p> <ul style="list-style-type: none"> ▪ Immediate restoration of Road communication, Irrigation system, Educational institutions, Govt. Institutions, Electrical installation, Drinking water supply, Construction of IAY houses for the BPL families ▪ Breach Closure and other Embankment Strengthening activities ▪ Planning for holistic approach of drought mitigation through Watershed and Watershed plus intervention ▪ Planning for increasing the irrigation potential of the District through the construction of more Medium and Minor Irrigation Project. ▪ Meeting with District level officials /Officials at Head quarter and chalk out emergency plan with vulnerable areas and resource list ▪ Co-ordination meeting of NGOs /PRIs. &Assignment of duties.

Roles and responsibilities of the Additional District Magistrate (A.D.M)

PHASE	ACTIVITIES
Pre Disaster	<ul style="list-style-type: none"> • Playing a second fiddle to the Collector in all aspects • Ensuring proper dissemination of warning both downward and upward level improper interval of timing. • Ensuring proper functioning of Control room • Deployment of Office in charges of Collectorate in control room round the clock basis.
During Disaster	<ul style="list-style-type: none"> ▪ Arrangement of Vehicles ▪ Keeping the Police and Fire Personnel ready ▪ Keeping staffs at the DCR ready ▪ Deployment of additional staff if necessary ▪ Proper allocation of relief materials to the affected areas ▪ Allocation of officials for proper distribution of relief materials ▪ Supervision of relief distribution
Post-Disaster	<ul style="list-style-type: none"> ▪ Keeping liaison with all line departments ▪ Restoration of roads, transport and communication systems ▪ Collection of progress report on restoration and reporting to the Govt/SRC/RDC ▪ Periodical visits to the affected areas to supervise the restoration works

	<ul style="list-style-type: none"> ▪ Procuring the list of the affected people and property from the BDOs/Tahasildars ▪ Preparing a comprehensive damage report ▪ Allotment of relief materials/financial assistance ▪ Monitoring to make sure that everything is at its place ▪ Coordination with line departments and civil society organizations ▪ Supervision of restoration activities under taken by different voluntary agencies.
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Roles and Responsibilities of the CDMO cum PHO

PHASE	ACTIVITIES
Pre-Disaster	<p>Preparedness and Warning Dissemination:</p> <ul style="list-style-type: none"> ▪ Stock pilling of Life saving drugs/ORS packets/Halogen tablets on receipt of warning from the Collector/DCR ▪ Transmission of messages to all PHCs to stock medicines and keep the medical staff ready ▪ Disease surveillance and transmission of reports to the higher authorities on a daily basis. ▪ Vaccination. ▪ To obtain and transmit information on natural calamities from the DCR ▪ Advance inoculation programme in the flood/Cyclone prone areas. ▪ Ensuring distribution of areas of operation among the mobile team. ▪ Pre-distribution of basic medicines to the people who are likely to be affected ▪ Shifting the patients who are in critical situation to the District Hospital ▪ Awareness messages to stop the outbreak of epidemics ▪ Conducting mock drills
During Disaster	<ul style="list-style-type: none"> ▪ Constitute mobile teams and visit the worst affected areas. ▪ Dis-infection of Drinking water sources. ▪ Opening of site operation camps ▪ Regular Health Check up at Shelter camp/Cyclone shelter & affected areas ▪ Assigning responsibilities to the ADMOs/ SDMOs for close monitoring of Health camps.
Post-Disaster	<p>Restoration and Rehabilitation</p> <ul style="list-style-type: none"> ▪ Organization of Health Camps, ▪ Deploying mobile fully equipped and manned Medical vans ▪ Close monitoring of Health camps. ▪ Ensuring adequate quantities of medicine/disinfectants ▪ Making sure that there is no out break of water borne diseases/Malnutrition ▪ Co-ordination with the District Rehabilitation Committees, other line departments, NGOs /ICDS projects, village committee, PHD, RWSS, etc.

Roles and Responsibilities of the Superintendent of Police

PHASE	ACTIVITIES
Pre-Disaster	<p>Preparedness and Dissemination of Warning</p> <ul style="list-style-type: none"> ▪ Reception of Warning from the DCR ▪ Communication establishment with District and Block/Tahasil Control rooms and departmental offices within the division. ▪ Alerting the APR force for deployment at the time of calamity ▪ To issue directive to police field functionaries to co-operate with Revenue Personnel in management of Relief operation.
During Disaster	<p>Rescue and Evacuation:</p> <ul style="list-style-type: none"> ▪ Clearance of roads and other means of transportation ▪ Traffic management and patrolling of all highways and other access roads to disaster sites ▪ Making sure that discipline is maintained ▪ Assistance to District authorities for taking necessary action against hoarders, black marketers and those found manipulating relief material ▪ Co-ordination with fire personnel. ▪ Provision of security in transit camps/feeding centers/relief camps/cattle camps/cooperative food stores and distribution centers ▪ Safe guarding of belongings of evacuees <p>Distribution of Relief:</p> <ul style="list-style-type: none"> ▪ Maintaining laws and order at the Shelters and the relief camps ▪ Coordination with military service personnel in the area ▪ Deploying officers/ police personnel to record death cases ▪ Assisting the community in organizing emergency transport ▪ Assisting the District officials/NGOs in distribution of relief materials. ▪ Providing escorts in transit of relief materials to the relief camps/affected areas.
Post-Disaster	<ul style="list-style-type: none"> ▪ FIR of the disasters, the damages and the death cases. ▪ Assisting in collection of damage statistics of private properties and distribution of assistance such as HB grant/ sand-cast subsidies. ▪ Maintaining law and order ▪ Close Coordination with District administration and local/external NGOs in reconstruction and rehabilitation process ▪ Assisting the District authority whenever the need arises ▪ Periodical visits to the affected areas to ensure law and order

Roles and Responsibilities of the District Emergency Officer

PHASE	ACTIVITIES
Pre-Disaster	<ul style="list-style-type: none"> ▪ Making sure that everything stays at place in the control room. ▪ Seeing to it that the DDMP and the contingency plan for flood/cyclone reach all the line departments. ▪ Receiving the Warning from SRC/OSDMA and crosschecking them with IMD and in websites for authenticity ▪ Disseminating the warning to the Block/Tahasil offices and asking them to disseminate further to reach each and every household. ▪ Deploying the staff of the control room for round the clock alertness. ▪ Making sure that all the shelters receive enough water and food stocks in advance ▪ Establishing contact with all the line depts. Over phone, email, wireless, sat phone and VHF ▪ Procuring all the required resources from all the possible sources. ▪ Regularly updating the information received from the blocks
During-Disaster	<ul style="list-style-type: none"> ▪ Coordinating with all the line departments for rescue and evacuation. ▪ Checking the stocks with the DCR and asking for more if needed. ▪ Distributing the relief materials to all the places. ▪ Checking every bit of receipt and dispatch of relief items ▪ Establishing round the clock contact with all the depts., BDOs and Tahasildars and with the shelters.
Post-Disaster	<ul style="list-style-type: none"> ▪ Receiving the list of beneficiaries from different blocks and GPs ▪ Crosschecking the list of beneficiaries to avoid fabrication

Roles and Responsibilities of the BDOs and Tahasildars

PHASE	ACTIVITIES
<i>Pre Disaster</i>	<p>Preparedness:</p> <ul style="list-style-type: none"> ▪ Providing authentic information required by the DCR ▪ Preparing a record of previous disasters in the locality and analyzing the effects ▪ Preparing hazard maps of the Block./Tahasil& the GPs in minute details ▪ Mapping the cut off areas with alternate route map. ▪ Identification of shelter places in the maps ▪ Keeping a List of storage Points & facilities available, dealers of foodstuffs. ▪ Keeping a list of vulnerable people and area and weak points on embankments (if applicable) ▪ Creating a Control Room at the respective level and assignment of duties to the staff. ▪ Pre-positioning of staff for site operation centers. ▪ Uninterrupted communication with the DCR ▪ Arrangement of alternative communication/generator sets, etc ▪ Formation of GP/village level disaster committees and task forces ▪ Arrangement of boats on hire available locally. ▪ Deployment of Boat in the most vulnerable areas. ▪ Organizing awareness camps at GP/village levels

	<p>Dissemination of Warning:</p> <ul style="list-style-type: none"> ▪ Crosschecking with the DCR for the authenticity of the warnings ▪ Arrangement or requisition of Jeeps/Trekkers/ Auto Rickshaw to disseminate received warning information's to the population of vulnerable / weak places ▪ Dissemination of warning/ coordination with District control room. ▪ Warning the people about probable affected areas ▪ Mobilizing the people to leave for identified shelters with their domestic animals and personnel belongings.
During Disasters	<p>Rescue and Evacuation:</p> <ul style="list-style-type: none"> ▪ Deployment of Police/Fire Brigade for search and rescue. ▪ Co-ordination with civil defense/NCC/NSS/Rajya Sainik Board for rescue operation. ▪ Ensuring availability of rescue materials. ▪ Guiding the evacuees in the identified shelter places and arranging all common needs for them. ▪ Provision of rescue kits. ▪ Clearance of roads and water logging for restoring communication to affected GPs/Villages. ▪ Assisting the District Team in every possible ways ▪ Coordinating with the NGOs/CBOs for rescue work ▪ Mobilizing the local youth to help the rescue team <p>Distribution of Relief:</p> <ul style="list-style-type: none"> ▪ Keeping the record of everything at the shelters ▪ Arrangement of free kitchen in the shelter camps./worst affected areas. ▪ Deploying staff for proper distribution of relief materials ▪ Arrangement of communication system in the worst cut off areas. ▪ Ensuring supply of safe drinking water & health facilities in the effected areas/shelter camps. ▪ Coordination with NGOs/Other voluntary organizations
Post-Disaster	<p>Restoration and Reconstruction:</p> <ul style="list-style-type: none"> ▪ Collection of damage statistics of PR department properties /ICDS/school buildings etc. ▪ Ensuring just distribution of HB grants and other financial assistance ▪ Provision of temporary income generation activities for the worst affected people ▪ Supervision of Relief operation and restoration work in the affected areas. ▪ Restoring the transportation and educational institutions on high priority ▪ Helping the local economic activities to come back to normalcy ▪ Provision of grants/loans for the local traders and shop-keepers ▪ Keeping liaison with District administration and other line departments ▪ Ensuring coordination with the RI and G.P/Village committee. ▪ .Co-ordination with NGOs/Civil society organization etc.

Responsibilities of other Line Departments:

DESIGNATION OF THE OFFICER	DUTIES TO BE PERFORMED IN NORMAL TIME.
Executive Engineer, Electrical	<ul style="list-style-type: none"> • He should see that the field staff checks the electrical line and replace old materials used in the power supply. • He should see that all had wiring in service connections are rectified. • He should enumerate the diesel sale available and his jurisdiction and keep it available. • He should see that the report regarding cyclone warning should be reported to other subordinate offices. • He should see that trees, branches etc. fall on electrical lines are out and removed. • The field staff should see that electrical supply in the places where cyclone may be serve is cut off. • The field staff should be in touch with local Tahasildars and inform the situation at frequent intervals. • To provide Diesel generators to hospital water works. Control Room Collector's office in case of failure of powers.
Superintending Engineer, Irrigation Division	<ul style="list-style-type: none"> • The branches to canal drain bandha to be closed. • The Embankments should be strengthened. • It should be checked whether the passage bridge and channels are in good condition. • The obstruction in the canals if any should be got removed immediately to be enabling free flow of water. • The bocks and shutters of the canals are to be checked and satisfied that they are in good condition. • The instruments and materials etc. required attending to immediate repairs breach of closures etc. should be stacked at places where they may be required locating such places early. • Navigation in the canal should be stopped. • Water supply in to canals should be out off by closing the sluices. • The canals and drains should be free from constructing and they should be made available for free discharge of drain water.
Assistant Fire Officer, Balangir	<ul style="list-style-type: none"> • The Fire Engineers should alert and other vehicles should be kept in good working condition. • Materials required for use in emergency should be indented for and kept in reserve • Message received from public on disaster for help should be immediately attended. • Keep in touch with each of the other fire stations in the District.

Executive Engineer, Roads and Buildings	<ul style="list-style-type: none"> • Govt. buildings should be inspected and necessary repairs to be got executed to with standing hazards affected. • Script for slides, pamphlets, and cultural programmers should be got prepared immediately. • Arrangements should be made to obtain poster and films by addressing the Director through the Collectors. • Public addresses equipment should be obtain kept ready. • The community Radio sets available in the coastal villages should be ascertained • The names of Hamlets where they are not available to be reported. • The public should be fully educated regarding the precautionary measures & after cyclone through available media. • Specific duties should be assigned to the field staff. • The field staff should proceed to the place of work allotted and be ready to attend to cyclone duty.
RTO & MVI C.S.O. D.M.(Tel)	<ul style="list-style-type: none"> • List of vehicles running condition to be requisitioned kept ready. • The MVI/Asst. MVI will report before A.D.M. (Relief) • The Asst. Engineer & Jr. Engineers will remain alert. • Based on the experience on the previous cyclone sufficient no. of trucks should be procured and kept in District head quarters. • To contact all Block Control Room and Collector's Office.

Local Authorities have the following duties:

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

Private Sector:

- 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.
- They should adhere to the relevant rules regarding prevention of disasters, as may be stipulated by relevant local authorities.
- As a part of CSR, undertake DRR projects in consultation with District collector for enhancing District's resilience.

Community Groups and Volunteer Agencies:

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

Citizens:

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

1.6 Plans for Review and Updating: Periodicity

The approved plan is to be implemented by the concerned line department. Each department needs to train their personnel so that they have the knowledge, skills and abilities needed to perform the tasks identified in the plan. Activities identified for each department at various stages of disaster should be followed judiciously. At the same time the plan to be reviewed periodically to determine whether the goals, objectives, decisions, actions and timing outlined in the plan led to a successful response. DM Plan requires regular improvement and updating at least once a year. The DDMP, 2022-23 prepared by the DEOC, Balangir will be upgraded every year and will continue to be done. The DDMA will sit at least twice a year to effect regular improvements or remove bottlenecks in the Disaster Management Plan.

The following aspects need to be considered while reviewing and updating the plan after the following events:

- a) A major incident.
- b) A change in operational resources (e.g., policy, personnel, organizational structures, Management processes, facilities, equipment).
- c) A formal update of planning guidance or standards.
- d) Major exercises.
- e) A change in the District's demographics or hazard or threat profile.
- f) The enactment of new or amended laws or ordinances.

The DDMP will be printed and circulated every year by the DEOC, Balangir to the line departments. The same will also be uploaded on District website and website of OSDMA for different stake holders. Awareness campaigns, capacity building and trainings are organized and such information on disaster preparedness is disseminated to all the stake holders. DEOC collect information on occurrence of disasters as well as render necessary advisory to the information seekers. The responsibility for the coordination of the development and revision of the basic plan, annexes, appendices and implementing instructions is assigned to DEOC under the guidance of District Magistrate/Addl. District Magistrate of the District.

Chapter-2 District Profile

2.1 Brief History

Balangir District is situated in the Western Region of Odisha, in India. The territory comprising the District of Balangir was part of the erstwhile Patna State. The Patna State was an important State under the Chauhans since 14th century AD. The Chauhan rule ended with the merger of the State of Patna with Odisha on the 1st January, 1948. Sri Rajendra Narayan Singh Deo was the last ruler of the princely State of Patna. The ex-States of Kalahandi, Patna and Sonapur were combined together to form a new District called Balangir- Patana District on 1st January 1948. Subsequently, on 1st November 1949 the ex-States of Patna and Sonapur were separated and they together formed a new District called Balangir District with 4 subdivisions, namely Balangir, Patnagarh, Titilagarh and Sonapur. Later, Sonapur Subdivision was divided and Birmaharajpur Subdivision was formed. Sonapur and Birmaharajpur sub-divisions were separated from Balangir District to form a new District called Subarnapur with effect from 1st April 1993 vide Government of Odisha Notification No. 14218-DRC-44/93R dated 27.3.93 for the sake of smooth administration and developmental works. The present territory of Balangir District thus has only three subdivisions of Balangir, Titilagarh and Patnagarh. According to History, Balangir town was established by BalaramDeo, the brother of NarasimhaDeo. The town being founded by BalaramDeo was earlier known as Balaramgarh from which the name Balangir has been derived.

2.2 Geography

2.2.1 Location & Geographical Area

The District of Balangir is situated in the western part of Odisha. The District finds its circumferential limits within 29°9" and 21°05" North Longitude and 82° 41' to 83°42" East Latitude and is situated in the valley of rivers Ang and Tel, which are having important tributaries like Lanth, Sonagarh and Suktel. The western and north western boundary formed by the magnificent range of hills known as Gandhamardan with an average height of 3000 feet which separates the District from Sambalpur and Kalahandi. It is surrounded on the North by Bargarh and Subarnapur, East by Subarnapur and Boudh, South by Kalahandi and West by Nuapada District. The state of Madhya Pradesh also remains in the western border. The total geographical area of the District is 6575 Sq. kms which is 4.74 Percentage to Total area of the State and 10th largest District of the state in term of its geographical area.

2.2.2 Climate

The climatic condition of the District is generally hot (7°C to 48°C) with high humidity (79%) during March to June and cold during November to February. The monsoon generally breaks during the month of June. The average Annual rainfall of the District was **1022.18** mm in 2021 which is lower than the normal rainfall of 1289.8 mm. (Refer Table 1.2 of Volume II)

2.2.3 Cloudiness

During the south-west monsoon season, skies are generally heavily overcast. In the summer and post-monsoon months there is moderate cloudiness, the afternoons being cloudier than the mornings. In other months the sky is mostly clear or lightly clouded.

2.2.4 Winds

Winds are generally light to moderate. During the south-west monsoon season the winds are mostly from the south-west or west. In the post monsoon and cold seasons winds generally blow from the directions between the north and north-east. In the summer months, the winds are variable in direction.

2.2.5 Special Weather Phenomena

Storms and depressions in the Bay of Bengal, during the monsoon season and in October pass through the District or its neighborhood and cause widespread heavy rain and strong winds. Thunderstorms mostly in the afternoons occur in the summer season and in October. Rain during the south-west monsoon season is also very often associated with

thunder. Even though there has not been large variation from the normal rainfall, almost every year there is scarcity in some area or other on account of irregular distribution of rainfall. Recently this District has experienced cyclonic effect of “**PHIOLIN**”, “**HUDHUD**” **AND** “**FANI**” and “**Cloud Bursting**” in the month of October of the year 2013 and 2014 and in the month of May and August of the year 2021-22 respectively.

2.3 Topography:

The District has two physiographic regions viz, hills of west and south and plains of north and east. The District forms a part of the crystalline soil region of the Deccan plateau. The western and southern part is in undulating plain, rugged and isolated with hill ranges rising in various directions, a lofty irregular hill range, forming a natural boundary to the west and North West.

2.4 River System

2.4.1 River System: Main Rivers and Tributaries

Tel

This river starts from the north-west of the District of Nabarangpur and flowing through the District of Kalahandi touches the border of District about 6 km to the west of Kesinga railway station. It crosses the boundary between the Districts of Kalahandi and Balangir for a considerable distance after which it enters into Balangir District about 3km south of Tusra and flows only about 8 km within the District. It then forms the boundary between this District and the District of Baudh till it meets the river Mahanadi at Sonapur. In fact excepting a course of about 8 km, the river forms the eastern boundary of this District. It had earlier no perennial source of water-supply, however, maintains a flow of water throughout the year due to release of water from Indravati Reservoir in Kalahandi District, sufficient to raise paddy and other crops during rabi season through lift irrigation points in Gudvella Block area. But during monsoon, the river Tel is the principal source of flood in Mahanadi. It receives surplus release of water from main reservoir of Indravati Dam project. The Tel finds mention in the Buddhist Jataka stories. In the Sera VanijjaJataka it is called Telavaha.

Tributaries of the Tel

The Tel is fed by a number of tributaries of which those flowing inside the District of Balangir are the Undar, the Lanth, the Sungad and the Suktel. The Undar starts from Nuapada District and drains into the southern part of the Titilagarh subdivision. The Lanth (also called BarabhaiLanth) and the Sungad are local streams and take their rise from the north-western belt of the hills of the District. At the confluence of Sungad and Tel are found ruins of a medieval fort known as Kharligarh. The Suktel takes its origin from the slopes of the Gandhamardan range and flows through the subdivisions of Patnagarh and Balangir. It meets the Tel a few miles south of its confluence with the Mahanadi in Subarnapur District.

Ong/Ang

This river originates from the hills of Borasamber in the District of Bargarh and is fed by the streams flowing down the northern slope of the Gandhamardhan range. In Bargarh District, it first flows in northerly direction for a short distance and then swerves to the east in wide semicircular shape and enters the District of Balangir near Agalpur. It joins the Mahanadi a few miles up Sonapur town in Subarnapur District. A portion of its course forms the boundary between Sonapur and Balangir District. This river carries considerable volume of water during the rains, but it soon dries up in cold season.

2.5 Administrative Setup

The Collector and District Magistrate is the Administrative Head of the District. For smooth Administration, he is assisted by Additional District Magistrates, Sub-Collectors, Block Development Officers, Tahasildars, Deputy Collectors, and other Line Department Officers. Balangir consists of three Sub-Divisions viz. Balangir, Patnagarh and Titlagarh. One Sub-Collector is in charge of each Sub-Division. For the convenience of Revenue Administration, the District is divided into 14 tahasils viz. Patnagarh, Kantabanji, Titlagarh, Tushura, Loisinga, Balangir, Khaprakhol, Belpara, Bangomunda, Muribahal, Saintala, Deogaon, Puintala and Agalpur with one Tahasildar in charge of each tahasil. For development of rural areas consisting of 3798 wards, 1764 Villages, in 317 Gram Panchayats, the District is divided into 14 Community Development Blocks with one Block Development Officer in charge of each Block.

Sl	Sub-Division	Block	No. of G.P.s	Villages			No. of Wards	No of RI Circles	Name of the Tehsils
				Inhabited	Habited	Total			
1	2	3	4	5	6	7	8	9	10
1	Balangir	Agalpur	20	102	4	106	250	6	Agalpur
2	Balangir	Balangir	25	123	2	125	296	9	Balangir
3	Titilagarh	Bangomunda	26	133	0	133	304	9	Bangomunda
4	Patnagarh	Belpara	24	119	1	120	301	7	Belpara
5	Balangir	Deogaon	26	127	2	129	313	9	Deogaon
6	Balangir	Gudvella	13	83	2	85	151	4	Tusura
7	Patnagarh	Khaprakhol	21	132	1	133	251	8	Khaprakhol
8	Balangir	Loisinga	20	107	0	107	239	7	Loisinga
9	Titilagarh	Muribahal	22	157	4	161	251	7	Muribahal
10	Patnagarh	Patnagarh	30	165	0	165	360	10	Patnagarh
11	Balangir	Puintala	25	134	0	134	321	8	Puintala
12	Titilagarh	Saintala	22	134	0	134	272	7	Saintala
13	Titilagarh	Titlagarh	24	131	0	132	279	8	Titlagarh
14	Titilagarh	Turekela	19	101	0	111	215	4	Kantabanji
Total			317	1748	16	1764	3803	105	

Source: Col. 1 to 8: DPO, Balangir, 2011 || Col.8 to 10: District Record Room, Balangir

For maintenance of law and order, the District is divided into 18 Police Stations viz Patnagarh, Kantabanji, Titlagarh, Tushura, Loisinga, Balangir, Khaprakhol, Belpara, Bangomunda, Saintala, Turekela and Sindhekela, Puintala, Muribahal, Town PS, Larambha PS, Lathor PS and Energy PS. There are five Statutory Towns in the District viz. Balangir Municipality, Titlagarh Municipality, Kantabanji NAC and Patnagarh NAC and Tusura NAC. In order to look after the developmental activities in the urban areas of the District, one Executive Officer has been kept in charge of each town. Besides, four villages viz. Bangomunda, Tushura, Loisinga and Badmal under respective Tahasils have been declared as non-statutory towns i.e. Census Towns during 2011 Census.

2.6 Demography:

2.6.1 Population, decadal growth and Population Estimation

In 2011, Balangir had population of 1,648,997 of which male and female were 830,097 and 818,900 respectively. In 2001 census, Balangir had a population of 1,337,194 of which males were 673,985 and remaining 663,209 were females. There was change of 23.32 percent in the population compared to population as per 2001. In the previous census of India 2001, Balangir District recorded increase of 8.63 percent to its population compared to 1991. Based on the existing Average annual exponential growth rate, total population of the District is 1,628,676 by 2022-23.

Sl. No	Name of the Block/ ULB	Total			SC		ST		Others	
		M	F	T	M	F	M	F	M	F
1	Agalpur	48602	47740	96342	8839	8708	6232	6036	33531	32996
2	Loisinga	48208	47725	95933	8493	8491	8676	8919	31039	30315
3	Patnagarh	65760	65023	130783	10147	10107	20545	20568	35068	34348
4	Khaprakhol	46234	47323	93557	5642	5815	15942	16709	24650	24799
5	Belpara	64439	64477	128916	10387	10323	21935	22348	32117	31806
6	Turekela	40988	41793	82781	6536	6553	14220	14704	20232	20536
7	Bangomunda	59098	57991	117089	11685	11431	9453	9273	37960	37287
8	Muribahal	57365	57474	114839	10630	10384	13534	13725	33201	33365
9	Titlagarh	60950	60801	121751	11766	11572	12146	12037	37038	37192
10	Saintala	60728	59478	120206	10439	10730	11891	12022	38398	36726
11	Deogaon	49005	48640	97645	9340	9229	9712	10226	29953	29185
12	Balangir	52076	50876	102952	10264	10030	10913	10836	30899	30010
13	Puintala	56753	54882	111635	14700	14044	3833	3746	38220	37092
14	Gudvella	31369	30860	62229	6200	6100	8838	8967	16331	15793
1	Balangir M	50582	47656	98238	7343	7003	2438	2426	40801	38227
2	Patnagarh NAC	10694	10330	21024	1407	1450	1196	1158	8091	7722
3	Kantabanji NAC	11258	10561	21819	2004	1965	365	342	8889	8254
4	Titilagarh M	17405	16662	34067	2886	2830	728	750	13791	13082
5	Tusura NAC	2475	2348	4823	620	618	221	235	1634	1495
Total		8,30,097	8,18,900	16,48,997	1,48,356	1,46,421	1,72,489	1,74,675	509,252	497,804

Source: PCA, Census, 2011

2.6.2 Households and Population Distribution

Rural Urban Division

In 2011, Balangir had population of 1,648,997 which is 3.93 percent of the total population of the state. Out of the total Balangir population for 2011 census, a majority of 88.03 percent of population lives in rural areas where as it is only 11.97 percent lives in urban regions of District. These populations are accommodated in 414749 families (369273 families for Rural and 45476 families for urban areas). Further, average households size of the rural area and urban area are 3.93 members and 4.34 members per household against the 3.98 members per family of the District. Population density of the District stood at 251 people per sq. km

Sl. No	Name of the Block/ULB	Total Number of Families/H H	Category		Social Category			Card Position	
			Rural	Urban	SC	ST	Others	BPL	APL
1	2	3	4	5	6	7	8	9	10
1	Agalpur	25,513	25,513	0	4,509	3,158	7,846	8,622	8,785
2	Balangir	25,476	25,476	0	4,977	5,270	5,229	8,057	10,757
3	Bangomunda	28,277	26,890	1,387	5,448	4,636	8,193	14,987	6,018
4	Belpara	31,759	31,759	0	4,846	10,822	6,091	12,538	11,420
5	Deogaon	24,769	24,769	0	4,724	4,936	5,109	9,337	8,929
6	Gudvella	16,135	14,935	1,200	3,106	4,589	8,440	6,224	4,779
7	Khaprakhol	24,567	24,567	0	3,072	8,395	13,100	12,861	7,668
8	Loisinga	24,246	22,691	1,555	4,236	4,315	15,695	7,183	9,888
9	Muribahal	29,389	29,389	0	5,246	7,130	17,013	12,928	8,698
10	Patnagarh	33,388	33,388	0	5,162	10,289	17,937	15,429	9,043
11	Puintala	26,570	26,570	0	6,701	1,834	18,035	12,054	10,077
12	Saintala	32,251	30,899	1,352	5,441	6,289	20,521	14,716	10,347
13	Titlagarh	31,601	31,601	0	5,922	6,375	19,304	14,207	7,367
14	Turekela	21,548	21,548	0	3,400	7,498	10,650	10,727	8,272
1	Balangir M	21,980	0	21980	3,075	1,131	17,774	-	11,960
2	Patnagarh NAC	5,035	0	5035	666	563	3,806	1,542	3,152
3	Kantabanji NAC	4,887	0	4887	852	171	3,864	1,558	2,913
4	Titilagarh M	8,080	0	8080	1,331	365	6,384	1,500	5,499
5	Tusura NAC	1,200	0	1200	295	119	786	(Added with Gubdevlablock)	
Total (Not additive)		4,14,749	3,69,273	45,476	72,528	87,697	254,524	1,64,470	1,22,048

Source: Col.1 to 8: DCH, 2011 || Col. 9 & 10: www.foododisha.in

Social Composition

The District accommodated 17.88 percent of SC population, 21.05 percent ST population as against the state average of 17.1 and 22.8 percent respectively. In nutshell, about 39 per cent of the District population belongs to deprived communities who required special attention during various phases of disaster. It also shows that female population is marginally higher among ST where as it are lower among SC and other community. However, household size among Scheduled Caster is higher but not significant.

Sl. No	Name of the Block/ ULB	Total			SC		ST		Others	
		M	F	T	M	F	M	F	M	F
1	Agalpur	48602	47740	96342	8839	8708	6232	6036	3353	3299
2	Loisinga	48208	47725	95933	8493	8491	8676	8919	3103	3031
3	Patnagarh	65760	65023	130783	10147	10107	20545	20568	3506	3434
4	Khaprakhola	46234	47323	93557	5642	5815	15942	16709	2465	2479
5	Belpara	64439	64477	128916	10387	10323	21935	22348	3211	3180
6	Turekela	40988	41793	82781	6536	6553	14220	14704	2023	2053
7	Bangomunda	59098	57991	117089	11685	11431	9453	9273	3796	3728
8	Muribahal	57365	57474	114839	10630	10384	13534	13725	3320	3336
9	Titlagarh	60950	60801	121751	11766	11572	12146	12037	3703	3719
10	Saintala	60728	59478	120206	10439	10730	11891	12022	3839	3672
11	Deogaon	49005	48640	97645	9340	9229	9712	10226	2995	2918
12	Balangir	52076	50876	102952	10264	10030	10913	10836	3089	3001
13	Puintala	56753	54882	111635	14700	14044	3833	3746	3822	3709
14	Gudvella	31369	30860	62229	6200	6100	8838	8967	1633	1579
15	Balangir M	50582	47656	98238	7343	7003	2438	2426	4080	3822
16	Patnagarh NAC	10694	10330	21024	1407	1450	1196	1158	8091	7722
17	Kantabanji NAC	11258	10561	21819	2004	1965	365	342	8889	8254
18	Titilagarh M	17405	16662	34067	2886	2830	728	750	1379	1308
19	Tusura NAC	2475	2348	4823	620	618	221	235	1634	1495
Total		8,30,097	8,18,900	16,48,997	1,48,356	1,46,421	1,72,489	1,74,675	509,252	497,804

Source: PCA, Census, 2011

2.6.3 Religion wise Distribution of Population

The Census data shows Hinduism is professed by the majority of population in the District. Out of 1,618,175 populations, little over 16.18 lakh (98.13%) has returned themselves as followers of Hindu religion, 16,271 (0.99%) as Christians, 7,811(0.47%) as followers of Islam, 2,225 (0.13%) as Jain 565 (0.03%) as Sikh and 467 (0.03%) as Buddhist. In addition, over 3000 (0.21%) have reported professing other religions and faiths including tribal religions, different from six main religions in the District.

Sub-District	Buddhist	Christian	Hindu	Jain	Muslim	Other religions	Religion not stated	Sikh	Total Population
Balangir	96	6678	316553	68	2525	23	984	154	327081
Bangomunda	4	44	74096	236	103	1	89	6	74579
Belpara	1	71	115615	159	149	0	133	8	116136
Kantabanji	16	435	70142	386	912	3	43	178	72115
Khaprakhol	7	210	89047	14	358	8	154	21	89819
Loisinga	31	1982	150385	7	227	2	208	23	152865
Patnagarh	6	499	166677	182	587	1	338	35	168325
Saintala	230	2888	144945	100	445	9	316	58	148991
Sindhekel	15	651	97381	515	90	1	121	3	98777
Titlagarh	46	1162	159161	425	1603	1	421	40	162859
Turekela	5	33	51967	2	311	2	77	25	52422
Tushura	10	1618	182206	131	501	90	458	14	185028
Total	467	16271	1618175	2225	7811	141	3342	565	1648997
Percent	0.03	0.99	98.13	0.13	0.47	0.01	0.20	0.03	100.00

Source: Census, 2011

2.6.4 Age Group

Age structure is one of the most important characteristics of population composition. Almost all population characteristics vary significantly with age. Age statistics form an important component in disaster risk analysis, as most of the analysis is based on age structure of the population. Figures reflected in the above table showed 11.38 percent of the population fall under 0-5 years (childhood), 17.58 percent under 5-14 years age (schooling age) and 10.67% above 60 years (Aging group). Thus, about 21 percent of the District population (0-5 and 60+ year) required special care in age dimension. On the other hand, 60% of the population falls under working age group who can productively engaged under various economic activities.

Total Population	0 to 5	6 to 14	15 to 59	60 and above	Age not stated
1648997	187598	289817	991536	175962	4084
	11.38	17.58	60.13	10.67	0.25

Source: Census, 2011

2.6.5 Sex Ratio

With regards to Sex Ratio in Balangir, it stood at 987 per 1000 male compared to 2001 census figure of 984. In 2011 census, child sex ratio is 955 girls per 1000 boys compared to figure of 967 girls per 1000 boys of 2001 census data. There was net decrease of 12 female (1.24 percent) in child sex ratio compared to previous census. Moreover, the gap in Child sex ratio to total sex ratio increased during last decade.

Sex Ratio	2011	2001	Changes in status of Sex Ratio over last decade
Sex Ratio (Female per 1000 male)	987	984	3
Child Sex Ratio (0-6 Age)	955	967	(-12)
Gap in Child sex ratio	32	17	

Source: Census, 2011

2.7 Literacy

Average literacy rate of Balangir in 2011 were 64.72 compared to 55.70 of 2001. If things are looked out at gender wise, male and female literacy were 75.85 and 53.50 respectively. For 2001 census, same figures stood at 71.67 and 39.51 in Balangir District. Total literate in Balangir District were 927,260 of which male and female were 545,672 and 381,588 respectively. In 2001, Balangir District had 638,048 in its District. Increase in female literacy and decrease trend in literacy gap among male and female are worth mentioning indicators of the District.

Literacy	2011	2001	Decadal Literacy Gap (%)
Average Literacy (%)	64.72	55.7	9.02
Male Literacy (%)	75.85	71.67	4.18
Female Literacy (%)	53.5	39.51	13.99
Literacy Gap (%)	22.35	32.16	-

Source: Census, 2011

2.8 Socio-Economic profile

2.8.1 Land Holding Pattern

The Agriculture Census, 2010-11 showed the District had 2, 49,561 farmers from 3, 69,273 rural households. Thus, it is expected that remaining 1, 19,712 (32% of the rural households) households are landless. Out of 2, 49,561 farmers, 71.27% (177870), 20.43% (50990), 6.58% (16413), 1.56% (3898) and 0.16% (390) are marginal, small, Semi-medium, medium and big farmers respectively. Further average size of holding by size class is 1.11 acre in the District. Though there is no official data on share cropper but the Agriculture Census, 2010-11 reveals there are 797 otherwise operated holdings in the District.

FARMERS DETAILS

SI No	Block/Local Bodoes	Marginal (0-1HA)				Small (1-2HA)				Medium (2-10HA)			
		Total	SC	ST	Others	Total	SC	ST	Others	Total	SC	ST	Others
1	Bolangir	9271	1969	2234	5068	3134	421	741	1972	1823	138	355	1330
2	Deogaon	10924	2290	1855	6779	3586	411	823	2352	2172	188	421	1563
3	Gudvella	9313	1511	3474	4328	2595	460	1206	929	1071	213	533	325
4	Puintala	14605	3823	1046	9736	5140	797	333	4010	2050	212	126	1712
5	Loisingha	11064	1369	1684	8011	2774	194	361	2219	1109	69	156	884
6	Agalpur	10225	1181	2223	6821	2079	112	479	1488	1127	51	219	857
7	Patnagarh	14383	1920	4545	7918	3453	377	888	2188	2336	149	524	1663
8	Belpada	9289	1473	3566	4250	5068	656	2310	2102	1673	115	582	976
9	Khaprakhoh	9301	1597	3644	4060	2640	250	1086	1304	1430	74	606	750
10	Titilagarh	16663	3559	3914	9190	5906	942	1400	3564	1210	84	439	687
11	Saintala	21718	4094	2577	15047	3341	328	621	2392	754	69	230	455
12	Muribahal	19798	4014	4436	11348	3530	739	915	1876	1181	151	352	678
13	Bangomunda	11551	1824	2002	7725	3594	557	824	2213	1420	227	231	962
14	Tureikela	9765	1419	2383	5963	4150	490	1343	2317	955	50	378	527
	Total	177870	32043	39583	106244	50990	6734	13330	30926	20311	1790	5152	13369

Large (above 10HA)				ALL CLASSES			
Total	SC	ST	Others	Total	SC	ST	Others
103	0	14	89	14331	2528	3344	8459
49	0	20	29	16731	2889	3119	10723
0	0		0	12979	2184	5213	5582
23	0		23	21818	4832	1505	15481
24	0	10	14	14971	1632	2211	11128
14	0		14	13445	1344	2921	9180
104	0	31	73	20276	2446	5988	11842
37	0	9	28	16067	2244	6467	7356
16	0		16	13387	1921	5336	6130
10	0	5	5	23789	4585	5758	13446
10	0		10	25823	4491	3428	17904
0	0		0	24509	4904	5703	13902
0	0		0	16565	2608	3057	10900
0	0		0	14870	1959	4104	8807
390	0	89	301	249561	40567	58154	150840

Source: CDAO, Balangir(Agricultural Census)

2.8.2 Agriculture and Irrigation

During 2023-24, the net Sown area was **345475**Hectors. Irrigation potential created in the District is **139662**Hectors. The total production of Cash crop, Pulses, Oil seeds, and Vegetables were 63021 Qntl. 52714Qntl. 4895 Qntl.and 29236 Qntl. respectively.

Sl. No.	Name of the Block	Total Area (in Hectors)	Cultivable Area	Net Sown Area (2023-24)	Irrigated Area (2023-24)
1	Bolangir	20135	20177	20135	7943
2	Deogaon	20175	20560	20175	9318
3	Gudvella	13115	13672	13115	11883
4	Puintala	21995	22562	21995	5985
5	Loisingha	21215	21438	21215	7265
6	Agalpur	21675	22702	21675	13150
	DAO,Bgr	118310	121111	118310	55544
7	Patanagarh	41120	42240	41120	9179
8	Belpara	35810	36167	35810	8389
9	Khaprakhhol	29000	32472	29000	9701
	DAO, Ptg	105930	110879	105930	27269
10	Titilagarh	25825	25825	25825	14336
11	Saintala	21650	23850	21650	10623
12	Muribahal	27140	28354	27140	7132
13	Bangomunda	23310	23320	23310	19347

14	Tureikela	23310	25565	23310	5411
	DAO,Ttg.	121235	126914	121235	56849
	Bolangir Dist.	345475	358904	345475	139662

Source: CDAO, Balangir.

Sl. No.	Block	Large and Medium Irrigation Projects		Minor Irrigation Project		Lift Irrigation Point(River)		LI points (Deep bore wells)	
		Units	Ayacut Area inHa.	Units	Ayacut Area in Ha.	No.	Ayacut Area Ha.	No.	Aayacut area
1	Bolangir			17	2052	190	4380	841	4430
2	Deogaon			19	1325	95	2093	606	3155
3	Gudvella			3	156	128	2760	255	1950
4	Puintala			21	1869	46	1008	351	1995
5	Loisingha	1	58	17	1466	59	1332	1701	9200
6	Agalpur	1	4714	10	500	190	4380	841	4430
	DAO,Bgr	2	4792	87	7368	708	15953	4595	25160
7	Patanagarh			18	2337	106	2288	2182	11265
8	Belpara	1	587	11	2414	112	2416	1371	7245
9	Khaprakhol	1	758	13	1913	86	1870	882	1764
	DAO, Ptg	0	1345	42	6664	304	6574	4435	20274
10	Titilagarh	2	2252	7	1609	133	2868	58	440
11	Saintala			11	620	85	1944	483	2735
12	Muribahal	1	218	7	1183	33	712	668	3840
13	Bangomunda			6	807	66	1388	523	2725
14	Tureikela			6	1207	30	632	605	3195
	DAO,Ttg.	3	2470	37	5426	347	7544	2337	12935
	Bolangir Dist.	0	8607	166	19458	1359	30071	11367	58369

Source: CDAO, Balangir

2.8.3 Consumption of Fertilizer

Though there has been considerable improvement in the use of fertilizers and other inputs, the rate of fertilizer use in the District still remains far behind the state average.

Nutrient	Kharif	Rabi	Total
N	11435	2888	14323
P	2499	2364	4863
K	857	807	1664
Total	14791	6059	20850
Per Ha in Kgs	44.15	74.74	50.11

Source: CDAO, Balangir

Production-2022-23

Productivity of Major Crops in the Bolangir District

SI No.	Crop	Net Sown Area	Production in Qtls	Consumption of Seeds in Qtls	Consumption of Fertiliser in Qtls	Consumption of Pesticides in Qtls/lts	Requirement of Loans Rs. In Lakhs
1	Paddy (K)	1845 45	5905440	47668	360000	32000	90000
2	Paddy (R)	7772	256476	350			
3	Wheat	1					
4	Maize	5101	204040	3			
5	Bajra	139	1390	2			
6	Ragi	2614	20912	360			
7	Other Millets	9049	51000	500			
8	Pulses	5271 4	342641	720			
9	Oil seeds	4895	58740	530			
10	Vegitables	2923 6	1754160				
11	Other Cash Crops	6302 1	819273	29000			

Source: CDAO, Bolangir

2.8.4 Agriculture Allied Sectors

Pisciculture

The District accommodated 5075 nos. of fisherman households with 14443 populations. There were 12 nos. of fish farms (both Govt. and Private) covering 91.45hectores.

Fishery Fisherman Community				
SI No	Name of the Block	Households	Population	No. of Boats/Dugout Canoe etc.
1	Bolangir	485	1664	0
2	Puintala	415	1411	0
3	Loisingha	150	835	4
4	Agalpur	425	1312	0
5	Deogaon	558	1425	18
6	Gudvella	430	1105	4
7	Patnagarh	435	1370	0
8	Belpada	95	515	8
9	Khaprakhol	340	815	10
10	Titilagarh	398	935	2
11	Saintala	256	828	4
12	Muribahal	230	650	2
13	Bangomunda	535	983	2
14	Turekela	323	595	5
		5075	14443	59

FISHERY : Fish Farms (Govt.)					
SI No	Name of the Block	Name of the Farm	No. of Fish Farms	Area in ha	No. of Farmers involved
1	Bolangir	Govt Farm, Bolangir	1	10.90	Defunct
2	Loisingha	Govt Farm, Loisingha	1	9.04	8
3	Patnagarh	Govt Farm, Patnagarh	1	2.71	Under subjudice at court
4	Khaprakhol	Govt Farm, Harishankar	1	1.27	Defunct
5	Titilagarh	Govt Farm, Titilagarh	1	3.07	Defunct
6	Turekela	Govt Farm, Dhanmandanga	1	9.00	10
			6	35.99	18

FISHERY : Fish Farms (Private)					
Sl No	Name of the Block	Name of the Farm	No. of Fish Farms	Area in Ha	No. of Farmers involved
1	Loisingha	Alli Fish Farm, Loisingha	1	5.46	18
2	Patnagarh	Sri Kedar Meher, Tendapadar	1	6.00	12
		Sri Bhikari Meher, Tendapadar	1	2.00	8
		Sri Ranjan Meher, Patnagarh	1	6.00	10
		Sri Sapan Ku Patra, Patnagarh	1	30.00	25
3	Khaprakhol	Sri Sarathi Patel, Dameipali	1	6.00	10
			6	55.46	83

Horticulture

In the District 20117 nos. of farmers have taken 9035.94 Ha. of different type of Perennial Plantation for both Household's consummation and business purposes.

Horticultural Plantation

Sl. No.	Name of the Block	Type of Plantations (Perennial Plantation)	Area (In Ha.)	Nos. of farmers Involved
1	Bolangir	Mango	637.00	1510
		Guava	9.70	22
		Pomegranate	4.00	8
		TOTAL	650.70	1540
2	Puintala	Mango	662.00	1525
		Guava	7.50	23
		Pomegranate	1.19	7
		TOTAL	670.69	1555
3	Deogaon	Mango	665.00	1528
		Guava	5.20	12
		Pomegranate	2.70	8
		TOTAL	672.90	1548
4	Gudvella	Mango	672.00	1600
		Guava	7.40	20
		Pomegranate	1.65	6
		TOTAL	681.05	1626
5	Agalpur	Mango	628.00	1415
		Guava	6.70	15
		Pomegranate	9.00	20
		TOTAL	643.70	1450
6	Loisingha	Mango	628.00	1418
		Guava	6.70	18
		Pomegranate	3.00	10

		TOTAL	637.70	1446
7	Patnagrh	Mango	550.00	815
		Guava	6.80	22
		TOTAL	1194.50	2283
8	Belpada	Mango	325.00	690
		Guava	5.00	18
		Pomegranate	3.00	8
		TOTAL	333.00	716
9	Khaprakhol	Mango	350.00	720
		Guava	10.00	28
		Cashew	10.00	20
		TOTAL	370.00	768
10	Titilagarh	Mango	620.00	1389
		Guava	7.40	16
		Pomegranate	2.00	1
		TOTAL	629.40	1406
11	Saintala	Mango	620.00	1365
		Guava	8.60	18
		Pomegranate	1.90	8
		TOTAL	630.50	1391
12	Bangomunda	Mango	632.00	1425
		Guava	8.20	18
		Pomegranate	4.00	9
		TOTAL	644.20	1452
13	Muribahal	Mango	616.00	1359
		Guava	7.60	25
		Pomegranate	3.00	11
		TOTAL	626.60	1395
14	Tureikela	Mango	640.00	1515
		Guava	8.00	20
		Pomegranate	3.00	6
		TOTAL	651.00	1541
		DISTRICT TOTAL	9035.94	20117

Source: DDH, Balangir

2.8.5 Employment and Livelihood

Agriculture is the Prime livelihood option of the District. People of the District also adopt various economic activities to sustain their life and livelihood. In Balangir, 166565 persons were engaged as cultivators, 326416 people as agricultural laborers and 227620 person as wage laborer besides, 2369598 person engaged in animal husbandry, 19246 in Pisciculture, 3519 in registered business, 12263 in government services and 2397 persons are as living on alms.

Sl. No.	Sub-District	CD Block	Population	Cultivators	Agricultural Laborers	Other Daily Wage Laborers	Animal Husbandry	Pisciculture	Business (Registered)	Services (Govt.)	Living on alms
1	2	3	4	5	6	7	8	9	10	11	12
1	Balangir	Balangir, Puintala	327081	27614	40078	61888	456661		544	2429	290
2	Bangomunda	Bangomunda	74579	9364	18129	8188	110260		48	330	60
3	Belpara	Belpada	116136	12372	32498	10483	171489		336	834	204
4	Kantabangi	Turekela	72115	5235	9797	15210	102357		95	223	118
5	Khaprakhol	Khaprakhol	89819	12957	23858	6812	133446		168	427	107
6	Loisinga	Agalpur, Loisinga	152865	15197	33275	19361	220698		312	1992	322
7	Patnagarh	Patnagarh	168325	18705	36709	22574	246313		479	1149	295
8	Saintala	Saintala	148991	15782	28851	18556	212180		696	2067	315
9	Sindhekela	Bangomunda	98777	13988	27643	7415	147823		169	450	72
10	Titlagarh	Titlagarh	162859	12995	25099	30045	230998		231	862	186
11	Turekela	Turekela	52422	7046	13857	4543	77868		53	150	215
12	Tushura	Deogaoan, Gudvela	185028	15310	36622	22545	259505		388	1350	213
Total			1648997	166565	326416	227620	2369598	19246	3519	12263	2397

Source: District Employment Officer, Balangir

2.8.6 Workforce Participation Rate

Census classifies workers as main and marginal workers. Main workers are those who participated in any economically productive activity for not less than six months during the year preceding the date of enumeration, and marginal workers are those who participated in any economically productive activity for less than six months during the reference period. In Census 2011, the workers' participation ratio in Balangir at 43.30 percent was slightly higher than 41.8 percent at the state level in 2011. The share of main and marginal workers in the total workforce is 24.39 percent and 19.31 percent respectively. Further, from the workers category, cultivators, agricultural labour, workers in households industries and other workers constitutes 23.11%, 45.30%, 3.98% and 27.71% respectively. Thus, the District has accommodated 56.30 percent non-workers. Moreover, worker to Non-workers ratio of the District is 1:1.28.

2.8.7 Workforce Participation Rate - Male/ Female

Gender plays a critical role in workforce distribution due to division of works which are more or less gender specific. Census, 2011 revealed that participation of male workers is 56.61 percent as compared to the female counter part (30.61 percent). Participation of female main workers is significantly lower i.e. only 8.53 percent compared to male i.e. 40.04 percent, whereas participation of female marginal workers is higher i.e. 22.08 percent than male i.e. 16.58 percent.

2.8.8 Industries and Mining

During the year 2023-24, the numbers of major industries, MSME, Handicraft and Handloom were 6, 5246 and 2595 respectively in the District. These industries play a critical role to meet the employment needs of people of the District. Out of which 11692 and 2595 are the Handloom and Handicraft Artisans

Sl	Block	Major Industries		MSME		Handicraft and Cottage Industries		Handloom Industries	
		Units	Persons Engaged	Units	Persons Engaged	Units	Persons Engaged	Units	Persons Engaged
1	2	3	4	5	6	7	8	9	10
1	Agalpur	0	0	333	1113	305	305	1	1920
2	Bolangir	2	27	477	2414	365	365	1	516
3	Bangomunda	0	0	650	3119	105	105	1	2568
4	Belpada	1	80	410	1629	90	90	1	1146
5	Deogaon	1	51	308	729	139	139	1	1164
6	Gudvela	0	0	185	725	108	108	1	350
7	Khaprakhol	0	0	357	1161	128	128	1	624
8	Loisinga	0	0	365	1223	399	399	1	498
9	Muribahal	0	0	316	1095	23	23	1	170
10	Patnagarh	0	0	349	1172	195	195	1	2046
11	Puintala	0	0	351	1208	271	271	1	132
12	Saintala	1	2400	337	1213	252	252	1	170
13	Titilagarh	1	445	445	2078	150	150	1	50
14	Turekela	0	0	363	1534	65	65	1	338
Total		6	3003	5246	20413	2595	2595	14	11692

Source: DIC, Balangir

2.8.9 Education

Education is the prime agency which builds the capacity of a community to withstand in any type of Disaster. In Balangir, 1050 Villages/ Habitations are having primary School within the village itself whereas 817 and 364 Villages/ Habitations having ME and High Schools within 5 KMs. Number of teachers is 7520 and the Teacher Pupil ratio is 31.97. During last year, number of students enrolled at the age group of 6 to 15 years was 238486.

Enrolment status of Children (6-14 years)

Sl No.	Name of the Block	Total No. of Children Enrolled	No. of Children Dropped out	No. of Children Never Enrolled
1	AGALPUR	13536	5	0
2	BALANGIR	15905	13	0
3	BALANGIR MPL	16149	9	0
4	BANGOMUNDA	19976	15	0
5	BELPADA	24274	96	0
6	DEOGAON	15011	0	0
7	GUDVELA	8100	0	0
8	KANTABANJI NAC	4182		0
9	KHAPRAKHOL	21568	7	0
10	LOISINGHA	13581	0	0
11	MURIBAHAL	20884	13	0
12	PATNAGARH	21575	14	0
13	PATNAGARH NAC	3654	0	0
14	PUINTALA	16475	0	0
15	SAINTALA	19175	8	0
16	TITILAGARH	19164	16	0
17	TITILAGARH MPL	7340	10	0
18	TUREKELA	18492	24	0
19	TUSURA NAC	1946	2	0
	Grand Total	280987	232	0

Source: DEO, Balangir

2.8.11 Housing

SI No	Name of the Block /ULB	Total No. of HHs	No. of Home less HHs	Houses			
				Total No.	Katcha houses	Semi Puccahouses	Pucca House
1	AGALPUR	17127	14040	14040	3379	0	10661
2	BALANGIR	13450	8339	8339	771	0	7568
3	BANGOMUNDA	19721	18004	18004	4964	0	13040
4	BELPARA	16942	13065	13065	2453	0	10612
5	DEOGAON	15630	11094	11094	1752	0	9342
6	GUDVELLA	8736	6852	6852	1915	0	4937
7	KHAPRAKHOL	16453	11378	11378	1012	0	10366
8	LOISINGA	14065	7113	7113	645	0	6468
9	MURIBAHAL	23864	18806	18806	4115	0	14691
10	PATNAGARH	19211	12001	12001	921	0	11080
11	PUINTALA	16650	13496	13496	3805	0	9691
12	SAINTALA	15928	12452	12452	2310	0	10142
13	TITLAGARH	20686	16768	16768	4022	0	12746
14	TUREKELA	14101	12961	12961	5160	0	7801
Total		232564	176369	176369	37224	0	139145

Source:Zilla Parishad,, Balangir

2.8.12 Electrification

Number of Revenue Villages partially electrified in the District is 1762. Further, out of 414749 households in the District, 119782 (29%) households have been electrified and remaining 294967 households are expected to cover under various electrification scheme of the Government

Sl. No.	Name of the Block	Village Electrification				Household Electrification			Population
		Total No. of Villages	FE- Fully Electrified	PE- Partially Electrified	UE- Un-Electrified	Total No. of HHs	Electrified	UE	
1	Agalpur	106	97	6	3	4122	1435	2687	96042
2	Balangir	125	116	5	4	977	480	497	101942
3	Loisingha	134	121	7	6	641	313	328	111635
4	Puintala	107	99	4	4	1371	564	807	95938
5	Deogaon	129	114	8	7	766	334	432	97645
6	Gudvela	85	72	7	6	872	399	473	51592
	Total :-	686	619	37	30	8749	3525	5224	554794
1	BANGOMUNDA	133	40	93	0	20542	20004	538	74579
2	BELPARA	120	48	72	0	24013	22988	1025	116136
3	KHAPARAKHOL	133	36	97	0	20657	19872	785	89819
4	MURIBAHAL	161	88	73	0	22079	21762	317	127115
5	PATNAGARH	164	100	64	0	28577	27786	791	168325
6	SAINTALA	142	90	52	0	27183	26484	699	148991
7	TITILAGARH	132	87	45	0	21327	21034	293	162859
8	TUREKELA	104	39	65	0	16315	15930	385	52422
	Total	1089	528	561	0	180693	175860	4833	940246

Source: TPWODL, Balangir

2.8.13 Drinking Water and Sanitation

Safe drinking water facilities are available total 1737 villages of the District. The District has installed 20648 functional tube wells and 640 PWS to ensure portable water to 296451 nos. HH of 677 Villages. Besides, 5640 PWS projects are functional in 677 villages which cover about 296451 HH. But, 66 villages (35772 populations) are affected by fluoride. In addition to this, 257 villages are having drinking water crisis during summer season. In sanitation dimension, 3, 90,029 households are covered under IHHL which also includes 1737 ODF villages.

In Urban areas there are 1901 functional tube wells to cater the drinking water needs of the people. Besides, 5 PWS projects with 251.55 KMs supplied potable water to 8880 households.

2.8.14 Migration

Balangir is a migration prone District. Out of 14 Districts, people from 7 nos. Blocks migrate to nearby Districts or State and works in bricks kilns from August to January.

Sl. No	Block	Nos of Migrating HHs	Migrating Population		
			Male	Female	Total
1	Agalpur	0	0	0	0
2	Balangir	0	0	0	0
3	Deogaon	0	0	0	0
4	Loisinga	0	0	0	0
5	Puintala	0	0	0	0
6	Patnagarh	618	2397	1244	3641
7	Belpada	915	3467	1954	5421
8	Khaprakhol	755	2578	1431	4009
9	Titilagarh	0	0	0	0
10	Muribahal	757	2719	1823	4542
11	Turekela	627	2497	1268	3765
12	Bangomunda	532	2149	1213	3362
13	Gudvela	0	0	0	0
14	Saintala	53	173	98	271
	Total	4248	15980	9031	25011

Source: DLO, Balangir

2.8.15 Food Security

Under NFSA, 425142 families and 1375838 members are identified as the Priority households. To meet the food grain requirements of the beneficiaries covered under NFSA, the District had an allotment of 5032.31 Qntl of wheat and 75168.21Qntl of rice. To ensure timely delivery of food grain, the District has 344 nos. of PDS Retail Outlets with 68,200 Qntl. storage capacities. These storage points are being managed by CWC, OSWC and RMC.

Food Security (Public Distribution System)

Sl. No.	Block/ULBs	No. Of HHs	HHs Covered under NFSA			Total No. Of Beneficiaries			Consumption (In Qntls.)		No. Of PDS outlets in the Block	Storage Points	
			PHH House Hold	AAY House Hold	Total House Hold	PHH Beneficiaries	AAY Beneficiaries	Total Beneficiaries	Rice	Wheat		No s.	Storage Capacity (In Qntls.)
1	AGALPUR	24265	22107	2952	25059	73438	9464	82902	4389.01	316.09	20	20	300 Qntls each
2	BANGOMUNDA	29735	27533	4394	31927	92588	11615	104203	5857.08	310.22	26	26	300 Qntls each
3	BELPADA	32458	28774	3722	32496	100688	9666	110354	6119.54	217.56	24	24	300 Qntls each
4	BOLANGIR	25928	22374	2825	25199	74967	8291	83258	4440.2	296.9	25	25	300 Qntls each
5	BOLANGIR MPL	24742	13804	1631	15435	46374	4558	50932	2235.58	653.97	20	20	300 Qntls each
6	DEOGAON	24593	22114	3011	25125	73991	8159	82150	4462.89	290.51	26	26	300 Qntls each
7	GUDVELA	13348	11827	1856	13683	39459	5513	44972	2496.64	125.91	12	12	300 Qntls each
8	KANTABANJI NAC	5521	3133	441	3574	9844	891	10735	545.02	101.55	2	2	300 Qntls each
9	KHAPRAKHOL	23565	26297	3816	30113	84258	9015	93273	5413.26	135.24	19	19	300 Qntls each
10	LOISINGHA	24162	21262	2950	24212	74027	9157	83184	4375.22	358.63	20	20	300 Qntls each
11	MURIBAHAL	28917	28216	4334	32550	93668	11948	105616	5894.69	305.61	22	22	300 Qntls each
12	PATNAGARAH	32927	31779	4446	36225	103933	11176	115109	6457.69	295.06	29	29	300 Qntls each
13	PATNAGARH NAC	5321	2933	419	3352	9663	1081	10744	522.05	107.75	1	1	300 Qntls each
14	PUINTALA	28111	24384	2784	27168	84401	8858	93259	4685.35	509.1	25	25	300 Qntls each
15	SAINTALA	28901	27622	3395	31017	87880	8603	96483	5280.05	302.2	22	22	300 Qntls each
16	TITILAGARH	29949	28953	4628	33581	93195	9600	102795	5958.41	321.14	24	24	300 Qntls each
17	TITILAGARH NAC	8604	5013	447	5460	15907	1148	17055	762.84	188.96	7	7	300 Qntls each
18	TUREKELA	20854	22579	4139	26718	71315	9926	81241	4888.48	125.92	19	19	300 Qntls each
19	TUSURA NAC	2848	1869	379	2248	6431	1142	7573	384.21	69.99	1	1	300 Qntls each
		414749	372573	52569	425142	1236027	139811	1375838	75168.21	5032.31	344	344	

2.8.16 Social Security

In Balangir, 206098 persons have covered under various Social Security schemes. Among them, 144837 (86309 male and 58528 female) have covered under Old age Pensions, 38427 under Widows Pension and 22834 (13110 male and 9724 female) under Disability Pensions.

Sl. No.	Block	No. of Persons covered under Old Age Pension Scheme		No. of Persons covered under Widow Pension	No. of Persons covered under Disability Pension	
		M	F		M	F
1	Bolangir	3775	4610	2453	1015	613
2	Puintala	5157	4168	1911	1038	558
3	Deogaon	3691	3813	2044	865	531
4	Gudvela	2730	1947	1270	647	309
5	Loisinga	6296	3792	1937	910	381
6	Agalpur	4802	3704	2566	995	670
7	Titilagarh	5478	5073	3721	1023	542
8	Saintala	5514	4933	2152	808	412
9	Muribahal	7400	3552	2612	1241	438
10	Bangomunda	4863	4682	3079	842	473
11	Turekela	5615	3472	3363	704	228
12	Patnagarh	6311	5688	3840	898	504
13	Kharakhhol	5231	4221	2865	536	305
14	Belpada	6608	2790	2838	740	241
15	Bolangir M	2564	2264	1825	615	317
16	Titilgarh M	798	865	836	244	133
17	Kantabanji N	612	800	425	147	94
18	Patnagarh N	668	756	459	130	90
19	Tusra N	533	428	145	97	45
TOTAL		78646	61558	40341	13495	6884

Sl no	Block name	Gram Panchayat	Village	No of HHs Headed by PwD	No of Person with Disability (PwD)		No of Widows	Total	No of Aged Person (60 and Above)	
					M	F			M	F
1	BALANGIR	25	125	585	1015	613	2453	12	3775	4610
2	PUINTALA	25	134	650	1038	558	1911	23	5157	4168
3	DEOGAON	26	129	537	865	531	2044	15	3691	3813
4	GUDVELLA	13	85	347	647	309	1270	14	2730	1947
5	LOISINGHA	20	107	565	910	381	1937	23	6296	3792
6	AGALPUR	20	106	604	995	670	2566	11	4802	3704
7	TITLAGARH	24	132	560	1023	542	3721	12	5478	5073
8	SAINTALA	22	134	511	808	412	2152	49	5514	4933
9	MURIBAHAL	22	161	727	1241	438	2612	55	7400	3552
10	BANGOMUNDA	26	133	429	842	473	3079	42	4863	4682
11	TUREKELA	19	101	361	704	228	3363	67	5615	3472
12	PATNAGARH	30	164	501	898	504	3840	58	6311	5688
13	KHAPRAKHO L	21	132	239	536	305	2865	56	5231	4221
14	BELPARA	24	120	447	740	241	2838	42	6608	2790
Total		317	1763	7063	12262	6205	36651	479	73471	56445

2.9 Critical Infrastructures

Infrastructure includes a number of Structures that improve living conditions and commerce, including Schools, Hospitals, Roads, Banking systems is essential in any emergency situation. These infrastructures work a support services in the life of people in an area for their alround development.

2.9.1 Anganwadi Centers

2762 AWC are operational in the District from which 1949 AWCs are having their own building which constitutes 67% of the total AWCs. In these AWCs, 151782 pre-school children have enrolled. Besides, 1648 children are found Severely Malnourished and referred. AWCs are also providing support to 29574 pregnant women and lactating mothers.

ICDS Anganwadi							
Sl No	Name of the Block	Total Number of Anganwadi Centres	No of AWC Having own Pucca Building	No of Children Enrolled	No of Severely Malnourished Children Reffered during the Year	Number of Pregnant Women Enrolled	Number of Lactating Mother Enrolled
1	Agalpur	182	165	6529	24	493	646
2	Bangomunda	198	150	14489	21	1274	1145
3	Belpada	192	118	14244	15	1029	1083
4	Bolangir	226	144	15048	156	1410	1383
5	Deogaon	205	149	7221	155	676	640
6	Gudvela	120	90	5191	169	410	377
7	Khaprakhol	183	130	10519	17	766	979
8	Loisingha	195	171	6975	0	533	726
9	Muribahal	213	179	11388	9	837	1080
10	Patnagarh	278	213	14676	501	1207	1461
11	Puintala	201	126	8295	266	586	779
12	Saintala	179	138	8987	81	806	921
13	Titilagarh	230	148	14067	688	1131	1241
14	Turekela	173	121	13014	68	1041	1052
	TOTAL	2775	2042	150643	2170	12199	13513

Educational Infrastructure and other facilities

2.9.2 Schools and other Educational Institutions (including OAV,SSD)

SI No	Name of the Block / ULB	No of Primary Schools	No of ME Schools	No of High Schools	No of Teacher s	Teache r Pupil Ratio	No of College s	No of ITI / Polytechnic / Vocational Training Institutes
1	AGALPUR	51	49	12	517	20.89	3	
2	BALANGIR	70	46	15	534	21.74	9	8
3	BANGOMUNDA	82	50	14	574	28.42	3	
4	BELPADA	76	69	13	723	28.16	2	
5	DEOGAON	62	67	14	596	19.98	2	
6	GUDVELA	36	34	7	326	18.20	2	
7	KHAPRAKHOL	82	49	12	558	29.81	2	
8	LOISINGHA	50	46	11	423	25.52	3	
9	MURIBAHAL	103	52	12	622	30.20	2	
10	PATNAGARH	89	81	14	745	22.99	3	1
11	PUINTALA	83	50	16	618	21.11	1	
12	SAINTALA	82	62	19	663	21.39	2	
13	TITILAGARH	84	46	15	607	24.67	5	1
14	TUREKELA	69	43	13	476	33.29	2	
15	BALANGIR MPL	16	18	7	242	24.93	3	
16	KANTABANJI NAC	8	3	2	64	28.67	3	1
17	PATNAGARH NAC	5	3	3	69	26.49	2	1
18	TITILAGARH MPL	5	3	4	117	24.99	1	1
19	TUSURA NAC	3	3	2	41	20.68	1	1
Total		1056	774	205	8515	24.87	47	14

2.9.3 Hospitals and Health Centers

Health

The District had District Headquarter Hospital (BBMCH), 236 Sub Centers, 48 PHCs, 15 CHCs, 2 SDHs, 1 Ayurvedic Hospital, 8 MHUs, 21 Ambulances, and 4 Blood Banks across the District. To run such medical establishments, 147 Doctors, 419 paramedical staff, 311 ANMs and 2240 ASHAs are extending their services in the District. In health indicator dimensions, the District has ensured Institutional delivery by 99%, immunization by 98%. But the District had an Infant Mortality Rate (IMR) of 28.5 and Maternal Mortality Rate (MMR) of 166 during 2022-23.

Sl. No.	Block	No. of Health Sub Centers	No. of PHCs	No. of CHCs	No. of Homeopathic/Ayurvedic Hospitals	No. of Sub Divisional Hospitals	No. of District / Private Hospitals	Name & Designation	Mobile No.	No. of MHUs
1	Agalpur	15	4	1	0	0	Govt.	DrBenudhar Pradhan	7008959257	
2	Balangir	15	3	1	0	0	Govt.	Dr. Tarun Kumar Bhoi	9439985830	1
3	Bangomunda	16	5	1	0	0	Govt.	Dr. BiswaranjanKhuntia	7606804790	
4	Belpara	19	4	1	0	0	Govt.	Dr. Rabindra Meher	9439985829	
5	Deogaon	14	3	1	0	0	Govt.	Dr. Chitta Ranjan Mishra	8280095835	
6	Gudvella	10	1	1	0	0	Govt.	Dr. Surya Kanta Mahapatra	9439985969	
7	Khaprakhol	17	4	1	0	0	Govt.	Dr. Suraj Deep	7008475438	1
8	Loisinga	14	3	1	0	0	Govt.	Dr. Shekhar Lal Pradhan	9861032589	1
9	Muribahal	16	3	1	0	0	Govt.	Dr. Thabira Meher	7606804742	
10	Patnagarh	22	4	1	0	0	Govt.	Dr. Sujaya Ku Meher	9439985901	
11	Puintala	17	3	1	0	0	Govt.	Dr Abinash Mishra	9437061154	
12	Saintala	18	4	1	0	0	Govt.	Dr. Samarendra Mohapatra	9439987440	
13	Titlagarh	18	4	1	0	0	Govt.	Dr. Minaketan Kisan	9439987300	1
14	Turekela	15	1	2	0	0	Govt.	Dr. Riyant Meher	8249149354	1
15	Kantabanji	0	0	0	0	0	Govt.	Dr. SoumyashreePritidarsan Panda	7978965434	1
16	Patnagarh SDH	0	0	0	0	1	Govt.	Dr. Peetabas Sha	9937380588	1
17	Titilagarh SDH	0	0	0	0	1	Govt.	Dr. Pradeep Kumar Naik	9439987089	1
18	Balangir MPL	10	2	0	1	0	Govt.			
	Total	236	48	15	1	2	0	0	0	8

2.9.4 Veterinary Hospitals

During 2022-23, Balangir District had 21 Veterinary Hospitals, 106 Livestock Aid center, 146 Dept. AI Institution, 13 functional Gomitra centers to provide veterinary service to the farmers. Besides, 39 Veterinary Doctors are extending services to the farmers at various level.

Veterinary Infrastructures and Human Resources in Balangir District

SL NO	Block	Veterinary Hospitals	No of Doctors	live stock Aid Centres	No. of livestock Inspectors	No of Artificial insemination Centres
1	Balangir	2	5	11	11	20
2	Puintala	1	2	11	10	21
3	Agalpur	1	2	13	12	24
4	Loisingha	1	3	11	10	12
5	Gudvela	1	1	4	2	8
6	Deogaon	2	2	9	8	17
7	Patnagarh	1	3	10	8	20
8	Belpada	1	3	7	5	7
9	Khaprakhhol	2	4	8	7	10
10	Titilagarh	1	3	10	7	13
11	Saintala	3	3	5	1	13
12	Bangomunda	2	3	8	6	9
13	Muribahal	1	1	6	4	10
14	Turekela	2	3	8	6	8
Total		21	38	121	97	192

Livestock Population

Sl No	Block	Livestock Population				Requirement of Fodder in Qtls
		Milch Animals		Draught Animals		
		Cow, Buffalo	Sheep, Goat	Camel, Horse, Bullock	Donkey, Pony etc	
1	Balangir	13717	23603	9314	0	622138
2	Puintala	17002	16040	8532	0	602824
3	Agalpur	10186	17040	11212	0	508664
4	Loisingha	11066	20985	8288	0	530626
5	Gudvela	4301	8125	6292	0	242774
6	Deogaon	12829	20783	11036	0	596842
7	Patnagarh	9399	20095	12627	0	540454
8	Belpada	9171	14777	16438	0	528446
9	Khaprakhhol	6660	13472	15180	0	450080
10	Titilagarh	13751	20606	17485	0	690900
11	Saintala	12428	18816	15803	0	626356
12	Bangomunda	7137	19534	15464	0	523648
13	Muribahal	14679	18303	15669	0	664638
14	Turekela	11427	22979	15872	0	648794
Total		153753	255158	179212	0	7777184

2.9.5 Police, Fire Stations and ODRAF Unit

The District had 19 nos. of Police Stations, 14 Fire and Disaster Response Service Centers and 1 ODRAF Unit comprising of 39s nos. of DRFs personnel in the District.

SL NO.	NAME OF THE BLOCK/ULB	NO. OF POLICE STATIONS	NO. OF POLICE PERSONNEL	POLICE STATIONS
1	Bolangir	4	32 08 01 22	Town PS Cyber PS Energy PS Sadar PS
2	Puintala	1	20	Puintala PS
3	Agalpur	-	-	-
4	Bangomunda	2	15 17	BangomundaPS Sindhekela PS
5	Loisingha	1	19	Loisingha PS
6	Titilagarh	1	29	Titilagarh PS
7	Belpada	1	15	Belpada PS
8	Patnagarh	2	29 18	Patnagarh PS Larambha PS
9	Turekela	2	16 26	Turekela PS Kantabanji PS
10	Deogaon	1	16	Deogaon PS
11	Khaprakhhol	2	20 16	Khaprakhhol PS Lathor PS
12	Gudvela	1	14	Tusura PS
13	Saintala	1	22	Saintala PS
14	Muribahal	1	19	Muribahal PS

Contact Numbers of IICs of Police Station for Rapid Response:

SL NO.	POLICE STATION	NAME AND RANK OF THE OFFICER	MOBILE NUMBER
1	SDPO SADAR	SRI TOPHAN BAG, OPS, SDPO SADAR	94389-16718
2	SDPO PATNAGARH	SRIJYOTIRMAYA BHUKTA, OPS, SDPO PATNAGARH	94389-16719
3	SDPO KANTABANJI	SRI LAXMI NARAYAN MARDI, OPS, I/C SDPO KANTABANJI	82804-02903
4	SDPO TITILAGARH	SMT. ANKITA KUMBHAR, OPS, SDPO TITILAGARH	94389-16728
5	TOWN PS	INSPR. MANBODH BISWAJIT	94389-16522
6	SADAR PS	INSPR. SRIKANT SAHU	94389-16748
7	PUINTALA PS	INSPR. JASHOBANTA NARAYAN PRADHANI	82804-02907
8	LOISINGHA PS	INSPR. BAMDEV SANKHUAL	94389-16514
9	AGALPUR PS	INSPR. SANATAN SAHOO	94389-15793
10	TUSURA PS	INSPR. SANJEEB KU. PRADHAN	94389-16524
11	DEOGAON PS	INSPR. TARABATI PRADHAN	94389-15796
12	PATNAGARH PS	SI ANANTA KU. PADHAN	94389-16747
13	BELPADA PS	INSPR. BULU MUNDA	94389-16512

14	KHAPRAKHOL PS	SI RAMAKANTA SAHU	94389-16515
15	LARAMBHA PS	INSPR. SUSHANTA PRADHAN	82804-02905
16	LATHOR PS	INSPR. JHASKETAN BHOI	82804-02906
17	TITILAGARH PS	INSPR. RANJAN KU. BARIHA	94389-16521
18	SAINTALA PS	INSPR. ABANI KU. SAHU	94389-16749
19	SINDHEKELA PS	INSPR. B. RUDRIYA	94389-16520
20	KANTABANJI PS	INSPR. RASMITA BEHERA	94389-16746
21	TUREKELA PS	INSPR. DHARMENDRA KU. SHANTI	94389-16523
22	BANGOMUNDA PS	INSPR. PRANAYA MURMU	94389-16511
23	MURIBAHAL PS	INSPR. KAMAL LOCHAN BEHERA	82804-02904

Fire Services:

Sl. No	Name of the FS	RANK & NAME OF THE OIC	OIC MB. NUMBER	FS NUMBER	FS PRESENT STRENGTH
1	2	3	4	5	6
1	BALANGIR	AFO RABINDRA PARIDA	8908055319	06652-232333	AFO-1 LFM-2 FMD-2 DKFM-1 FM-17 TOTAL-23
2	LOISINGHA	SO S B Pradhan	7538957536	9437584559	SO-1 LFM-02 DRHV-.01 FMD-01 FM-09 TOTAL-14
3	AGALPUR	LFM Laxman Pradhan	9776313421	8280308511	SO-1 LFM-02 DRHV-.01 FM-07 TOTAL-11
4	MAHIMUNDA	SO Panchanana Behera	9777207542	8895813658	LFM-02 DRHV-01 FMD-01 DKFM-1 FM-08 TOTAL-13
5	PATNAGARGH	SO. JiwanaPratap Toppo	9937900526	06658222353	SO-1 LFM-01 DRHV-.01 FMD-01 DKFM-01 FM-09 TOTAL-14
6	KHAPRAKHOL	LFM.Chudamani Ping	9668431337	9437169469	LFM-01 FMD-01 DKFM-1 FM-09 TOTAL-12
7	BELPADA	LFM. Trinath Mishra	9937783512	06658264777	LFM-02 DRHV-.01 FMD-01 FM-09 TOTAL-14

8	KANTABANJI	SO Asit Kumar Jena	9776907847	--	SO-1 LFM-02 DRHV-.01 FMD-01 FM-11 TOTAL-15
9	MURIBAHAL	LFM. Dilip Munda	9937010784	--	LFM-01 FMD-01 DKFM-01 FM-08 TOTAL-11
10	TITLAGARGH	SO Radheshyam Barik	9938173273	06655295477	SO-1 LFM-01 DKFM-.01 FMD-01 FM-09 TOTAL-13
11	DEOGAON	LFM Dolamani Shanda	8018894668	8480812501	SO-1 LFM-01 DRHV.01 FMD-01 FM-07 TOTAL-11
12	SAINTALA	SO Durdakshya Bag	8917558152	8280817338 06655256338	SO-1 LFM-02 DRHV.01 FMD-01 FM-08 TOTAL-13
13	GUDVELA	SO Akshya Behera	8908381313	06652286101	LFM-03 DRHV-01 FMD-01 FM-08 TOTAL-13
14	BANGOMUNDA	LFM. Pinei Toppo	8270322590	--	LFM-01 FMD-01 DKFM-01 FM-08 TOTAL-11

2.9.6 Cooperative Societies

During 2023-24 the District had 158 PACS with 189547 Farmers. 26950.16 lakhs loan advanced to the farmers by PACS during the reporting period. Besides, 9431.70 Qntls. seed and 135403.40 Qntls. fertilizers were distributed to members of PACS. 2644299.81 Qntl. Of paddy has been procured by various PACS during KMS 2023-24.

Sl. No.	Block	No of PACS	No of farmers	Total quantity of Seed distributed during last year (in Qtls)	Total quantity of Fertilizer distributed during last year (in Qtls)	Total amount of loan distributed (amount in Lakhs.)	Total quantity of Paddy procured during previous season (K+R) in Qtls.
1	Gudvella	8	10994	747.80	12800.00	1054.97	168129.49
2	Deogaon	12	14816	900.00	3160.00	2436.39	261166.96
3	Balangir	14	13587	1295.20	24900.00	1692.83	269762.73
4	Puintala	14	17095	1340.00	26400.00	2817.48	376790.95
5	Loisingha	10	13110	531.00	14950.00	1835.01	140401.33
6	Agalpur	13	15288	1010.60	34500.00	2264.22	284217.62
7	Titilagarh	12	13172	450.00	1390.15	1176.31	173175.29
8	Muribahal	11	12584	295.00	675.60	1716.40	40885.67
9	Bangomunda	11	8760	153.00	1391.45	2048.02	102463.01
10	Turekela	9	8971	306.60	1113.40	2204.38	135111.90
11	Saintala	12	12651	1434.25	1662.45	1663.01	214457.62
12	Belpada	12	16503	349.15	2612.50	1738.58	110609.24
13	Patnagarh	13	19179	282.40	6807.85	2516.12	232667.30
14	Khaprakhol	7	12837	336.70	3040.00	1786.44	134460.70
	Total	158	189547	9431.70	135403.40	26950.16	2644299.81

2.9.7 Banks and Post Offices

As on March 2022-23, there are 67 nos., 46 nos. and 15 nos. of Scheduled Commercial Banks, Regional Rural Banks and Cooperative Banks are respectively operating financial services for the people in the District. Besides, there are a total of 290 nos. of Post Offices including one District Post Office at Balangir.

2.9.8 Road and Railway Network

As on 2022-23, 159.29 Kms of National Highways, 134.41 Kms of State Highways, 134.41 kms major District Roads, 542.1 kms other District Roads, 1391.60 kms of rural roads, 1335 Kms G.P/PS roads, and 249.08 kms of forest roads are connected in the District. Besides that, 193.3 kms and 13.8 Kms of single and double railway line respectively with 14 nos. of Railway Stations are providing convenient communication facilities in the District

2.9.9 Cyclone and Flood Shelters

The District does not have any cyclone and flood shelters. But, the District used Schools and BNRGSK building as temporary Flood Shelters.

2.9.10 Rain Gauge and Automatic Weather Stations

The District has 16 Rain Recording stations (14-Compulsary & 2-Optionals) to record the rainfall on regular basis. The recorded are updated in Odisha Rainfall Monitoring, a web based rainfall monitoring portal of Government of Odisha.

Table 0-1 Rain Recording Station

SI	Rain Recording Station	Location	Contact No.
1	Agalpur	Block Office premises	06653-272028
2	Bangomunda	Block Office premises	06657-282242
3	Belpara	Block Office premises	06658-281025
4	Balangir	DDA Office (15)	06652-250792
5	Deogaon	Block Office premises	06652-284022
6	Khaprakhol	Block Office premises	06658-281025
7	Loisingha	Block Office premises	06653-272028
8	Muribahal	Block Office premises	06655-272010
9	Patnagarh	Block Office premises	06658-222230
10	Puintala	Block Office premises	06652-232098
11	Saintala	Block Office premises	06655-256021
12	Gudvela	Block Office premises	06652-286036
13	Titilagarh	Sub-Collector Office (16)	06655-220522
14	Tureikela	Block Office premises	06657-286001

2.9.11 ULBs (Municipalities and NACs)

Name of the Block/ ULB	Total			SC		ST		Others	
	M	F	T	M	F	M	F	M	F
Balangir M	50582	47656	98238	7343	7003	2438	2426	40801	38227
Patnagarh NAC	10694	10330	21024	1407	1450	1196	1158	8091	7722
Kantabanji NAC	11258	10561	21819	2004	1965	365	342	8889	8254
Titilagarh M	17405	16662	34067	2886	2830	728	750	13791	13082
Tusura NAC	2475	2348	4823	620	618	221	235	1634	1495

(Census 2011)

2.9.12 Information and Communication:

There are various modes of communications are available in Balangir District.

- There is a One Radio Stations(AIR-Prasar Bharati) is situated in the district for transmission of various culaturalprogrammes as well as various communications on Art, culture etc. The Radio Station is headed by one Station director with other satffs.
- One District Information and Public Relation Office is in District Head Quarter headed by DIPRO for dissemination of various official communications to the public and Pess/ Media peoples. All types of Media Management are managed by DIPRO in the District.
- There is one National Informatics Centre (NIC) in the premises of Collectorraterfor holding of Video Conference from CMO to Other Govt. Departments.

2.9.13 Women Empowerment (Mission Shakti) and Social & Financial Inclusion:

Women are the backbone for strengtheningof the Economy. The Govt. of Odisha also focusing on Women Empowerment through inclusive social inclusion. Mission Shakti, OLM and ORMAS are the main Nodal Agencies at District Level for focusing on it.

2.9.14 Irrigation Project:

There are 40 nos. of Irrigation Projects are situated in the District. Upper Suktel Irrigation Project in Khaprakhol Block, ONG Irrigation Project and Titilagarh Irrigation Project for providing water to the farmers for Agricultural Purposes.

SI No	Canal Name	Block	Length of Canal (In Km)	CCA (Ha)
1	2	3	4	5
2	Gambhri Distributary	Khaprakhol	14.09	278.716
3	Darlipali Sub Minor	Belpada	0.78	39.11
4	Gadabhanga Sub Minor	Belpada	2.34	61.21
5	Gadabhanga Sub Minor-1	Belpada	1.2	53.95
6	Gambhri Sub- Minor-1	Belpada	1.835	74.41
7	Gambhri Sub- Minor-2	Belpada	2.66	79.88
8	KarlabahaliDisty.	Khaprakhol	11.85	410.22
9	Malpada Sub-Minor	Khaprakhol	2.09	122.29
10	Odiapali Sub-Minor-1	Khaprakhol	1.72	121.07
11	Odiapali Sub-Minor-2	Khaprakhol	1.085	104.15
12	Titilagarh main canal	Titilagarh	11.770	160.540
13	Kendumundi Minor-1	Titilagarh	1.745	53.032
14	Kendumundi Minor-11	Titilagarh	1.550	65.486
15	Laitarasub Minor	Titilagarh	0.870	21.854
16	Laitara Minor	Titilagarh	1.170	31.804
17	Katarkela Minor	Titilagarh	1.800	8.378
18	Katarkelasub Minor-1	Titilagarh	0.915	26.949
19	Kapsibhatta Minor	Titilagarh	1.355	12.142
20	Kapsibhatta Sub Minor	Titilagarh	0.280	16.009
21	serko Minor	Titilagarh	1.554	34.437

22	Katarkela Sub Minor-III	Titilagarh	0.790	39.368
23	Sirol main canal	Muribahal&Titilagarh	12.450	320.160
24	Belapadar Sub Minor-1	Muribahal	0.899	36.906
25	Belapadar Sub Minor-11	Muribahal	0.900	45.684
26	Darlo Minor	Titilagarh	2.358	168.160
27	SatighatDisty.	Titilagarh	3.097	170.318
28	Bhatipada Minor	Titilagarh	1.776	70.520
29	Turlasub Minor-1	Titilagarh	1.528	57.246
30	Jagua sub Minor	Titilagarh	0.623	28.160
31	Jagua Minor	Titilagarh	1.779	100.650
32	Sihini Sub Minor-1	Titilagarh	1.180	52.386
33	Sihini Sub Minor-11	Titilagarh	1.532	49.758
34	Chitarol Minor	Titilagarh	1.085	56.720
35	GhodarDisty.	Titilagarh	3.445	212.924
36	Udepur Minor	Titilagarh	2.850	202.120
37	Ghodar Sub Minor	Titilagarh	1.161	57.330
38	Bachhajuja Minor	Titilagarh	2.073	195.002
39	Bachhajuja Sub Minor	Titilagarh	0.790	49.950
40	Ghodar Minor	Titilagarh	0.987	126.170

Chapter 3:

Hazard, Vulnerability and Risk Assessment

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

3.1 Multi-Hazard Profile of the District

In the recent past the District has faced drought during 1996,1998, 2000, 2002, 2009, 2010, 2011, 2015, 2017,2018 and Flood / Heavy rain during 2001, 2003 , 2014, 2018 and 2019. During 2019, Balangirurban has received more than 500 mm of rainfall in a single day. Besides the district also experienced unseasonal rain during the year 2010, 2018 in which the entire district suffered a lot due to damage of standing paddy crop.

Besides, drought has become a perennial and recurring phenomenon in this region and the major cause of concern is that the frequency of drought is increasing rapidly in the current years so is the magnitude i.e. in every alternate year one can expect a drought like situation with a greater enormity. Almost 80% area of the district is prone to drought. More than 70 pc of the cultivable area is rain fed and as agriculture is the major source of livelihood, failure and erratic behavior of monsoon over consecutive years has had serious adverse impact on the socio-economic condition of the people living in these areas leading to drastic crop and livestock losses, large-scale migration, distress sale of household assets, starvation, malnutrition, acute drinking water shortage, school dropouts, child labour etc. These things have been highlighted in different Medias drawing national and international attention. Meager irrigation facilities, sloppy and undulating terrain, severely eroded and unproductive agricultural land, skewed land distribution, subsistence agriculture, depleted ground water resource and less diversified livelihood system has further compounded the problem. The inter play of climatic and non-climatic factors in this region is becoming more and more complex, there by intensifying the impact of drought on the community.

Matrix of Past Disasters in Balangir district

In between 1974 to 2021 numbers of Natural Disaster have been reported in the past affecting the lives and livelihood of about 16 lakh people of Bolangir district. The district is frequently affected by drought in every alternative year. As agriculture is the mainstay of economy of the district, frequent drought occurrence severely affect the lives and livelihood of the people of the district.

List of Past Disasters

Year	Calamities	Year	Calamities
1974	Drought	2007	Flood
1979	Drought	2008	Flood
1982	Drought & Flood	2009	Partially drought
1987	Drought	2010	Unseasonal Rain
1992	Drought	2011	Drought
1996	Drought	2012	-
1998	Drought	2013	PHAILIN
2000	Drought	2014	Heavy Rain
2001	Pests in Cotton	2015	Drought
2002	Drought	2016	
2004	Drought	2017	Drought
2005	Partially drought	2018	Drought/ Unseasonal Rain/Pest attack
2006	Flood	2019	Flash Flood
		2021	Heavy Rain

3.1 Major Disasters/ Incidents during 2012-2023

This section described the disaster situation of the district during 2012 to 2023. Balangir district experienced various types of disasters. Though the district is reeling under the grip of drought since long time, it has been recently experiencing other disasters like flash flood, lightning, fire accident and heat wave. Poor drinking water, health and sanitation facilities in the remote villages often leads to the outbreak of epidemics like diarrhea, malaria etc. Various disasters took life of 198 persons during last 10 years. Among all disasters; drought, lightning, fire accidents, sunstroke, flood and epidemic (Malaria and TB) are prominent. A summary table showing types and disaster and their impact is given below.

Table 0-1 Major Disasters/ Incidents during 2012-2022

SI	Disaster/ Incident	No. of incidents during (2012-2023)	No of Block	No of ULBs	No of GP	No of Villages	Affected HH/ Population	No. of Deaths	Livestock Loss	Houses Damaged	Damage to Infrastructure				Damage and loss of Crop Area (in Ha.)	Sand Cast (In Ha.)	
											School/ AWC Buildings	Hospitals	Road in Km.	Other Critical Infrastructur e			
Disasters as approved under SDRF/ NDRF Guidelines																	
1	Flood		14	5	313	1437	35553 5	7	51	25492	NA	NA	NA	NA	39593	8802.8	
2	Drought		14	5	285	1783	16.48 lakh	NA	NA	NA	NA	NA	NA	NA	12479 2	-	
3	Fire	302	9	0	0	298	647	6	99	617	NA	NA	NA	NA	NA	NA	
4	Hail Storm	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
State Specific Disasters as per Notification No.1936 Dt. 01.06.2015																	
13	Lightning	NA	14	5	313	1437	NA	91	NA	NA	NA	NA	NA	NA	NA	NA	
14	Heat wave	NA	14	5	274	1783	NA	14	NA	NA	NA	NA	NA	NA	NA	NA	
19	Drowning (Other than during Flood)	NA	NA	NA	NA	NA	NA	2	NA	NA	NA	NA	NA	NA	NA	NA	
20	Snake Bite	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Other Disasters																	

Table No. 3.2 List of ULBs are Vulnerable to Different Disasters

Sl. No	Name of the Block/ ULB	Name of the GP	Name of the Village / Ward	Total No. of HHs	Total Population	Live stock	Cyclone	Tsunami	Flood	If Yes at column 'J' then mention the Causing Factor	Land Slide	Drought	If Yes at 'M' column then mention the Cultivable Area in Ha.	Lightning	Industrial / Chemical Accidents	If Yes at Column 'P' mention the Industry name	Drinking Water Crisis
A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
1	Gudvela Block	Jamut, Gambhari guda	Jamut	82	327	-	-	-	Flash Flood	NO	No	No	-	-	-	-	-
2	Tusra NAC	Tusra NAC	Low Land of Tusra	38	164	-	-	-	Flash Flood	No	No	No	-	-	-	-	-
3	Balangir (M)	Besides of Laxmi Jore and other low land areas.	Besides of Laxmi Jore	562	1635	-	-	-	Flash Flood	No	No	No	-	-	-	-	-

3.15 Population Requiring Special Care

Special care is unique to women, children, and elderly persons for fulfillment of the special needs and requirements especially during disaster. Thus, following category of population required special care during emergency situation in the district.

Table 3.15 Population Require Special Care

Sl. No.	Block	No. of Persons covered under Old Age Pension Scheme		No. of Persons covered under Widow Pension	No. of Persons covered under Disability Pension		Nos. of Oprphans	
		M	F		M	F	Boys	Girls
1	Bolangir	3775	4610	2453	1015	613	10	12
2	Puintala	5157	4168	1911	1038	558	20	15
3	Deogaon	2691	3813	2044	865	531	9	9
4	Gudvela	2730	1947	1270	647	309	17	9
5	Loisinga	6296	3792	1937	910	381	12	26
6	Agalpur	4802	3704	2566	995	670	6	9
7	Titilagarh	5478	5073	3721	1023	542	11	17
8	Saintala	5514	4933	2152	808	412	12	8
9	Muribahal	7400	3552	2612	1241	438	16	23
10	Bangomunda	4863	4682	3079	842	473	41	30
11	Turekela	5615	3472	3363	704	228	32	30
12	Patnagarh	6311	5688	3840	898	504	9	11
13	Kharakhol	5231	4221	2865	536	305	21	17
14	Belpada	6608	2790	2838	740	241	12	16
15	Bolangir M	2564	2264	1825	615	317	0	0
16	Titilgarh M	798	865	836	244	133	0	0
17	Kantabanji N	612	800	425	147	94	0	0
18	Patnagarh N	668	756	459	13	90	0	0
19	Tusra N	533	428	145	97	45	0	0
TOTAL		78646	61558	40341	13495	6884	228	223

Vulnerability and Risk Assessment related to Disasters: Flood

Flood Vulnerable Areas

Ang and Tel, though important ecological features of the district are prone to possible flood hazards. Agalpur, Gudvela and Titilagarh Blocks are particularly flood prone. During monsoon, the river Tel is the principal source of flood in the district. It receives surplus release of water from main reservoir of Indravati Dam project. The Tel is fed by a number of tributaries of which those flowing inside the district of Balangir are the Undar, the Lanth, the Sungad and the Suktel. The Undar starts from Nuapada district and drains into the southern part of the Titilagarh subdivision. River Ang carries considerable volume of water during the rains for which it affects Agalpur block. Ang and Tel along with their tributaries caused flood in Balangirdistrict..

Flood Vulnerable Areas of the District

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 Infrastructures			
							School/ AWC Buildings	Hospitals	Roads (in Km)	Power Supply for All usage (D+A+C)
1	Agalpur	5	7	13276	8148	3560	0	0	5.81	12
2	Deogaon	9	9	9767	10476	2548	0	0	7.47	12
3	Gudvela	7	16	12653	18624	3261	0	0	13.28	31
4	Loisingha	3	5	4907	5820	1226	0	0	4.15	6
5	Saintala	4	4	6995	4656	1930	1	0	3.32	5
6	Titilagarh	11	11	20416	12804	5317	0	0	9.13	16
Total		39	52	68014	60528	17842	0	0	43.16	82

Flood Causing Agent

The flooding Balangir is, by and large, influenced by discharges of water from rivers. In the event of heavy rain in areas upstream of Tel and Ang, excess water is released downstream thereby causing floods in the downstream areas which resulting in partially marooned area in many blocks. Name of the rivers and numbers of villages may be marooned during monsoon are given below.

Causing agent wise flood vulnerable areas of the District

Sl. No.	Causing agent- Rivers/ Water bodies/Tidal Wave/ Others	No. of Susceptible Blocks/ ULB	No. of Susceptible GPs	No. of Susceptible Villages/ Wards	Vulnerable Population	Milch and Draught animals	Houses	Vulnerable Infrastructure		
								School/ AWC Buildings	Hospitals	Roads (in Km)
1	Lanth Left	1	5	17	15946	6307	3995	28	0	14.11
2	Length Right	1	3	8	7504	2968	1880	12	0	6.64
3	Tel	4	3	9	8442	3339	2115	14	0	7.47
4	Ang	1	2	4	3752	1484	1034	8	0	3.82
5	Suktel	5	7	21	19698	7791	4935	14	0	17.43
6	Sonegarh	2	6	16	15008	5936	3760	18	0	13.28
7	Bijilijore	1	1	2	1876	742	470	3	0	1.66
8	Mayabati Nallah	1	1	1	1232	410	235	1	0	0.91
9	Kurkuri Nallah	1	1	1	1123	210	310	2	0	0.98
10	Bhuasuni Nallah	1	1	1	905	191	268	1	0	0.89
11	Airi Nallah	1	1	1	938	371	235	1	0	1.2
12	Arjun Nallah	1	1	3	2814	1113	705	4	0	2.49
13	Nibrutijore	1	2	4	4362	1514	940	5	0	3.32

Boat Operation

The district had 3 nos. of Boat Operating Points (**Ghats**) which functions during rainy season in three blocks of the district. Few among the **Ghats** connect to Kalahandi and Boudh districts where about 50 people set their journey every day. All boats operate in the districts are non-mechanised. Details of Boat Operating Points are presented below.

Country Boat/Fishing Boat/Tourism Boat Operation in Balangir District

Sl. No.	Name of the Block/Tahasil	Name and address of the Boat Owner with Contact No.	Types of Boat	Name of the River System	Location of the Boat.	Monitoring and Supervision Authority
1	Gudvela	Laba Naik Village-Kukedmal, GP-Nuapada, Gudvela.	Country Boat for Fishing Purpose (Finance under subsidy scheme to fisherman)	Tel River	Used for fishing purpose in Tel River	District Fisheries Officer, Balangir
		Binod Bhoi, S/o-Raghuram Bhoi, Village-Demuhan, Gudvela, Mobile No-9827465472	Country Boat	Khadang River	Demuhan	BDO, Gudvela
2	Deogaon	Kampa Seth, Kendughat, PO-Badbahal, Deogaon.	Country Boat	Tel River	Kendughat	BDO, Deogaon
3	Saintala	Goura Bagarty, S/o-Sadhu Bagarty, Village-Kansar, Saintala, Mob-7077571706	Country Boat	Tel River	Kansar	BDO, Saintala
4	Tusra	DFO(T), Balangir Forest Division.	Pedal Boat-10 nos. and Swan Boat-2 nos. (for Tourism Purpose)	Bhimkata Water body (Pond)	Bhimdungri Pahad, Atgaon	DFO (T), Balangir Forest Division

Effect of Flood on Agriculture and Infrastructures

About 48395 hectare (334476 hectare of cultivable areas) would be affected due to high run off. It is experienced that floods damage standing agricultural crops and carry away the top soil making the land barren which further add stressed in the district. Effect of flood would be comparatively high in Agalpur, Gudvela, Deogaon, Titilagarh, Saintala and Loisingha blocks of the district.

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	Agalpur	14035	7610	39593(Crop loss)+8802 (Sand Cast)	
2	Balangir	9480	10605		
3	Bangomunda	12290	9940		
4	Belpada	16945	15773		
5	Deogaon	9530	10610		
6	Gudvela	6480	6601		
7	Khprakhhol	13130	13800		
8	Loisingha	10270	10905		
9	Muribahal	15669	11047		
10	Patnagarh	21714	17649		
11	Puintala	14332	7241		
12	Saintala	11115	9697		
13	Titilagarh	16298	8712		
14	Turekela	10674	12324		
Total		181962	152514	48395 (14.46%)	

Source: CDAO, Balangir

Electrical Infrastructures

Sl.No.	Name of the Block/ULB	No. of Grid Station	No. of 33/11KV Substations	No. of Distribution Transformers			Conductor/Electrical lines -11KV or less(length in KMs.)	No. of Electrical Poles	No. of High Tension Towers	High Tension lines above 11KV (length in KMs.)
				11KV or Less	11KV < and <60KV	60KV and above				
1	Agalpur		3	352	2		341	11540	0	30
2	Balangir		3	606	3		1006	22575	0	26
3	Loisingha		3	1002	1		416	14300	0	40
4	Puintala		2	543	1		264	9700	0	21
5	Deogaon		3	365	3		209	8600	0	29.5
6	Gudvela	1	1	825	0		505	14360	0	45
7	BMU	1	5	666	0		84	4180	0	75.5
	TOTAL:-	2	20	4359	10	0	2825	85255	0	267
1	BANGOMUNDA		4	881	0		135	5200		35
2	BELPARA		3	675	3		1256	23700		102
3	KHAPARAKHOL		3	583	3		867	17600		96
4	MURIBAHAL		2	788	2		317	10400		51
5	PATNAGARH	1	4	988	3		441	14700		64
6	SAINTALA		3	916	2		416	14400	2	56
7	TITILAGARH		2	510	1		454	15100		53
8	TUREKELA	1	2	672	1		408	13800		58
9	TITILAGARH MUNICIPALITY		1	188	1		234	3800		17
10	PATNAGARH NAC		1	407	2		156	4200		18
11	KANTABANJI NAC		1	178	1		48	3200		12
	TOTAL:-	2	26	6786	19	0	4732	126100	2	562

Drinking Water and Flood Vulnerability

Sl. No.	Name of the ULBs	Total No of Functional Tube Wells	Total No. of Sanitary Wells	Pipe water Supply			
				No. of PWS	No. of Wards Coverd	No. of Households	Length in Km.
1	Balangir(M)	915	0	1	21	11535	165.11
2	Tusura	196	0	1	11	1710	38.89
3	Patnagarh	322	0	1	15	3282	54.20
4	Kantabanji	211	0	1	16	2670	53.66
5	Titilagarh(M)	329	0	1	15	5618	115.10

PHED, Balangir

Whirl wind

Whirlwinds occur rarely in the district particularly during summer season. A bird eyes to occurrence of Whirlwinds showed that there had been a heavy blow of Whirl Wind on 21-05-2009 at Kermeli GP of Saintala Block uprooting many Big trees and massive damage to crops. The storage Godown of Kendu leaf also damaged and the entire leaves packet also totally loss. The electric polls were falling on the rail track causing disruption on Titilagarh- Balangir route. Almost all houses in the village is built in Bamboo and Nada, the whirl wind uprooting all their upper part of house and causing homeless to many people. Similarly, On.25-05-2009 there had been a heavy blow of Whirl Wind along with rain at Badgomunda GP of Gudvella Block uprooting many Big trees and massive damage to crops. The electricity poll at Buromal Village was broken causing disruption on electricity supply for 8 days. Further, a heavy blow of Whirl-wind was experienced on.24.05.2010 at Sindhbhadri under KantabanjiTahasil in the district of Balangir.

Heat Waves

Occurrence of Heat Wave in Balangir District.

The Heat Waves over Odisha generally occur during the summer season which commences in March and stretches until June/July. The maximum temperature during this period goes well above 40 Centigrade. Relative humidity remains less during the summer months, since the monsoon onset occurs at the end of May. Heat Wave in June is more severe if onset of Monsoon is delayed. It is observed that there is increasing trend of Heat Waves in Odisha over the past several years.

Death due to Sunstroke Occurs between 2012-13 to 2019-20 in Balangir District.

Year	Occurrence of Death	Year	Occurrence of Death
2012-13	1	2016-17	5
2014-15	5	2017-18	1
2015-16	1	2019-20	1

Month wise Highest and Lowest Temperature recorded in Balangir (2022)

Sl. No	Month	Balangir		Titilagarh	
		Maximum Temperature (in Centigrade)	Minimum Temperature (in Centigrade)	Maximum Temperature (in Centigrade)	Minimum Temperature (in Centigrade)
1	March	42.5	16.8	42.7	14.8
2	April	45.0	22.5	45.5	23.4
3	May	44.9	22.0	43.5	25.2
4	June	45.3	23.6	45.2	24.0

Trend of Temperature

Year	March			April			May			June		
	Station	Max	Min	RH%	Max	Min	RH%	Max	Min	RH%	Max	Min
2006												
Balangir	34	20	57	39	24	50	40	25	55	36	24	70
Titilagarh	35	18	48	39	19	73	41	19	75	38	18	55
2008												
Balangir	36	19	55	40	23	49	43	26	44	36	23	74
Titilagarh	35	18	44	39	18	43	44	16	34	34	*	71
2010												
Balangir	39	18	70	43	25	63	41	24	66	39	23	65
Titilagarh	38	23	47	44	26	38	41	26	58	39	26	60
2012												
Balangir	38.5	16.5	57.3	41	22	40.5	43	24	36.5	38	25	56.5
Titilagarh	*	*	*	*	*	*	*	*	*	*	*	*
2016												
Balangir	41	18.5	*	46	25.2	*	46	24	*	43.5	25	*
Titilagarh	41.3	18.2	*	46.5	21	*	46.5	18	*	41.5	19	*
2017												
Balangir	43.8	13.2		44.8	20.0		46.5	22.0		43.0	26.0	
Titilagarh	44.0	15.0		45.5	23.0		47.0	18.0		44.5	20.5	
2018												
Balangir	41.0	16.3		43.4	18.5		44.5	23.0		40.8	23.0	
Titilagarh	42.0	17.0		43.5	18.0		44.0	21.0		42.0	20.5	
2019												
Balangir	40.0	16.8		43.0	19.0		46.3	23.1		40.8	23.5	
Titilagarh	42.0	18.5		44.5	19.0		46.3	23.0		43.6	21.5	
2020												
Balangir	38.8	16.6		41.7	21.6		44.8	19.5		40.7	25.3	
Titilagarh	39.0	13.4		44.5	19.0		41.0	18.2		41.0	18.2	
2021												
Balangir	41.6	42.2		42.8	19.2		41.2	23.5		41.0		
Titilagarh	39.0	17.8		42.6	21.8		42.0	22.8		49.6	24.8	
2022												
Balangir	42.2	16.8		44.3	22.5		44.5	23.8				
Titilagarh	42.7	14.8		43.4	23.4		45.8	22.6				

Sources: <http://www.orienvic.nic.in> and DEOC

Safe Drinking Water:

Sl. No.	ULBs	No. of wards having access to safe drinking water	No. of wards affected by Fluoride	Affected Population	No. of Wards affected by Arsenic Contamination	Affected Population
1	Balangir	21	Nil	Nil	Nil	Nil
2	Tusura	11	Nil	Nil	Nil	Nil
3	Titlagarh	15	Nil	Nil	Nil	Nil
4	Patnagarh	15	Nil	Nil	Nil	Nil
5	Kantabanjhi	16	Nil	Nil	Nil	Nil

Source: PHED, Balangir

SI No	Block / ULBs	No of villages having access to safe drinking water	No of village / hamlets affected by fluoride	Affected population	No of village / hamlets affected by Arsenic Contamination	Affected population
1	Agalpur	100	0	0	0	0
2	Balangir	115	0	0	0	0
3	Bangomunda	132	0	0	0	0
4	Belpada	120	0	0	0	0
5	Deogaon	104	0	0	0	0
6	Gudvela	82	0	0	0	0
7	Khaprakhhol	129	0	0	0	0
8	Loisingha	100	0	0	0	0
9	Muribahal	160	0	0	0	0
10	Patnagarh	164	0	0	0	0

11	Puintala	134	0	0	0	0
12	Saintala	125	0	0	0	0
13	Titilagarh	130	0	0	0	0
14	Turekela	97	0	0	0	0
	Total	1692	0	0	0	0

Source: RWSS,Balangir

Fire Accident:

Accident of fire cases have been emerged in the district during summer. Linear housing pattern and high temperature increases the trend of fire accidents in the district. Among the all blocks, Puintala majority cases were reported in Puintala block.

Events/ Festivals/ Functions organized in the District:

The recurring stampedes at places of mass gathering including religious places and public events are great concern in the district. The district observed/organised few important events where probability of crowd is higher and required integrated and structural approach to avoid any eventuality. Following table showed the major events of the district where special care needs to be taken by appropriate authority.

Event/ Festival/ Function

Sl. No.	Name of the Event/ Festival/ Function	Place (Block & Gram Panchayat)	Duration of the event (in No. of days)	Month (as per English Calendar)	Strength of population gathering (Approx.)	Remarks(other vulnerabilities associated with the place/ event, if any to the mentioned)
1	PatkhandaJatra	Jarasingha, Deogaon, Balangir	5 days	September – October	20,000 – 30,000	The village of Jarasingha situated 5 miles from Tusra and two miles from Deogaon is famous for the PatkhandaJatra which takes place in the month of 'Aswina', from 8th to 10th day of the bright fortnight.
2	NrusimhaChaturdasiJatra	Harishankar, Khaprakhol, Balangir	3 day	April-May	50,000 – 1,00,000	This festival is observed on the 14th day of the bright fortnight of 'Baisakh' at Harisankar, a peak of the Gandhamardan range

3	Sithalasasthi	District Headquarter, Balangir	2 day	May-June	50,000 – 1,00,000	The festival is held in the month of May end and June 1st week (6th day of the bright fortnight of the Odiya calendar Jestha month)
4	Dhanujatra	Bhaler, Puintala, Balangir	7 day	January	10,000 – 20,000	This festival is being celebrated in the month of December-January (during Puoshapumima time).
5	Balangir Lok Mahotsav	District Headquarter	4 days	January- February	50,000 – 60,000	This is being organize at district level to spread the local tradition and cultural
6	Sivaratri	Titilagarh, Balangir	3 days	February-March	10,000 – 20,000	The Sivaratri festival is widely observed in India on the 14th day of the dark fortnight of 'Falguna' in honour of Lord Siva.
7	SuliaJatra	Khairguda, Puintala, Balangir	1 day	December – January	10,000 – 20,000	SuliaJatra is celebrated in the village of Khairguda, situated in Balangir district, Western Odisha. It is widely reported that thousands of animals and birds are sacrificed during this festival
	Dussehra	District Headquarter, Balangir	7 days	September	20,000 – 30,000	This is being organized at district level during BijayaDasami

Drought

Drought is a recurring and single most insidious phenomenon in Bolangir district of Odisha. The recurrent drought in the district is mostly responsible for its 'chronic backwardness'. Since a significant proportion of cultivated land in Bolangir is under rain fed agriculture, the variability in date of onset of effective monsoon, higher initial and conditional probability of dry weeks are crucial factors for increasing drought vulnerability and risk in the region. The long-term normal rainfall in the district is also gradually declining. On the other hand, the increasing frequency of occurrence of the hazard is one of the major factors behind the rising level of drought vulnerability in the region, which is mainly due to "wide variability of rainfall from season to season", not as a result of deficiency of annual rainfall. Moreover, one of the prime reasons for increasing drought frequency and vulnerability in the study region is the neglect of the traditional water harvesting structures and poor development of irrigation facilities. Numbers of villages affected due to drought are 332, 358, 1783, 1765 and 1724 in 2009, 2010, 2011, 2015, 2017 & 2018 respectively. More than 50% villages of each block have been affected from 2009 to 2018. Drought hits to its maximum (36% of the cultivable area) extend during 2015, in which Patagarh, Puintala and Belpada blocks severely affected. Summary of the drought affected villages/areas is portrayed below.

Drought Vulnerability

Agriculture Area						
Sl. No.	Name of the Block	Total Area (in Hectares.)	Cultivable Area	Net Sown Area (2021-22)	Irrigated Area (2021-22)	Areas affected by Drought
1	Bolangir	54263	20135	19259	7088	12171
2	Deogaon	60361	20175	19055	9518	9537
3	Gudvella	30740	13115	12655	12346	309
4	Puintala	38076	21995	21847	5770	16077
5	Loisingha	35991	21215	20123	7101	13022
6	Agalpur	32683	21675	21257	12683	8574
	DAO, Bgr	252114	118310	114196	54506	59690
7	Patanagarh	72998	41120	38817	8963	29854
8	Belpara	54174	35810	34799	7152	27647
9	Khaprakhol	60342	29000	27102	10067	17035
	DAO, Ptg	187514	105930	100718	26182	74536
10	Titilagarh	40017	25825	25358	11959	13399
11	Saintala	63440	21650	20296	9040	11256
12	Muribahal	43572	27140	26398	6610	19788
13	Bangomunda	34777	23310	23310	19213	4097

14	Tureikela	36066	23310	23060	4919	18141
	DAO, Ttg.	217872	121235	118422	51741	66681
	Bolangir Dist.	657500	345475	333336	132429	200907

Death:

Snake Bite, Drowning, Lightning.

1	Snakebite	2022	10
		2023	3
2	Lightning	2022	16
		2023	2
3	Drowning	2022	19
		2023	6

Cultivable Areas of the District

Sl. No.	Name of the Block	Average Annual Rain Fall (in MM)	Ground Water Level (mbgl)		Cultivated Area (In Hectares)				
			<i>(based on 61 sample wells)</i>		Paddy		Non- Paddy		Total
			April	August	Rain fed Area	Irrigated area	Rain fed Area	Irrigated area	
1	Agalpur	1289.8	8.72	3.58	6749	7286	6497	1113	21645
2	Bangomunda	1338.6	6.83	4.45	9941	2349	9706	234	22230
3	Belapara	1289.8	4.94	3.59	12306	4639	15178	595	32718
4	Bolangir	1327.5	4.35	4.30	6685	2795	9528	1077	20085
5	Deogaon	1365.7	3.75	2.00	7382	2148	9538	1072	20140
6	Gudvella	1291.0	5.55	2.82	3684	2796	5748	853	13081
7	Khaprakhhol	1289.8	6.51	3.86	9380	3750	13014	786	26930
8	Loisingha	1287.0	5.22	3.05	7750	2520	10041	864	21175
9	Muribahal	1323.5	4.05	3.40	13817	1852	10843	204	26716
10	Patanagarh	1289.8	5.50	3.00	18659	3055	17112	537	39363
11	Puintala	1183.2	3.51	2.37	11888	2444	6679	562	21573
12	Saintala	1204.2	4.50	2.35	8139	2976	9477	220	20812

13	Titilagarh	1379.1	7.05	4.45	12415	3883	8445	267	25010
14	Tureikela	1186.1	5.61	4.00	8144	2530	12058	266	22998
Total		1288.9	5.44	3.37	136939	45023	143864	8650	334476

Ground Water Year Book, Sept, 2015 Central Ground Water Board, Bhubaneswar .Pp132-133

Road Accidents:

The district has 20 nos. and 15 nos. of Traffic Congestion Areas Accident Prone Areas respectively in various stretches of State and National highways. Caution points and villages/habitations adjoining to such accident prone areas are summarized below.

Habitations adjacent to accident prone areas

Sl. No.	Stretch of Road (From - to)	Length in Kms.	No. of Traffic Congestion Areas	No. of Accident Prone Areas	No. of villages/ habitations adjacent to accident prone areas
1	56/00 to 58/00 Km (NH-26)	2.00	1	NA	Loisingha
2	73/00 to 78/00 Km (NH-26)	5.00	1	NA	Bolangir
3	96/0 to 97/500 Km (NH-26)	1.50	1	1	Deogaon
4	98/0 to 100/00 Km (NH-26)	2.00	1	1	Deogaon
5	105/600 to 107/0 Km (NH-26)	1.40		2	Kareldhua Village
6	109/0 to 111/0 Km (NH-26)	2.00	2	1	Saintala
7	117/0 to 118/0 Km (NH-26)	1.00	NA	1	Luhurapali village
8	125/0 to 126/0 Km (NH-26)	1.00	1	1	Belgaon village
9	0/0 to 01/690 Km (NH-57)	1.69	1	NA	Bolangir
10	6/0 to 7/0 Km (NH-57)	1.00		1	Malamunda
11	22/800 to 23/800 Km (NH-59)	1.00	1	1	Bhoipada village
12	58/200 to 59/200 Km (NH-59)	1.00	1	1	Near Rigdol village
13	0/500 to 0/700 Km (SH-42)	0.20	1	1	Adarshapada, Kandpali

14	6/00 to 112/00 Km (SH-42)	106.00	6	4	Ulba, Chatuanka to Alishan , KV College to Dhamandanga, Punjipathar Temple
15	0/00 to 2/500 Km (SH-16)	2.50	2	NA	Bargaon Chowk & Kalahandi Chowk
15	0/00 to 0/500 Km (SH-16)	0.50	1	NA	Titilagarh town

Railway exposed to Flood:

Sl. No.	Flood Causing Agent	Village	Block	RAW/RAT	Length in Km	Section
1	Gate Sarobar	Behera Palli	Balangir	RAW	678/9-10	BLGR-LSX
2	Salebhata MIP	Salebhata	Loisingha	RAW	648/6-8	DKX-KHPL
3	Tedibandh/LoisinghaSarobar	Burda	Loisingha	RAW	660/3-15	KHPL-LSX
4	Tresul Band	Loisingha	Loisingha	RAT	662/9-12	LSX-BLGR
5	Danjarpada MIP	Dangarpada	Murhibahal	RAW	185/10-180/4	BRBL-RNBT

Disaster Risk Reduction (DRR) Plan for Line Departments in Bolangir District for the year 2023.

Sl. No	Line Departments	Planning	Output	Types of Disaster will be address
1	Zilla Parishad, Bolangir, BDOs (Department of Panchyati Raj and Drinking Water)	<p>Planning for Disaster Resilient Houses under IAY, PMAY, Biju Pucca Ghar.</p> <p>Every beneficiaries will be involved in the kitchen garden practices</p> <p>Involve in Designing process of public utility buildings with Engineers/ Architects for practicing of disaster resilient</p>	<p>Houses will be sustainable and disaster resilient in all situation. As a result both the Govt. and the dwellers will bear less cost in maintenance. Casualties will be minimized.</p> <p>The beneficiaries will get nutritious vegetables and health indicators will be addressed.</p> <p>Due to proper planning, big Infrastructures will be disaster resilient. Both the residents and periphery communities will live in safe environment.</p>	<p>Natural Disaster(Flood/Earthquake)</p> <p>Even fire accidents will be checked.</p> <p>Health disorders like, malnutrition will be checked. Quality of life will be enhanced. As a result health sector investment will be minimize.</p> <p>Both Natural and man- made disasters will be avoided.</p>
2	CDAO, Bolangir (Department of Agriculture and Farmers Empowerment)	Creation of awareness among Farmers to adopt Crop Diversion practices for combating against scarcity of agricultural products.	Major crops like paddy, pulses, cereals & millets and vegetable will be produced. People will get harvested food products in all seasons. There will be no gap between supply and demand. Livelihood status will be enhanced and people will come under economic empowerment.	Natural Disaster(Drought/Famine)

3	DDH, Bolangir (Department of Agriculture and Farmers Empowerment)	Plantation of fruit bearing trees in barren and community lands with the help from communities	Sufficient fruit will be produced. There will be no gap between supply and demand. Self reliant in fruits production. Employment will be generated.	Natural Disaster (Drought/Famine)
4	CDVO, Bolangir (Department of Fisheries and Animal Resources Development)	Awareness generation among farmers to adopt Cattle Breed Improvement Programme for increase in Breedable population among domestic animals and fodder cultivation practices	Sufficient milk production will be enhanced. Protein rich food product will be generated. Increase in animal population. Organic manure will be generated.	Manmade Disaster (food scarcity in panic times)
5	Director Fisheries, Bolangir (Department of Fisheries and Animal Resources Development)	Pisciculture activities will be promoted in existing water bodies.	Water bodies, like ponds will be cleaned and maintained. Siltation will be checked. As a result, Rain Water will be stored and community will use the water in summer season, Flood control will be managed through ponds and its outlets.	Natural Disaster (Flood/Drought) Manmade Disaster (Water scarcity)
6	DFO, Bolangir, (Department of Forest & Environment.)	Plantation programme in degraded forest land by involving communities and VSS and Forest fire Management during the month of (February to April every year)	Forest cover will be increased and Ecological balance will be maintained. People will get sufficient forest and NTFP products.	Natural Disasters (Fire/ Flood/ Drought)

7	<p>District Urban Development agency (DUDA), Special Planning Authority (Town planning), and ULBs of Bolangir District. (Department of Housing and Urban Development)</p>	<p>Awareness among urban inhabitants to construct their Homes and Infrastructures as per Town Planning and construction of rooftop water harvesting structures for ground water recharge.</p> <p>Plantation of at least one or two plant in backyard/in front of their home (as per availability of land)</p> <p>Cleaning of natural drainage line by involving the community people, ULBs members and staffs to take sufficient preventive measures to check urban flooding.</p> <p>Monitoring of Public utility Infrastructures and identification of its Disaster related vulnerability.</p> <p>Planning of Garden and tree plantation in newly constructed office premises and Residential Colonies.</p> <p>Monitoring of Rooftop ceiling of GI Sheet on the top of Infrastructures will be checked.</p>	<p>Due to proper Town planning, the road and street will be hassle free for movements. Prober drainage and sewerage system will be maintained. In Rainy season the excess rain water will freely flow and water will not clogged in street and roads.</p> <p>Greenery will be maintained and environmental pollution will be checked.</p> <p>Due to blockage and unnecessary encroachment over natural drainage line the urban flood situation are arising and alarming. So, all preventative measures will be ensured to check the urban flood.</p> <p>All types of safety related mechanisms will be ensured. When, a Disaster like situation will be arise then, proper rescue and evacuation will be done.</p> <p>Greenery and Environment will be ensured.</p> <p>Heat wave radiation will be increased and during whirlwind adverse effect to the concerned households and its periphery.</p>	<p>Natural Disaster(Flood/Earthquake/Fire/Heat wave/ unseasonal weather)</p>
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8	EE, RWSS and Drinking Water, Bolangir (Department of Panchyati Raj and Drinking Water)	Planning for safe drinking water facilities for every HHs in both urban and rural pockets of the district. Periodic maintenance and repair of broken pipes to avoid water scarcity and any kind of water borne diseases like Jaundice	Provision for safe drinking water. Avoid of any kind of water borne diseases like Jaundice. Sufficient safe drinking water	Water Borne Disaster (Jaundice) Manmade Disaster (Water Scarcity)
9	SE & EE, Irrigation (M/LI), Bolangir. (Department of Water Resources)	Planning for irrigation facilities for farmers for cultivation practices in barren land.	Increase in irrigation areas and cropping pattern will be enhanced.	Natural Disaster (Rain/Flood/Famine/Drought)
10	SE and EE, TPWODL, Bolangir Electricity and Energy (Department of Energy)	Cutting of tree branches which are felling on electricity lines in regular interval to avoid any untoward incidents.	Life will be saved during heavy rain and wind. Electricity incidents will be avoided and supply will be ensured	Natural Disaster (Wind/Rain)
11	Additional Director, Factory and Boilers, Bolangir Department of Industries)	Safety measures to be initiated at the level of factory management. Safety Audit must be done for every factories/industries by a team comprising of DRR and DPO, Fire Services	Hazardous Industries will be monitored annually and safety plan will be ensured. Chemical Disasters will be avoided.	Chemical Disaster (Explosion)

12	SP, Bolangir. AFO (Fire Services), ODRAF (Fire, Police, NDRF and ODRAF)	Conduct of Mock Drill exercises at Hospital, Schools, Colleges, cinema halls, shopping complex/Malls, public gathering places like Bus Stand, religious places, picnic spots and high raised buildings/Apartments	Safety precaution will be ensured in people gathering places and Institutions.	Natural Disasters (Fire/ Earthquake/Flood etc.)
13	RTO, Bolangir (Department of Commerce and Transport)	Planning for identification of Black (accident) spots in the district and provision for awareness of safe driving in this accident prone roads. Awareness among wearing of Helmets while driving two wheelers.	Accidental death will be minimized.	Manmade Disaster (like reckless driving)
14	CSO, Bolangir (Department of Food Supplies and Consumer Affairs)	Every eligible family will be come under NFSA and their starvation death will be avoided. Monitoring of Petrol Pumps and LPG Gowdans for ensure of safety related SOPs	Starvation death will be checked and poverty will be reduced. Fire and Gas leakage incidents will be avoided.	Food security and Poverty alleviation. Fire and Gas leakage.
15	Project Director, Watersheds, Bolangir (Department of Agriculture and Farmers Empowerment)	Plantation in barren land through MGNREGA funds and construction of contour bounding/ guard wall to prevent soil erosion.	Soil erosion will be checked and ground water table will be stable.	Natural Disasters (Flood/Drought)

16	DSWO, Bolangir. (Department of Women and Child Development) Mission Shakti	Involvement of AWWs and women SHGs in different types of awareness programme on dissemination of Disasters related activities.	Disasters related IECs and information will be disseminated to every pockets of Bolangir.	All types of Disaster
17	DEO, Bolangir (Department of School and mass Education)	Ensure children friendly atmosphere and School safety programmes. Dissemination of IEC knowledge on Disasters to children. Arrangement of Mock drills exercises in Schools.	Children and schools authorities will gain knowledge on Disasters and they can save themselves from any kind of Disasters	All Types of Disasters
18	VC, Rajendra University, Bolangir (Department of Higher Education)	Dissemination of IEC knowledge on Disasters to Students Arrangement of Mock drills exercises in Schools.	Student and Lecturers will acquire knowledge on Disasters and they can save themselves from any kind of Disasters	All Types of Disasters
19	CDMO, Bolangir (Department of Health and Family Welfare)	Involvement of Health Officials, ANMs, ASHAs in different types of Disasters related awareness and take their help during any kind of disasters (including pandemic, epidemic) for quick response.	Quick Response will be initiated and minimized the casualties.	All Types of Disasters

20	Deputy Labour Commissioner, Bolangir (Department of Labour and Employee State Insurance)	Database on movement of all registered and non-registered migrant labour will be updated and kept in official records for tracking.	Migrants Labour can be evacuated and repatriated during the time of any kind of disasters outside the states	All types of disasters
21	DSSO, Bolangir (Department of Social Security and Empowerment)	Database of old aged persons, senior citizens, PWD and other vulnerable groups. Involving all eligible persons under Social security schemes.	These groups of people are most vulnerable to any type of disasters. So, they can be responded immediately and evacuated during the Disasters situations. Social Security of eligible person will be ensured.	All types of disasters

Chapter 4 Institutional Arrangement

4.1 National Disaster Management Authority (NDMA)

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

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

4.1.1 National Executive Committee (NEC)

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

The Union Home Secretary is the Chairpersons (*ex-officio*) of NEC. The Secretaries to the Government of India in the ministries/departments having administrative control of the agriculture, defense, drinking water supply, environment and forest, finance (expenditure), health, power, rural development, water resources and the Chief of the Integrated Defence Staff of the Chiefs of Staff Committee as members of NEC.

Please refer annexure 15 of Volume –II for Central Government Notification on constitution of NEC

4.2 State Disaster Management Authority (SDMA)

The State Disaster Management Authorities (SDMA) has to be constituted by every state government under the sub-section (1) & (2) of section 14 of Disaster Management Act 2005. 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 f or mitigation and preparedness measures.
- d) Review the developmental plans of different departments of the State to ensure th e integration of prevention, preparedness and mitigation measures.
- e) Lay down guidelines to be followed by the departments of the State Government for the purpose of integration of measures for prevention of disasters and mitigation in their development plans and projects and provide necessary technical assistance there for.
- f) Review the measures being taken for mitigation, capacity building and preparedness by the departments of the Government & issue such guidelines as may be necessary.

- g) Lay down detailed guidelines for providing standards of relief (Not less than the minimum standard of relief in the guidelines of NDMA) to persons affected by disaster in the State.

(Please refer annexure 16 of Volume –II for Odisha Government Notification on reconstitution of SDMA)

State Executive Committee (SEC)

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

The State Executive Committee shall:-

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

(Please refer annexure 17 of Volume –II for Odisha Government Notification on constitution of SEC)

Revenue and Disaster Management Department:

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

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.

Odisha State Disaster Management Authority (OSDMA):

Odisha State Disaster Mitigation Authority (OSDMA) was established by the Government of Odisha as an autonomous organization vide Finance Department Resolution No. IFC- 74/99-51779/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.

State Level Committee on Natural Calamity (SLCNC)

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

The Function of the SLCNC is –

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

(Please refer annexure 18 of Volume –II for Odisha Government Notification on reconstitution of SLCNC)

District Disaster Management Authority (DDMA)

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

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

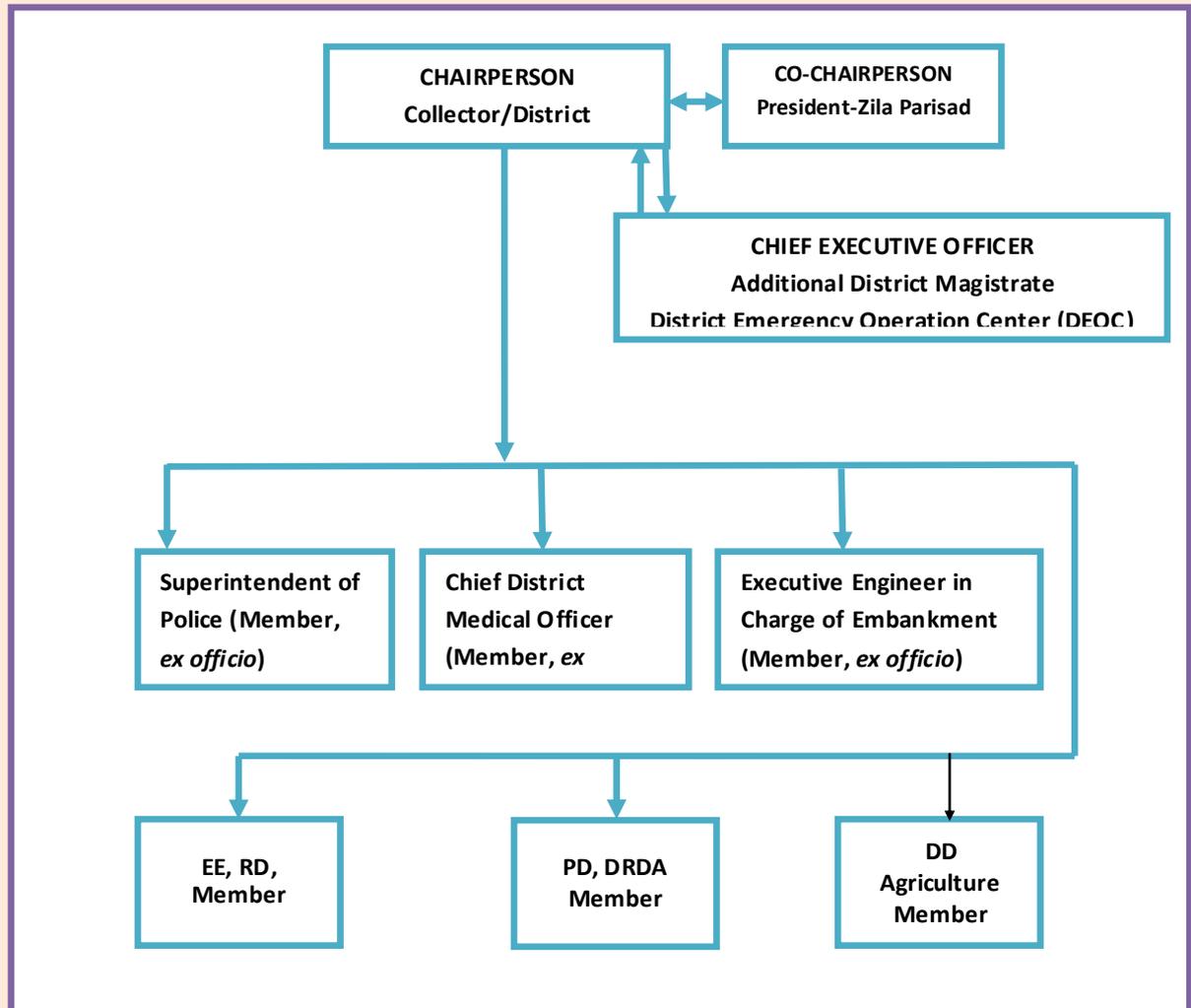
- a) The Collector or District Magistrate or Deputy Commissioner of the District is the Chairperson (*ex-officio*) of DDMA.
- b) The elected representative of local authority is the Co-chairperson (*ex-officio*) of DDMA.
- c) Provided that in the Tribal Areas, as referred to in the Sixth Schedule to the Constitutions, the Chief Executive Member of the district council of autonomous district, shall be the co-Chairperson, *ex officio*
- d) The Chief Executive of the District Authority, *ex officio*;
- e) The Superintendent of Police, *ex officio*;
- f) The Chief Medical Officer of the district, *ex officio*;

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

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

(Please refer annexure 19 of Volume –II for Odisha Government Notification on constitution of DDMA)

Figure 0-1 Organogram of District Disaster Management Authority



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

The District Disaster Management Authority (DDMA) shall:-

- Prepare Disaster Management Plan including District Response Plan of the District.
- Coordinate and Monitor the implementation of the National DM Policy, State DM Policy, State DM Plan and District DM Plan.
- Ensure that vulnerable areas of the districts are identified and prevention and mitigation measures are being undertaken by the departments of the Government both at district level and at local level.

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

To assist the DDMA the District Disaster Management Teams (DDMT) are constituted vide office order no.1113 dt.07-10-2010 of Collector, Balangir with distinct roles and responsibilities.

The DDMT is formed under the guidance of DDMA. Various sub teams are formed to perform some sectoral activities for disaster management. The roles and responsibilities of each team are well defined to avoid any form of overlapping or duplicacy during the time of disaster. They will perform their roles and responsibilities under the overall guidance of DDMA. In case of Balangir the following DMTs have been formed and the members of each team is mentioned hereunder.

- **Information Management Team:**
DIPRO, Balangir, Station Director- AIR, Balangir, District Telecom officer, District Control Room, Police Control Room
- **Food & Social Security Team:**
CDO-cum-EO, Zilla Parishad, Balangir, Sub-Collector, Balangir/ Patnagarh/ Titilagarh/ All Tahasildar, All BDOs, DSWO, DWO, DCPO, Civil Supply Officer, District Panchayat Officer, District Labour Officer.
- **Water Management Team:**
EE (Irrigation), EE (MIP), EE (OLIP), AE (Agriculture), EE (RWSS), PD (Watershed)
- **Livelihood Team:**
DDA, Balangir, DDH Balangir, and DAOs, Horticulturist, CDVO, Asst. Director (Fishery), DFO (Kendu leaf), PD (Watershed), DSMS, GM-DIC, NGOs
- **Forest & Environment Team:**
DFO(T), Balangir Division / NGOs
- **Rescue & Evacuation Team:**
SP, All Sub Collector, Dist. Fire Officer, ODRAF Unit, Balangir.
- **Emergency Health Management Team:**
CDMO, Red Cross, Representative Private Hospital, CDVO, NGO Coordination Cell
- **Relief Management Team:**
Additional District Magistrate (Emergency), Sub-Collector, Balangir/ Patnagarh/ Titilagarh/ All BDOs, All Tahasildars, Addl SP, NGOs/INGOs
- **Infrastructure Management Team:**
EE (R&B), EE (RD), EE (TPWODL), APD (Technical), ZP,, EE (NHAI), District Panchayat Officer, NGOs/ INGOs

District Level Committee on Natural Calamity (DLCNC)

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

Structure of District Level Committee on Natural Calamity

Sl No.	Name of the Member	Designation	Position in DLCNC
1	Shri Chanchal Rana IAS	District Magistrate and Collector	Chairperson
2	Smt. Sangita Kumari Singdeo	Hon'ble MP, Loksabha	Member
3	Shri Niranjana Bishi	Hon'ble MP, Rajyasabha	Member
4	Smt. Tukuni Sahu	Hon'ble MLA, Titilagarh Cabinet Minister, W & CD	Member
5	Shri. Narasingha Mishra	Hon'ble MLA, Balangir	Member
6	Dr. Mukesh Mahaling	Hon'ble MLA, Loisingha	Member
7	Shri Santosh Singh Saluja	Hon'ble MLA, Kantabanji	Member
8	Shri Saroj Kumar Meher	Hon'ble MLA, Patnagarh	Member
9	Smt. Debaki Sahoo	President, Zilla Parishad	Member
10	Sri Lambador Dharua, OAS(S)	Addl. District Magistrate	Member
11	Dr. Pradeep Kumar Guru	Chief District Medical Officer	Member
12	Er. Surendra Kumar Bhoi	Executive Engineer- in charge of Embankment	Member
13	Dr. Santosh Kumar Panda	Chief District Veterinary Officer	Member
14	Sri Kumar Nagbhushan, OAS	Sub-Collector, Balangir	Member
15	Sri Bijayananda Sethy, OAS	Sub-Collector, Patnagarh	Member
16	Shri Dayamaya Padhi, OAS	Sub-Collector, Titilagarh	Member
17	Ms. Shubhasmita Mishra, OAS	District Emergency Officer	Member Secretary

The functions of the State Disaster Management Authority.

The functions of the committee shall be

- a) To advise on the precautionary measures to be taken in respect of flood, drought and other natural calamities.
- b) To assess the situation arising out of such calamities.
- c) To advise on appropriate relief measures and location of relief works.
- d) To meet as often as required.

4.3 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.

Location of National Disaster Response Forces

Sl No.	Battalion, Location	State	Man power drawn from	Contact Person	Fax No.	Mobile No.	Unit Control Room No.	E-Mail
1	01 Bn, NDRF, Guwahati	Assam	BSF	Sh. S. K. Shastri	0361-2849080	9401307887	0361-2840284	assam01-ndrf@nic.in
2	02 Bn, NDRF, Kolkata	West Bengal	BSF	Sh. NitishUpadhyay	033-25875032	9434742836	033-25875032	wb02-ndrf@nic.in
3	03 Bn, NDRF, Munduli	Odisha	CISF	Jacob kisporta	0671-2879711	9439103170	0671-2879711	ori03-ndrf@nic.in
4	04 Bn, NDRF, Arakkonam	Tamil Nadu	CISF	Ms.RekhaNambiyar	04177-246594	9442105169	04177-246594	tn04-ndrf@nic.in
5	05 Bn, NDRF, Pune	Maharashtra	CRPF	Sh. AnupamSrivastava	02114-247008	9423506765	02114-247000	rb-5th@cisf.gov.in
6	06 Bn, NDRF, Gandhinagar	Gujrat	CRPF	Sh.R.SJoon	079-23201551	9428826445	079-23201551	guj06-ndrf@nic.in
7	07 Bn, NDRF, Ghaziabad	Uttar Pradesh	ITBP	--	0164 – 2246570		0164-2246193	pun07-ndrf@nic.in
8	08 Bn, NDRF, Bhatinda	Punjab	ITBP	Sh. P.K.Srivastava	0120 – 27666012	9968610014	0120-2766618	up08-ndrf@nic.in
9	09,Bn,NDRF, Patna	Bihar	BSF	Shri Vijay Sinha	06115-253939	7762884444	06115-253939	patna-ndrf@nic.in
10	10 Bn, NDRF, Vijayawada	Andhra Pradesh	CRPF	Sh. Parshant Dar	0863-2293050	7382299621	0863-2293050	rb-10th@cisf.gov.in
11	11Bn,NDRF, Varanasi	Uttar Pradesh	SSB	Sh. A.K.Singh	0542 – 2501101	9455511107	0542-2501101	up-11ndrf@gov.in
12	12 Bn, NDRF, Itanagar	Arunachal Pradesh	SSB	Sh. AngomKiran Chand Singh	03621-242940	9485236141	0360-2277106	bn12.ndrf@gov.in

4.4 Odisha Disaster Rapid Action Force (ODRAF)

The Government of Odisha formed Odisha Disaster Rapid Action Force (ODRAF) vide notification no.939/CD dated 07.06.2001. ODRAF is a multi-disciplinary, multi-skilled, high-tech force for all types of disasters. ODRAF aims at reducing casualties, clearance of communication channels, quick deployment of personnel and equipments and minimize expenditure and time lag and support institutional arrangement. In 3 phases, ten units of ODRAF have been set up. The ODRAF units are strategically located throughout Odisha. 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. Besides, 10 new units of ODRAF have been proposed to set up at different locations like Sambalpur, Boudh, Kalahandi, Nawarangpur, Gajapati, Berhampur, Puri, Khorda, Kendrapada and Jajpur

Table 0-1 Location of Odisha Disaster Rapid Action Force

Unit	Contact Details of Designated Officer	Mobile/ Phone No.	Email ID
Cuttack (OSAP 6 th Battalion)	Shri Lingaraj Parida, OPS Commandant	98610-39267 (M) 0671-2442148 (O) 0671- 2442442 (R)	comdt6thbn.orpol@nic.in
	I/C ODRAF: Dy Sub Sk.R.Tulla Writer: K.B.Panda	94385 -03808 (M) 94385-82460 (M)	
Jharsuguda (OSAP 2 nd Battalion)	Md. Zaheed, OPS Commandant	94371-76264 (M) 06645-270096 (O) 06645-270038 (R)	comdt2ndbn.orpol@nic.in
	I/C ODRAF: Dy Sub C.Rana Writer: T.B.Gurung	88953-70538 (M) 90404-13176 (M)	
Koraput (OSAP 3 rd Battalion)	Shri B.M.Rao, OPS Commandant	94372-15519 (M) 06852-251344 (O) 06852-151335 (R)	comdt3rdbn.orpol@nic.in
	I/C ODRAF: Dy. Sub R.Ch.Hati Writer: R.K.Naik	99384-06905 (M) 94390-66456 (M)	
Rourkela (OSAP 4 th Battalion)	Shri K.Gauda, OPS Commandant	94373-58292 (M) 0661-2600434 (O) 0661-2600980 (R)	comdt4thbn.orpol@nic.in
	I/C ODRAF Dy Sub. A.Behera Writer Bijaya Sahoo	94374-19436 (M) 94384-25112 (M)	
OSAP 5th Battalion, Baripada	Shri Awinash Kumar, IPS Commandant	94381-53308	comdt5thbn.orpol@nic.in
	I/C ODRAF AC J.R.Nayak Writer T.K.Mohant	94372- 03557 94380-54976	

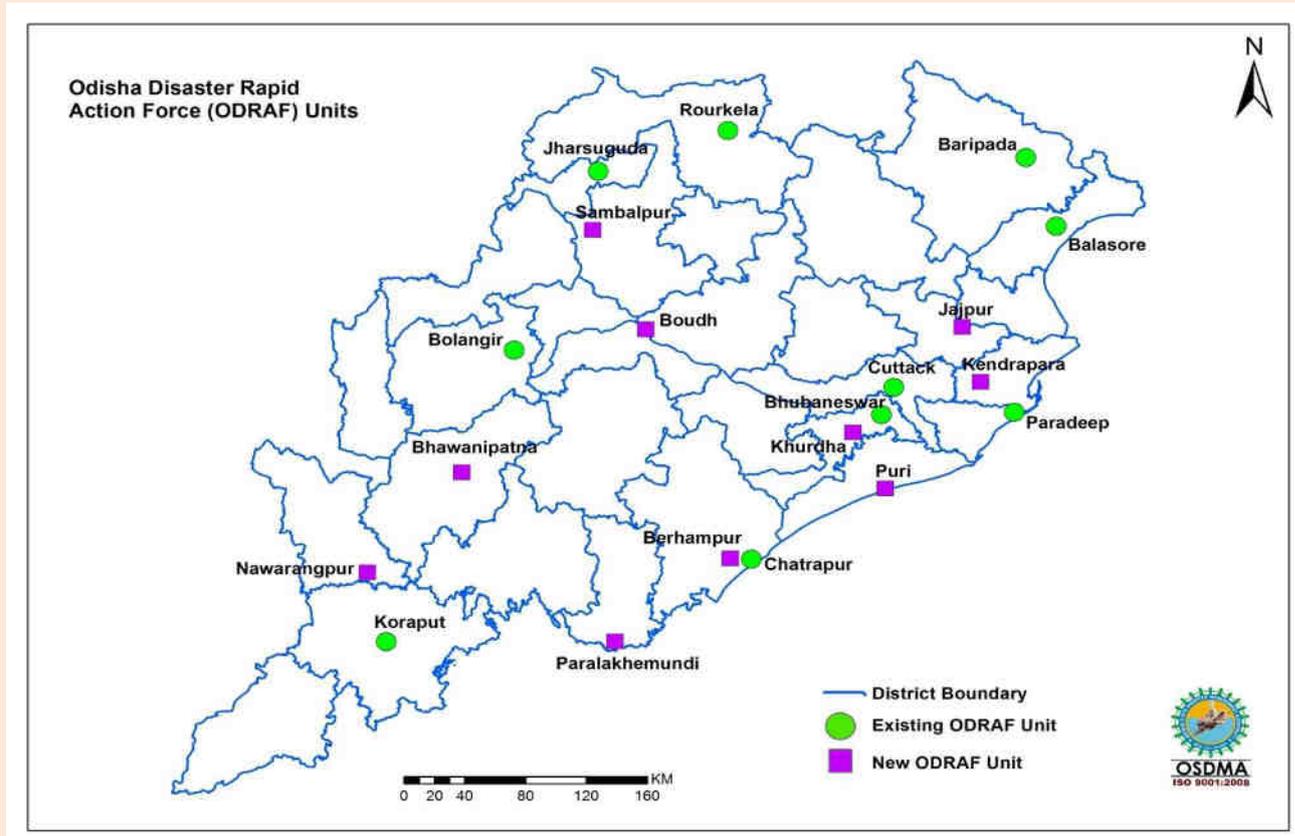
Location of New Odisha Disaster Rapid Action Force with contact details

OSAP 7th Battalion, Bhubaneswar	Shri Biren Ku. Sasmal, OPS 1 Commandant	94370-81266	comdt7thbn.orpol@nic.in
	I/C ODRAF ACP D.K.Dehuri Writer Sadananda Jena	94371-85548 98615-78306	
OSAP 8th Battalion, Chatrapur	Shri B.N.Mishra Commandant	94370-87055	comdt8thbn.orpol@nic.in
	I/C ODRAF SI(A) C.R.Bisoi Writer L.Bijaya Kumar	82800-33508 94373-22432	
APR Balasore District	Shri Nithi Sekhar, IPS SP, Balasore	94381-53309 Spbls.orpol@nic.in	spbls.orpol@nic.in
	I/C ODRAF Sgt.P.K.Ransingh Writer M. Behera	94393-79619 94380-49083	
APR Bolangir District	Shri Rishikesh Dyandeo Khilari, IPS SP, Bolangir	94389 166510 spbgr.orpol@nic.in	spbgr.orpol@nic.in
	I/C ODRAF AC Sri Atish Kumar Sahu	88954 75053	
APR, Jagatsinghpur District	Shri J.N.Pankaj, IPS SP, Jagatsinghpur	94371-02022-23 Spjssp.orpol@nic.in	spjssp.orpol@nic.in
	I/C ODRAFDSI P.K.Routray Writer P.K.Bhuyan	94384-36188 83388-15172	

Unit	In Charge	Telephone/ Mobile	Email
Dhenkenal (OSAP 1st Bn)	Shri Bijaya Prakash Babu, OPS Deputy Commandant	9438509006 (M) 06762- 226229 (O) 06762226291 (CR) Fax: 06762226291	comdt1stbn.orpol@nic.in
Koraput (1st India Reserve Bn.)	Shri P. Manmoth Rao, OPS Commandant	9437463489 (M) 06852-252167 (O) 06852-211320 (CR)	comdt1stirbn.orpol@nic.in
Gunupur (2nd India Reserve Bn.)	Shri BibhutiPattnaik, OPS Commandant	9437090541 (M) 0658-725110 (O) 0685- 725110 (CR)	comdt2ndirbn.orpol@nic.in
Jajpur (3rd India Reserve Bn.)	Shri S.N.Jemadar, OPS Commandant	9437355225 (M) 0672-6244602 (O) 0672- 6244610 (CR) Fax: 0672- 6244610	comdt3rdirbn.orpol@nic.in
Deogarh (4th India Reserve Bn.)	Shri Baikuntha Bihari Rout, OPS Commandant	9438800008 (M) 0664-3242130 (O)	comdt4thirbn.orpol@nic.in
Boudh (5th India Reserve Bn.)	Shri Jamesh Kumar Indrasingh, OPS Commandant	9437232275 (M) 9437232275 (M)	comdt5thirbn.orpol@nic.in

Khurda (6 th India Reserve Bn.)	Shri Naba Kishor Das, OPS Commandant	8895856633 (M)	comdt6thirbn.orpo@nic.in
Koraput (7 th Spl. India Reserve Bn.)	Shri S.N.Bastia Commandant	8895066309 (M) 06852-259112 (CR) Fax:06852-229007	comdt7thsplirbn.orpol@nic.in
Phulbani (8 th Spl. India Reserve Bn.)	Shri A.K.tripathy, OPS Commandant	9437200980 (M) 0684-2253017 (O)	comdt8thsplirbn.orpol@nic.in

Map 0-1 Location of ODRAF Units



4.5 Other Disaster Response Teams in the district

Balangir has many other disaster response teams who will assist in various stages of Disasters. They are DCG, LCG, Aapada Mitra Volunteers, NCC, NSS, NYK, Home Guard, Red Cross and NGOs/VOs.

List of Disaster Response Teams in the Balangir District

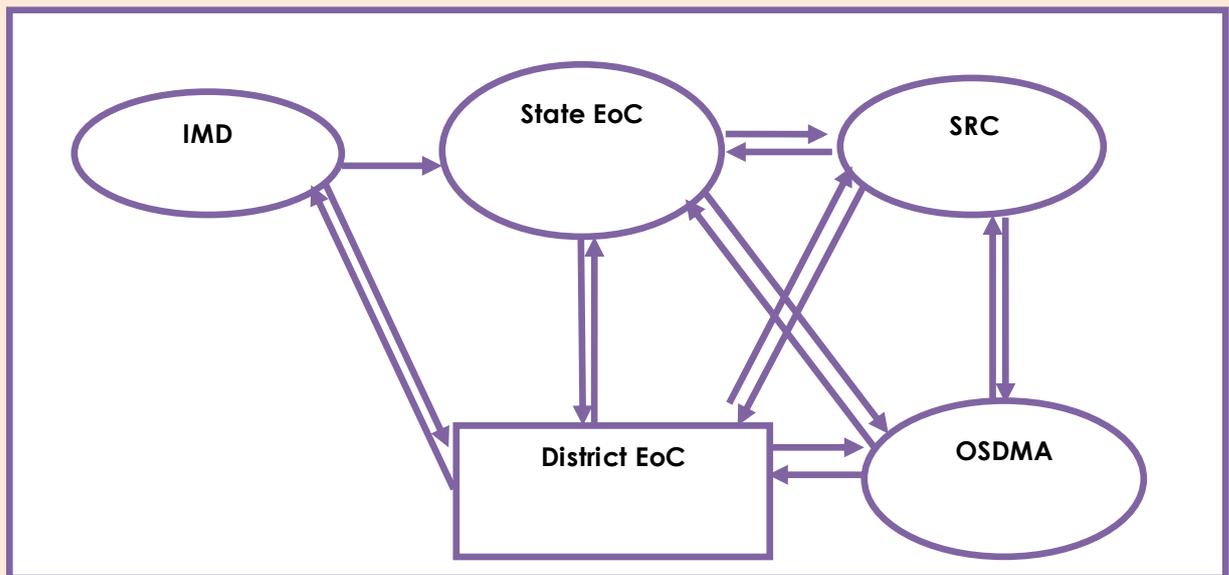
S.I. No.	Name of the Institutions	Name of the Chief Coordinator of the Organization	Designation	Contact Number	Alternate Contact Number	Number of Volunteers
1	ODRAF Unit	Sr Rishikesh Dyandeo Khilari, IPS	Commandant Home Guard	06652-232022-23	9438916510	39
2	Home Guards					557
3	Fire Services	Rabindra Kumar Parida	Assistant Fire Officer	06652-232333	8908055319	184
4	National Service Scheme (NSS)	Hemanta kumar	District Coordinator	7008825293	7008825293	1500
5	National Cadet Crops (NCC)	Col. Kedara Chandra Sahoo	Commanding Officer	7038112069	7038112069	1200
6	Nehru Yuva Kendra (NYK)	M. Narasimha Kumar	District Coordinator	06652-250188	7032910269	300
7	Red Cross	Ms. Shubhasmita Mishra, OAS	Secretary India Red Cross Society	06652-232452	9437708345	180
8	Aapada Mitra Volunteers	Ms. Shubhasmita Mishra, OAS	Deputy Collector (Emergency), Collectorate, Balangir	9437708345	9437708345	300

4.6 Emergency Communication System

4.6.1 State Emergency Operation Center (SEOC)

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

Figure 0-2 Information flow chart from SEOC to Districts



4.6.2 District Emergency Operation Centers (DEOC)

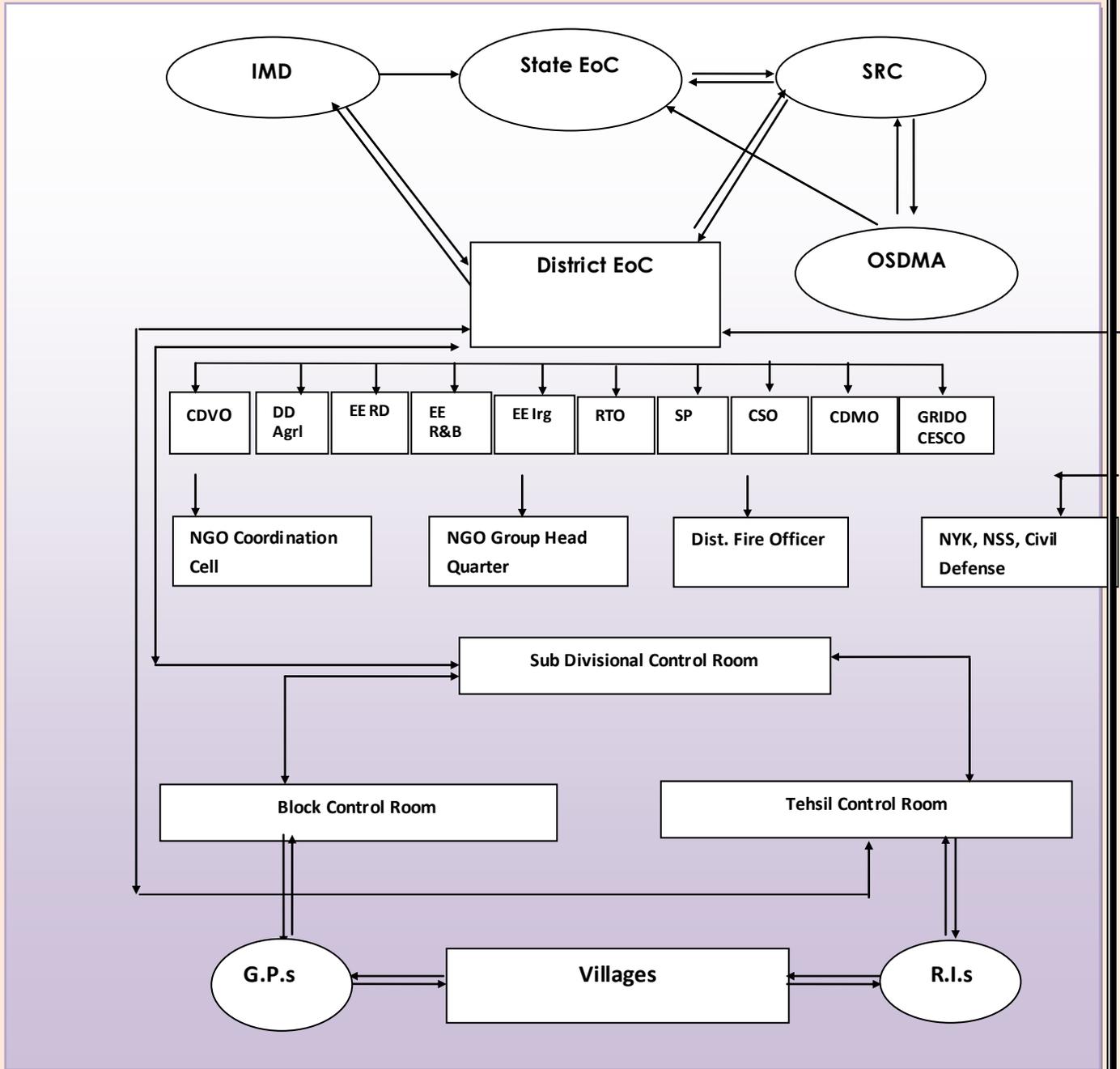
The District Emergency Operation Centre (DEOC) is functioning at District Emergency Section Collectorate, Balangir. The DEOC is headed by the Collector and District Magistrate, Balangir. District Emergency Officer (DEO) functions as the officer-in-charge and looks after the day to day operation of DEOC under the guidance of Addl. District Magistrate, Balangir. DEO is assisted by a District Project Officer (DPO) and Disaster Risk Reduction (DRR) Consultant and other ministerial staff. 1077 disaster helpline number is active in the district. The helpline is under the supervision of DEO, Balangir. During any natural disaster it functions round the clock (24x7) for the purpose of receiving warnings and other information and in normal times it works in official hours from 10.00 am to 5 pm. It also receives all messages /instructions from the state control room and passes them on to the officer in - charge, who, if required, directs them further to sub-divisional control room and block control room. The control rooms at the sub divisional, block headquarters receive all information regarding any emergency situation in their respective areas from the DEOC and also convey any information pertaining to filed status to the DEOC and other officials /non official organizations as the case may be. All the information so collected is transmitted by the DEOC to SEOC daily through appropriate channel in the performa prescribed by the state government time to time.

Equipment provided to DEOC and their operational status

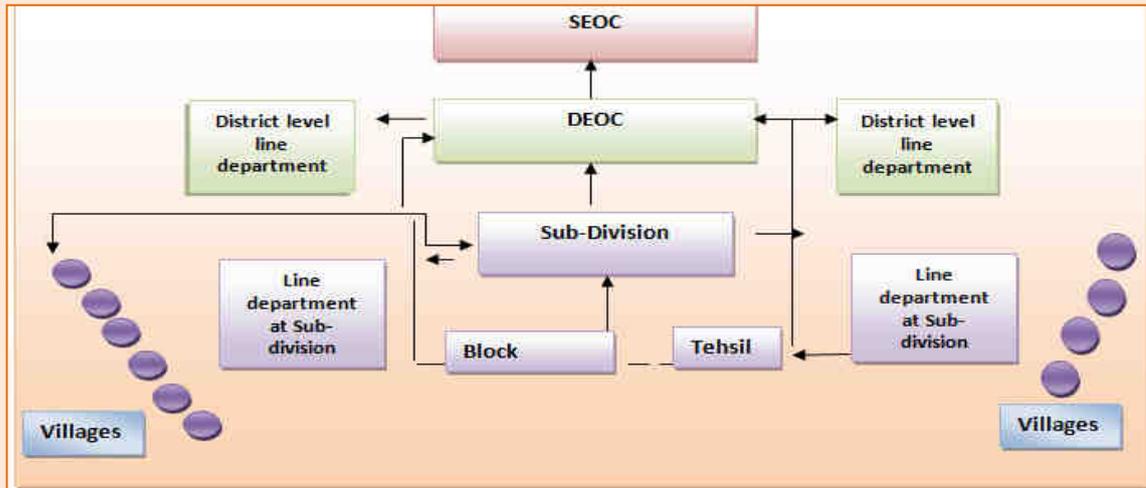
Sl No.	Equipments	Unit	Present Status	
			Operational	Non-Operational
1	Desktop Computer	3	3	0
2	Laser Printer	2	2	0
3	UPS	3	3	0
4	Scanner	1	1	0
5	Fax	1	1	0
6	Ink Jet Printer	0	0	0
7	Multi Utility Machine (Printer, Scanner, Fax, copy)	0	0	0
8	Laptop	1	1	1
10	LCD Projector	0	0	0
11	Photocopier	0	0	0
12	GPS Unit	1	1	0
13	Satellite Phone	1	1	0
14	VHF Sets	1	0	1
15	VHF Mobile Station	0	0	0
16	Walkie-Talkie (VHF hand Set)	2	2	0
17	Portable Diesel Generator	0	0	0
18	Inverter with Battery	1	1	0
19	Inflatable Tower Light	2	2	0
20	Power Saw	2	2	0
21	Life Jacket	2	0	2
22	Life Buoy	0	0	0
23	Aluminum Ladder	1	0	1
24	Fire Extinguisher	2	2	0
25	Siren	1	0	1
26	Megaphone	0	0	0
27	Colour TV/Stand	0	0	0

28	Mobile Phone	1	1	1
29	Display Board	1	0	1
30	White Broad	3	3	3
31	Computer Table/Chair	3	3	0
32	Rack	0	0	0
33	Book Case	0	0	0
34	GI Trunk	2	2	0
35	Commando Search Light	1	1	0
36	Steel Almirah	1	1	0

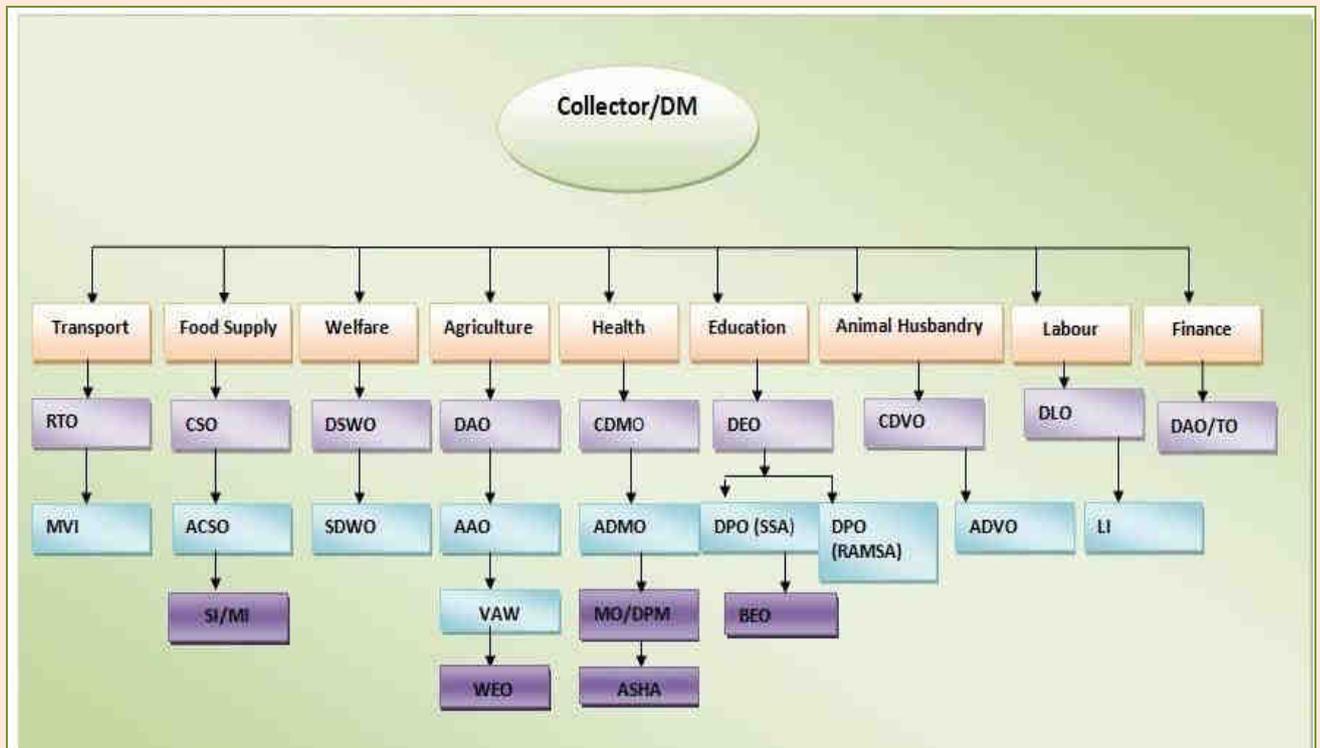
4.6.2 Figure0-3Information flow chart from DEOC to Villages with early warning



Coordination structure at the District level and down the line



Information flow chart from Villages (DEOC) without early warning



4.6.3 Block Emergency Operation Center (BEOC)

Block Emergency Operation Centers operate at Block and Tahasil level work round the clock during summer and rainy season to tackle the heat waves and flood situation (June to October) at block/tehsil level These emergency centers are headed by the concerned the head of the office. BDOs are assisted by Extension Officers. SimilarlyTahasildar are supported by Revenue Inspectors and other staff. Such Emergency Operation Centers follow the Standard Operating Procedure (SoP) prescribed by the Govt. from time to time.

GO-NGO Coordination before and after Disaster in the District

The DM Act 2005 recognises that sometimes the development patterns that do not recognize disaster risk and vulnerability in the specific geographic areas may induce disasters. The proactive approach in the DM Act 2005 to address disaster risk and vulnerability through pre-disaster preparedness and mitigation activities also envisions accountability and multi stakeholder participation, including coordination of the activities of the NGOs at various levels. Sections 30 (2) (xix) of the Act mandate the DDMA for collaboration with stakeholder agencies including NGOs for the purpose of improving the effectiveness of DM. As on date, role of NGOs/CBOs has not been explore in Balangir. Hence, a district level NGO Coordination Cell to be set up with the following points.

Action Points in Go-NGO Coordination

Area	Action Points	Responsibility
Geographic spread of NGOs	Develop a database of NGOs at all levels working on disaster management focusing on geographic outreach and thematic capacities of the organisations.	DDMAs with the help of NGOs
Volume of support provided by NGOs	Compile statistics on quantum of support provided by NGOs at all levels, both international and national.	DDMA
Coordination	Establishing inter agency mechanisms for coordination and networking activities (information and knowledge management, training and capacity building, collaborative advocacy, quality and accountability) at all levels.	DDMA
Accessibility	Establish protocols for cooperation and ensure access to the affected areas with support from government agencies at respective levels like NDRF and SDRF that have good logistics base to reach inaccessible areas.	DDMA, NGOs, CBOs
Hazard and vulnerability based planning	Conduct community centric hazard and vulnerability analysis at all levels, and develop disaster management plans in accordance.	DDMA, NGOs
Community participation	Ensure community participation in assessment, planning, implementation and monitoring of activities at all levels	DDMA, NGOs, CBOs
Mainstreaming of Disability Issues in DM	Support the most vulnerable groups through mitigation activities as well as disaster preparedness and response, with a particular focus on the special needs of the Persons with Disabilities (PWDs).	DDMA, NGOs)
Gender Mainstreaming	Make women's as well as men's concerns and experiences an integral dimension in the design, implementation, monitoring and evaluation of policies and programs such that inequalities between men and women are not perpetuated through the routine operations of DM.	DDMA

on most vulnerable rather than only on epicenter.	Focus National level: Advocate with all actors to reach out to gap areas State level: Coordinate among actors to identify gap Areas District and Local level: Ensure targeting with equity and outreach to all excluded areas.	District NGO Task Forces in DM)
Rural-urban diversity	Develop the capacities of NGOs or specialised civil society agencies at all levels to manage urban as well as rural disasters and accordingly make investments.	DDMAs
Adherence to standards	National level: Develop minimum standards for India State level: Develop minimum standards for the state District and Local level: Develop capacities for adherence to minimum standards through collective and coordinated efforts of all stakeholders	DDMA, NGOs, CBOs
Transparency and accountability	Develop an agreed framework of accountability for all levels and mechanisms to bring in transparency.	DDMA
Do No Harm	Advocacy at all levels on Do No Harm through disaster response and development interventions.	District NGO Task Forces in DM
Exit strategy	Ensure that the NGO programmes have an exit strategy to link with long term recovery/rehab/development programs of other NGOs or the government	District NGO Task Forces in DM

Role of Corporate Sector in the District relating to Disaster Management

Historically, the corporate sector has been supporting disaster relief and rehabilitation activities. However, the involvement of corporate entities in disaster risk reduction activities is not significant in Balangir district. PPP between the Government and private sector would also be encouraged to leverage the strengths of the latter in disaster management. The DDMA would need to network with the corporate entities to strengthen and formalise their role in the DM process for ensuring safety of the communities. The role of corporate sector for awareness generation and local capacity building would be also important and efforts would be made to involve corporate sector in this effort. Besides, the media plays a critical role in information and knowledge dissemination in all phases of DM. The versatile potential of both electronic and print media needs to be fully utilised. Effective partnership with the media will be worked out in the field of community awareness, early warning and dissemination, and education regarding various disasters. The use of vernacular media would be harnessed for community education, awareness and preparedness at the local level. The DIPRO in consultation with the DDMA would take appropriate steps in this direction.

Contact Details of Officials in respect of Balangir District

SI No	DESIGNATION	NAME	OFFICE PHONE	MOBILE	e-mail ID
1	2	3	4	5	6
1	Collector & DM, Balangir	Sri Chanchal Rana, IAS	06652-232223	9437023381	dm-balangir@nic.in
2	Superintendent of Police, Balangir	Shr Rishikesh Dnyandeo Khilari , IPS	06652-232020	9438916510	spblg.orphol@nic.in
3	A.D.M. (Emergency) Balangir	Sri LambodarDharua, OAS(S)	06652-232943	9437457764	adm-balangir@nic.in
4	ADM, Revenue, Balangir	Sri Mahendra Mohapatra, OAS(S)	-	9437331561	-
5	DFO(T), Balangir	Sri Nitish Kumar, IFS	06652-232948	9437032948	dfobalangir@gmail.com
6	CDO-cum-EO,ZP, Balangir	Sri Sushant Kumar Singh, OAS(S)	06652-232863	9437123919	ori-dbolangir@nic.in
7	Project Director, DUDA, Balangir	Sri Sudarshan Soy, OAS(S)		9337124122	dudabgr@gmail.com
8	Sub-Collector, Balangir	Kumar Nagbhushan, OAS	06652-232322	9556505509	subcol.bolaod@nic.in, sdmbblr@gmail.com
9	Sub-Collector, Patnagarh	Sri BijayanandaSethy, OAS	06658-222311	8637252328	subcol.patnod@nic.in , subcollector.ptg@gmail.com
10	Sub-Collector, Titlagarh	Sri Dayamaya Padhi, OAS	06655-220433	8249117584	subcol.titlod@nic.in, subcoll_ttg@yahoo.com
11	District Emergency Officer	Ms. Subhasmita Mishra, OAS	06652-232452	9437708345	emrgsecblgr@gmail.com
12	DRR Consultant	Sri Bikash Ranjan Kara	06652-232453	9437299746	bikashdevelopment@gmail.com
13	BDO, Agalpur	Sri Sankar Kerketa,OAS	06653-272028	9437500946	ori-agalpur@nic.in
14	BDO, Balangir	Dr. Ipsita Patra, OAS	06652-250792	7008417204	ori-bbolangir@nic.in
15	BDO, Bangomunda	Sri Ripunath Suna,OAS	06657-282242	9668400450	ori-bangomunda@nic.in
16	BDO, Belpada	Sri Victor Soren,OAS	06658-284432	9437883240 8249172240	ori-belpara@nic.in

17	BDO, Deogaon	Sri Surendra Kumar Meher, OAS	06652- 284022	9437562445	ori- deogaon@nic.in
18	BDO, Gudvela	Sri Gureswar Bhoi, OAS	06652- 286036	9178805888	ori-gudvella@nic.in
19	BDO, Khaprakhol	Shri Bijaya Kumar Hota	06658- 281025	9938552799	ori- khaprakhol@nic.in
20	BDO, Loisingha	Sri Akash Ranjan Sahu, OAS	06653- 274025	9337782094	ori-loisinga@nic.in
21	BDO, Muribahal	Sri Purnananda Patel, OAS	06655- 272010	9937028116	ori- muribahal@nic.in
22	BDO, Patnagarh	SriPrabhat Kumar Sahu, OAS	06658- 222230	7684806639	ori- patnagarh@nic.in
23	BDO, Puintala	Sri JudhistirNayak,OAS	06652- 232098	9938053362	ori-puintala@nic.in
24	BDO, Saintala	Sri ChandramaniNag,OA S	06655- 256021	9348097518	ori-saintala@nic.in
25	BDO, Titilagarh	Sri Nabin Chandra Naik,OAS	06655- 220522	9437241181	ori-titilagarh@nic.in
26	BDO, Turekela	Sri Debasis Samal,OAS	06657- 286001	7978718986	ori-tureikela@nic.in
27	TahasildarAg alpur	Ms.Saroja Behera, OAS	06652- 278027	9938502156	tah.agal-od@nic.in
28	Tahasildar, Balangir	Dr.Puspanjali Panda OAS	06652- 232547	9438568801	tah.bolangir- od@nic.in
29	Tahasildar, Bangomunda	Sri Jogeswar Dharua, OAS	06655- 282218	9938046333	tah.banga- od@nic.in
30	Tahasildar, Belpada	Sri PrasantiPradhan,OAS	-	7894045031	tah.belp-od@nic.in
31	Tahasildar, Deogaon	Sri Jugal Ku. Biswal,OAS	-	9938561783	tah.deogaon- od@nic.in
32	Tahasildar, Kantabanji	Sri Amrut Lal Behera, OAS	06657- 220324	9999876335	tah.kantab- od@nic.in
33	Tahasildar, Khaprakhol	Sri Aditya Prasad Mishra,OAS	06658- 271222	7008588850	tah.khapra- od@nic.in
34	Tahasildar, Loisinga	Ms. Sanghamitra Kalo,OAS	06653- 274759	9438338024	tah.lsgblgr@nic.in
35	Tahasildar, Muribahal	Mrs. Sonali Patra,OAS	-	9438347305	tah.moribahal- od@nic.in
36	Tahasildar, Patngarh	Sri Laxman Majhi, OAS	06658- 222203	9438257952	tah.patnag- od@nic.in
37	Tahasildar, Puintala	Sri RohitaBhoi,OAS	-	9438281709	tah.puintala- od@nic.in
38	Tahasildar, Saintala	Sri Mansfil Kerketta, OAS	06655- 256123	7978939363	tah.saint- od@nic.in
39	Tahasildar, Titilagarh	Dr. Lalit Bagh, OAS	06655- 220480	7978928427	tah.titlag-od@nic.in
40	Tahasildar, Tusura	Sri R.K. Patel,OAS	06657- 256034	8895003869	tah.tusura- od@nic.in

41	CDMO, Balangir	Dr. Pradeep Kumar Guru	06652- 232243	94399-87100	cdmobalangir@gmail.com
42	CDVO, Balangir	Dr.Santosh Kumar Panda	06652- 231904	9437275390	cdvoblgr1@gmail.com
43	CCSO, Balangir	Mir Raja Ali	06652- 232672	9437028148	cso-bol@nic.in
44	D.S.W.O. Balangir	Smt. Surama Seth	06652- 235850	9178355385	dswobolangir@nic.in
45	D.W.O., Balangir	Sri Alekh Biswal	06652- 232745	9438736927	dwo.balangir@gmail.com
46	CDAO, Balangir	Sri S C Behera	06652- 250195	9439811691	ddabol angir.d ag@nic.in
47	DDH, Balangir	Sri Prafulla Kumar Bhanja	06652- 295051	985334997	ddhbolangir.od@nic.in
48	DEO, Balangir	Sri DhruvaCharan Behera	06652- 232916	9437150042	deobolangir.sme@ nic.in deobolangir@gmail.com
49	DIPRO, Balangir	Sri Jayadev Panigrahi	06652- 232454	94370-83259	diproffice@gmail.com
50	Dist Social Security Officer, Balangir	Sri Naba Krishana Sahu	-	9437429945	dssobalangir15@gmail.com
51	Dist. Panchayat Officer	Sri Pramod Mishra	06652- 232032	9437550541	dpogpbgr@rediffmail.com dpo.od-bol@nic.in
52	S.E.(R&B) Kantabanji	Er.N.K Ghadei	06652- 220216	9438290303	eerbkbj@rediffmail.com
53	S.E. RWSS, Balangir	Er. Saroj Kumar Satpathy	06652- 232173	8280408031	eerwss_blg@nic.in
54	S.E.MI, Balangir	Er. P.K.Palei	06652- 232982	9437143225	mid_balangir@yahoo.co.in
55	EE, Embankment , Balangir	Er. Surendra Kumar Bhoi		9437150208	
56	E.E. OLIC, Balangir	Er. Sachidanand Dalei	06652- 250213	9438691990	eelsdam- eicwr.od@nic.in
57	E.E. PHD, Balangir	Er. Indrajit Sahu	06652- 234647	9438061511	eephbgr@yahoo.co.in
58	Chief Construction Engineer, RW Circle, Balangir	Er. Debendra Kumar Seth	-	94372552584	
59	Superintending Engineer, Balangir Irrigation	Er. Surendra Kumar Bhoi	-	9437150208	eebolangir- eicwr.od@nic.in

	Division Balangir				
60	E.E.NH, Balangir	Er. Jayanta Prasad Naik	06652- 230477	9437242483	eenhbolangir@gmail.com
61	E.E.Electricity Balangir	Er. Bibhuti Bhusan Satpthy	06652- 232024	9437058104	ee_elec_bolangir@wescoOdisha.com
62	E.E.Elexctricity, Titilagarh	Er. Binayak Rout	-	9437058343	jagyeneshpatra@tpwesternodisha.com
63	E.O., Municipality, Balangir	Sri Biswambhar Mishra, OMAS	06652- 232790	9437788409	bgrmc1972@gmail.com
64	E.O., Municipality, Titilagarh	Sri Bipin Kumar Deep, OAS	06655- 220471	9078563058	titilagarhnac@gmail.com
65	E.O., NAC Patnagarh	Sri Gourahari Mahanta, ORS	06658- 222247	9437444808	nac_ptg@yahoo.in
66	E.O., NAC, Kantabanji	Sri Niranjan Dhala, ORS	-	9861924739	nackantabanji@gmail.com
67	E.O., NAC, Tusura	Sri Laxman Kumar Murmu, ORS	-	9668687292	nactusura@gmail.com
68	R.T.O.(l/c), Balangir	Sri Rajesh Marandi	06652- 232424	9438860816	rto_bolangir@yahoo.co.in
69	Assistant Fire Officer, Balangir	Sri Rabindra Kumar Parida	-	8908055319	afo.bolangirfirestation@gmail.com
70	ODRAF Unit, Balangir	Sri Atish Kumar Sahu	-	8895475852	spblg.orphol@nic.in
71	District Fishery Officer, Balangir	Sri Gajendra Pradhan	-	9437569600	adf.bolangir@gmail.com
72	District Child Protection Officer	Smt. Laxmi Singh		9438405166	

Chapter-5 Prevention & Mitigation Measures

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

A better Disaster Management with minimum vulnerability is possible only by means of preparedness and mitigation measures. Experiences shows maximum the disaster preparedness leads to minimum vulnerability. Neither a disaster can be prevented nor diverted to any other place. The only possible thing is to minimize the effect of any kind of Disaster. Hence, various structural and non-structural measures will be taken up in the District to minimise the effects of various types of disaster.

5.2 Structural Measures

It is immensely pivotal for the planning community to respond towards disaster management positively. Urban disaster management is intimately connected to the wholesome process of urban development and therefore needs a sincere incorporation in the development planning itself. The industrial relocation/location, unauthorized-regularization issue, slumming, over densification and continuous influx of population to Delhi are some of the open concerns and that besides a planning challenge it is a concern for disaster management. The district shall take steps for structural mitigation of disaster management.

The departments that are associated with development of residential and commercial plots shall strict the NOC norms. The Building codes shall be strictly enforced in the district. Only seismically oriented engineers, contractors and masons shall be given certificates for multi-story constructions and real estates. Simultaneously retrofitting is to be promoted with the expert advice. The possible two structural measures for disaster protection are Retrofitting of the existing building and Earth Quake Resistant new construction.

1. Retrofitting

Retrofitting for an existing Buildings/ Apartments, Retrofitting or Seismic Strengthening is the only solution to make it disaster resistant. In the district, all lifeline buildings such as major Hospitals, Schools with large space for storage, Infrastructures of District Administration and other vital installations may be retrofitted in the first phase. In the second phase all other significant buildings shall be given priority for seismic strengthening. Before carrying retrofitting, a district level technical committee shall be constituted and approached for assessing the structure and to suggest the type of retrofitting required.

2. Earth Quake Resistant Construction

All the constructions required high investment (above 10 lakhs) shall be carried out under quality inspection programme prepared and implemented under the guidance by a district level technical committee nominated by DDMA. The committee shall look in to this aspect and ensure that such prerequisites are completed and observed by the concerned agencies and construction engineers.

Besides, following categories of structural measures will be taken up in consultation with the concerned line departments.

- **Construction of River Embankment**
- **Agriculture and Drought proofing**
- **Critical Road and Bridges**
- **Water Supply and Sanitation**

5.3 Non-structural Measures:

The non-structural mitigation is basically framed in such a way that the whole population of the district will be sensitized on disaster management and their capacity is developed to cope up with a hazardous situation. Balangir has specific plan for non-structural mitigation measures which is an on-going process in various spheres of life.

1. **Sensitization/Awareness Campaigns:** The District Administration will reach out to the local residents and general public of the district with various level sensitization programmes. Sensitization programmes will be conducted for schools, hospitals, colleges, communities etc. Awareness on multi hazards and dos and don'ts to solve it are most important and basic for a human being to save him/herself. Disaster strikes everywhere everyone irrespective of caste, creed, color, people, and gender. The basic information shall be given in forms of booklets reading materials, audio-visual material etc. The broad objectives of such programmes will be as follows:
 - a) To bring awareness about disasters among the inmates of all institutions and residents of all communities in Balangir.
 - b) To pave way for strict enforcement of building rules in construction departments and contractors.
 - c) Preparation of Building Evacuation Plans and training the general public on basics of self-defence thereby building capacities of school authorities and saving lives in the event of an Earthquake or Fire accidents or any other disaster.
 - d) To sensitize officers from the District Administration, ODRAF, Hospital, Fire Service and all other parallel agencies like DUDA and ULBs.

Different methods and techniques shall be utilized to spread awareness on disaster in the district. Some sample techniques and methods are listed below:

- Capacity Building and awareness
- Distribution of posters and other Information Education and Communication (IEC) materials people
- Do and Don't do
- Street plays, documentaries and films on the subject
- Use of electronic media, especially cable channels
- Quiz, painting and debate competitions at school level

Proposed Sensitization Programme

Sl. No	Name of the Department / Office	Activity/ Project	Starting Date	Date of Completion	Cost	Funding source
1	Health	Awareness on Heat Waves and Endemic Disease, Fire safety.	15 th March	30 th March	30,000	H&FW
2	Revenue	Awareness of officials on SDRF and NDRF norms	15 th March	30 th March	As per norms	DDMA, Bolangir

3	Education	Awareness of BEOs on School Safety Measures	1 st Sept	30 th Sept	30,000	DDMA, S & ME, Fire
4	Agriculture	Awareness of famers on drought preparednes s and mitigation measures	1 st Sept	30 th Sept	1,00,000	Agriculture Deptt.
5	Veterinary	Awareness of officials and farmers on Disaster Mitigation measures in livestock sector	1 st May	15 th May	2,00,000	ARD Dept.
6	Forest	Awareness on forest fire at bothDivisionl a and Sub-Divisional level	1 st May	15 th May	150000	Forest Department
7	Urban Local Bodies (ULBs) and Elected Representatives	Capacity building on Flood Management and and Urban Plantation	15 th May	30 th May	50000	DUDA and ULBs
8	Fire	Mock Drills and Fire Safety	15 th May	30 th May	50000	Fire & ULBs

2. Disaster Management Planning

It is a known fact that drought, flood, road accident, heat waves, fire, lighting are a major concern for the district as fire incidents have risen steeply in the last couple of decades. The first responder of any disaster anywhere is none other than the local people who are the victims too. Once a disaster has been occurred, many agencies like NGOs, Military and Para Military Agencies as well as the Government Agencies approach the area. But it takes time to start rescue and relief operations by these agencies due to poor accessibility and approachability to the disaster site and ignorance to the geographical situation of the affected area. Taking all these in to stoke, the district shall organize various planning exercises with the local bodies.

The strategy of planning will be as follows:

- The territory of each block can be taken as management unit for planning
- Every play school/school/college (Government/Private) in the district, irrespective of size, shall be a management unit
- Every Hospital with more than 10 bed shall have Disaster Management Plans
- All Cinema Halls, Shopping Centres/Malls, Religious Function Centers like, Kalyan Mandap etc. where gatherings are possible, will have Disaster Management plans.
- Every Government Offices/Public Utilities Infrastructures will have separate Disaster Management plan
- All industries in the district, irrespective of size and nature.

During 2023-24 the following planning would be taken up under thus non-structural measures.

Proposed Disaster Management Plan

Sl. No.	Name of the Department/ Office	Activity/ Project	Starting Date	Date of Completion	Cost	Funding Source
1	Health	Hospital Fire Safety Plan	June	July	1,00,000	Health and DDMA
2	Education	School Safety Plan	July	Aug	1,00,000	OSDMA
4	Home	Plan for Mass Gathering and Public Gathering	July	Aug	10,000	DDMA
5	Fire Services	Plan for Cinema Halls, Shopping Centres/Malls	Aug	Sept	20,000	Concerned Cinema Halls, Shopping Centres/Malls
6	All Deptt.	Departmental Disaster Management Plan	Sept	Nov	20,000	DDMA
7	All Deptt.	Community Disaster Management Plan	May	June	5,00,000	OSDMA

The Primary objectives of the initiative shall be:

- To create awareness on disasters and disaster management among institution, officials and general public.
- To prepare Disaster Management plan for each management unit with Hazard and Resource Maps.
- To form Disaster Management Committees (DMC) and Task Forces within the management unit, to manage disasters and train them specifically.
- To exercise Mock Drills in each Community in a regular interval of time including evacuation exercises. Each logical unit shall collect the template/modal plan document from the DEOC at the district administration and after preparation a copy of the same shall be submitted to the DEOC and the other shall be with the management unit. This plan document shall be updated at least bi annually and the update information shall be given to the DEOC in writing. The district DEOC shall help the management unit in conducting the planning exercises as and when they request the same.

5.3 Integration Disaster Risk Reduction (DRR) Activities in various Govt. Schemes.

Possible DRR measures can be taken up under various Govt. schemes are reflected below:

Table 0-1 Possible activities for DRR

Sl. No.	Scheme	Possible activities for DRR
1	MGNREGS	Drought, Flood protection and Plantation measures
2	IAY, PMAY, Biju Pucca Ghar	Designing and Construction of fire proof and earthquake resilient house in vulnerable pockets.
3	GGY	Strengthen relief lines and drainage, restoration of power distribution station,
4	Finance Commission Assistance	<ol style="list-style-type: none"> 1. Building capacity in the administrative machinery for better handling of disaster risk response and for preparation of District Disaster Management Plans (DMPs) as envisaged in the Disaster Management Act (2005). 2. Relief requirements of a severe calamity could not be met from state resources. 3. Special budgetary allocation on disaster preparedness and mitigation measures.
5	NHM and Health	Preventative measures taken for control of Epidemics and immunization to communities specially children and old aged persons etc.
6	PMKSY	Provision irrigation facilities to all agricultural farm land and initiation of flood control measures, repair and maintenance of embankment of water bodies like ponds and Rivers.
7	JALNIDHI	Drought mitigation measures through creation of captive irrigation sources through shallow tube wells, bore wells, dug wells and river lift projects
8	NFSM (Rice)	<ol style="list-style-type: none"> 1. Integration with the district plan and fixed targets for each identified pockets of the district. 2. Promotion and extension of improved technologies i.e. seed, Integrated Nutrient Management including micronutrients, soil amendments, Integrated Pest Management (IPM) and resource conservation technologies along with capacity building of farmers; 3. Supply of diesel pump sets during drought
9	RKVY	<ol style="list-style-type: none"> 1. Preparation of agriculture plans for the districts and the States based on agro-climatic conditions, availability of technology and natural resources; 2. Development of structures for to mitigate various disaster related to agricultural, horticultural and veterinary
10	Biju KBK	Building Rural infrastructure on Bijli, SadakPani (e.g., critical roads and bridges, village electrification, minor irrigation projects, tanks, watershed and afforestation.

11	MPLAD/MLALAD	Construction of Guard wall for checking of flood Management and soil erosion
12	Western Odisha Development Council (WODC)	Construction critical road communication, Minor Irrigation, construction of Check Dams, new and cleaning of Water Harvesting Structures, installation of LIPs, Rural Water supply schemes in vulnerable pockets etc.
13	National Afforestation Programme through FDA,s	Plantation in degraded and barren lands, promotion of Afforestation through community forestry programme , control & prevention of forest fire and digging of trench & forest fire lines and structural measures like construction of small Check Dams to control soil erosion.
14	Minikit Programme, Enrichment of Crop residue and Departmental Fodder farms	Promotion of perennial roots & slips for fodder development during drought.
15	Rajiv Gandhi Grameen Vidyutikaran Yojana (RGGVY): / Biju Gram Jyoti Yojana (BGJY)	To provide availability of Electricity for all people to un-electrified villages in the Bolangir District.
16	Odisha Power Sector Improvement Projects	Projects like Disaster Response Centre, Disaster Resilient Power System , District Headquarter Projects for reliable and un-interrupted power supply to the consumers during natural shocks

Chapter-6:

Capacity Building Measure

6.1 Approach

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

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

6.2 Capacity Building of Govt. Officials, PRIs and ULBs Representatives and SHGs (Mission Shakti) etc.

A series of training programmes will be organized for specialized groups like, District DDMTs, Sub Divisional and community level office bearers, Head Masters and Principals, Doctors and Engineers, Architects, Urban Planners, Builders & Contractors and Masson etc. All walks of officials will be trained. This can even be on construction of buildings and other structures earth quake resistant.

- District will identify sensitization as one of the best tools to create awareness programme and preparation of Community Based Disaster Management planning. In this respect the DDMA will organize a series of programmes for the community people, school and NGOs.
- There are organizations like Civil Defence, NYK, NCC, NSS etc. which have thousands of volunteers from each nook and corners of the district. The district will train their volunteers and the wardens of these bodies in the district, thus people from various corners will be trained and sensitized in disaster management and this can make a magnifying result.
- For better sustainability of disaster management, the DDMA will think of training Civil Defence & Home Guard, NYK, NCC and NSS volunteers at the cost of the district administration and they shall be given certificate of training, identity cards as disaster managers.
- Training programmes will be organized with NGOs/CBOs in the district or they shall be funded for organizing such programmes. Corporate sponsors/Banks shall be contacted to hold such massive training programmes.

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

Proposed Training programme

Sl .	Name of the Course/ Training Programme	Participants	Duration of the Training Programme	Month of Organization	To be Organized by
1	Training programme on Heat Wave Preparedness	All BDOs/ EE RWS &S, CDMO, CDVO,EOs (ULBs), BDOs, Tahasildars and NGOs, etc.(60 Numbers)	1 day	March,2023	DDMA, Balangir
2	Training programme on Heat Wave, snake bite, lightning, drowningcasualty management	BDOs/Tahasildars/ Doctors and Paramedical Staff/ ANMs.	2 day	June,2023	OSDMA
3	Post Disaster Damage Assessment	AAOs of all Blocks, EOs (ULBs), RIs of Tahsils and Line Departments(100 Numbers)	2 day	Sept	DDMA/SRC
4	Public Health in emergencies-(safe drinking water and sanitation)	All BDOs, ULB and district level officials of PHED/ RWS & S Dept.(50 Numbers)	1 day	March	CDMO / EE, RWSS
5	Training of teachers on school safety including DM plan and conduct of Mock Drills	BEO / ABEO / BRCC(60 Numbers)	1 day	Oct	DEO
6	Block level training programmes on role of PRIs in Disaster Risk Management / VDMP (in 14 nos. of Block)	BDOs/Tahasildars/Line Department Officials/Sarapanch/, ZP& PS Members)	1 day	June	DDMA/BDO
7	Role of Media in Disaster Risk Management	Media Personal (50 members)	1 day	Nov	DDMA and DIPRO, Balangir

8	Convergence and Livelihood Security: Post Disaster Strategies	Officials of the Line Dept. (100 members)	1 days	Sept	PD, DRDA/DDA/DDMA
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9	Mainstreaming DRR and CCA in Development Planning	All BDOs, EOs(ULBs), DUDA, Special Planning Authority (Town Planning)Head of line departments (50 members)	1 Days	Jan and June (Every Year)	DDP/DDMA
10	Training for selected community members and NGO representatives of 14 nos. of Block on preparation of VDMP Training and Mock drill of VDMC member	Selected members from the GP/village at block level (70 each in two blocks 140)	2 days	June	DDMA

6.3 Table Top Exercise:

Collector-cum-Chairman, DDMA, Bolangir will organise a Table Top Exercise (TTEx) involving all District, Block and ULB level officials to assess the emergency response plans and preparedness on various Disasters on 18th and 19th June,2023 .

6.4 District/ Block level Mock Drills:

Periodic Mock Drills will be organized involving District and Block level officials/ institutions to assess the capacity and preparedness to face certain Disasters. Issues faces during Mock Drill and recommendation will be incorporated in updating of DDMP. DDMP, 2023-24 recommends following mock drill during 2023-24.

Proposed Mock Drills

Sl.	Type of Mock Drill	Officials/ Institutions to be involved	Month/ Date
1	Industrial Accidents/ Industry Specific Mock drills	Ordnance Factory Badmal, Saintala/BPCL Plant, Barkani/ Key Officials of Line Department	March,2023
2	Fire Accident	Fire Service, Schools. Colleges, AWCC NSS, NCC, NYK, Child Care Institutions (CCIs), ODRAF	May,2023
3	Public Gathering/ Cinema Halls/High Raised Buildings & Apartments and malls.	Police and Fire Services.	September,2023
4	Flood Management	ULBs, Fire Services and ODRAF Unit.	June,2023

6.5 Disaster Management Education (School Safety and School Disaster Preparedness):

All educational Institutions (Both Govt. and Private) which are functioning in the districts may include organizing awareness generation programmes in schools and colleges and conducting basic mock drills for fire and other disasters. For the purpose, DDMP, 2022-23 proposed the following programme under Disaster management Education (School Safety and School Disaster Preparedness.

Proposed School Safety and School Disaster Preparedness

Sl. No.	Name of the Programme	No. of Schools, Colleges and Other Educational institutions to be covered during the year	Time Line	Remarks
1	Awareness generation and mock drills for fire/ earth quake/ firastaid etc.	100	July	Teachers from High Schools at Block level
2	Preparation of School Disaster Management Plan	100	July-Aug	Teachers from High Schools at Block level
3	District level Quiz/ painting/ debate competitions	Based on the nomination received from the BEOs/DEO	October,2023	District level

6.6 Community Capacity Building and Community Based Disaster Management:

The district has identified 1764 inhabited villages including 71 inaccessible pockets. During 2019-20, VDMC will be constituted and strengthened in 500 villages (20%). Nature of capacity building programme will be prioritised depending the type and intensity of disaster. Villages with multi-hazard vulnerability towards drought, flood, heat waves, and fire incidents have been selected in the first phase on phase wise manner. Utmost care has been given to include persons having prior experience as a member of the VDMC. Blocks wise numbers of villages and members to be covered under 2022-23 is as follows.

Proposed CBDM for the Year 2023-24

Sl. No.	Block Name	No. of vulnerable villages to be covered during 2023-24	No. of VDMC and task force member to be oriented	No. NGOs to be involved in the process	Time line	Remarks
1	Agalpur	24	600	Total 8 nos. of NGOs are selected by DLSC to conduct VDMP in Phase-II.	VDMP will be completed by October,2023 by the concerned NGOs.	VDMC and rescue team will be constituted and trained
2	Loisingha	9	225			
3	Balangir	16	400			
4	Puintala	16	400			
5	Saintala	20	500			
6	Deogaon	15	375			
7	Gudvela	23	575			
8	Khprakhhol	17	425			
9	Belpada	19	475			
10	Patnagarh	14	350			
11	Titilagarh	15	375			
12	Muribahal	26	650			
13	Bangomunda	14	350			
14	Turekela	13	325			
Total		250	6025			

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

The district does not have any cyclone/flood shelter. BNRGSK building and schools of the villages will be used as a flood/cyclone shelters. Thus, School Management Committees and GP functionaries (PRIs, PEO, GRS and GS) shall be entrusted to maintain the identified shelters at village. Task force shall be forms from the village youths.

Chapter – 7

7.1 Climate Change Adaptation & Mitigation

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

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

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

7.2 Important Greenhouse Gases: Carbon Dioxide (CO₂)

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

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

7.3 Important Greenhouse Gases: Methane (CH₄)

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

7.3 Important Greenhouse Gases: Nitrous Oxide (N₂O)

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

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

7.4 Important Greenhouse Gases: Fluorinated Gases

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

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

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

7.5 Important Green House Gases:Chlorofluorocarbons (CFCs)

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

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

7.6 Green House Gas Sequestration

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

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

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

Major Greenhouse Gases Contributors (Anthropogenic) to Climate Change

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

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

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

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

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

7.7 Sectors with High Mitigation Potential

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

Chapter – 8
Safety of Schools and Child Care Institutions

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

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

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

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

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

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

8.2 Guidelines on School Safety Policy, 2016- NDMA

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

Vision :

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

Approach and Objectives

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

Applicability

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

All hazard approach

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

Right to Education Act 2009

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

Key Action Areas

1. Institutional strengthening at the State & District levels

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

2. Planning for Safety

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

3. Capacity building for safe schools

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

4. Disaster Management in Core Curriculum

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

8.3 Category & Type of Schools

Name of the Block	Government Schools				Government Aided schools		Private Schools	
	Elementary		Secondary		Elementar y	Secondar y	Elementar y	Secondar y
	Rura l	Urba n	Rura l	Urba n				
AGALPUR	105	0	13	0	3	11	11	
BALANGIR	125	0	16	0	3	10	13	2
BALANGIR MPL	0	33	0	7	3	3	25	8
BANGOMUND A	133	0	14	0	1	11	8	1
BELPADA	145	0	14	0	0	11	7	1
DEOGAON	129	0	15	0	1	12	14	2
GUDVELA	74	0	8	0	0	5	5	
KANTABANJI NAC	0	11	0	2	0	0	3	3
KHAPRAKHO L	144	0	13	0	0	9	6	2
LOISINGHA	98	0	11	0	2	12	5	4
MURIBAHAL	155	0	12	0	0	8	8	2
PATNAGARH	162	0	15	0	0	18	6	1
PATNAGARH NAC	0	17	0	3	0	1	4	3
PUINTALA	133	0	17	0	0	10	16	3
SAINTALA	146	0	20	0	0	8	16	4
TITILAGARH	133	0	16	0	3	12	8	1
TITILAGARH MPL	0	8	0	4	0	1	4	5
TUREKELA	117	0	13	0	0	7	2	1
TUSURA NAC	0	7	0	2	0	0	3	1
Grand Total	1799	76	197	18	16	149	164	44

8.4 Category & Type of Students

Name of the Block	Government Schools			Government Aided schools			Private Schools	
	Elementary	Secondary		Elementary	Secondary		Elementary	Secondary
	Rural	Urban	Rural	Urban				
AGALPUR	8020	0	3362	0	98	1139	1137	
BALANGIR	8180	0	5154	0	145	1291	1215	573
BALANGIR MPL	0	3813	0	2056	0	412	2567	5363
BANGOMUNDA	12081	0	4264	0	28	2270	1262	113
BELPADA	16621	0	4502	0	0	1883	611	446
DEOGAON	8852	0	3847	0	13	1698	915	166
GUDVELA	4902	0	1851	0	0	735	625	
KANTABANJI NAC	0	1032	0	709	0	0	117	1667
KHAPRAKHOL	14018	0	5102	0	0	1328	990	481
LOISINGHA	8152	0	3174	0	138	1194	291	1053
MURIBAHAL	14403	0	4341	0	0	1258	539	238
PATNAGARH	14261	0	4207	0	0	2334	908	717
PATNAGARH NAC	0	886	0	948	0	0	570	1576
PUINTALA	8361	0	5513	0	0	1335	1060	262
SAINTALA	10070	0	5416	0	0	1318	1138	1084
TITILAGARH	11865	0	4427	0	295	2351	613	155
TITILAGARH NAC	0	1228	0	1593	0	147	44	2624
TUREKELA	13097	0	4516	0	0	1084	95	3
TUSURA NAC	0	677	0	274	0	0	366	576
Grand Total	160519	7636	65256	5580	787	21777	15063	17097

8.5 School Safety Advisory Committee (District)

School Safety Advisory Committee Balangir District

1. Date of Formation 3.4.2017
2. Institutional Architecture

SI No	Name & Designation	DESIGNATION	Contact No.	Email ID	Remarks
1	Sri Chanchal Rana, IAS	Collector & District Magistrate	9437023381	dm-balangir@nic.in	Chairperson
2	Shri Rishikesh Dyandeo Khilari, IPS	Superintendent of Police	9438916510	spblg.orphol@nic.in	Co-Chairperson
3	Shri Rabindra Ku. Parida	District Fire Officer	8908055319	balangirfirestation@gmail.com	Member
4	Sri Alekha Biswal	District Welfare Officer	9438736927	dwo.balangir@gmail.com	Member
5	Mrs. Surama Seth	District Social Welfare Officer	9178355385	dswobolangir@nic.in	Member
6	Dr. Snehalata Sahu	CDMO	9439987100	cdmobalangir@gmail.com	Member
7	Sri Saroj Satpathy	Executive Engineer (RWSS/PWD)	82804-08031	eerwss_blg@nic.in	Member
8	Ms. Shubhasmita Mishra, OAS	District Emergency Officer	9437708345	emrgsecblgr@gmail.com	Member
9	Sri Sushant Ku. Singh	Panchayat Raj Officer	9437123919	ori-dbolangir@nic.in	Member
10	Sri Jnanendra Mallik	Principal DIET	9348851764		Member
11	Sri Raghav Panigrahi	BEO District Head Quarter	9437194984		Member
12	Sri Bijaya Chopdar	Member, NGO (Having Exp. In Disaster Management)	8847894175		Member
13	Sri Sashi Bhusan Purohit	Member, NGO (Having Exp. In disaster management)	9437210777		Member
14	Sri Dhruba Charan Behera	District Project Coordinator, SS	9437150042		Member
15	Sri Dhruba Charan Behera	District Education Officer	9437150042		Nodal Officer and Member Convincing

DETAILS OF SCHOOL SAFETY IN THE DISTRICT

Sl. No.	Activity	Total School
1	Schools having School safety Advisory Committee (Number)	2239
2	Schools having School Disaster Management Plan (Number)	2275
3	Schools having conducted Safety Audits (Structural) (Number)	312
4	Safety Audits (Non-Structural) (Number)	2239
5	Schools having conducted Annual Mock Drills (Number)	123
6	Schools having Fire Extinguisher (Number)	2239
7	Schools Adhering to safety norms in storing inflammable & Toxic Material (Number)	2239
8	Schools confirming safety standards as per local building bye-laws (Latest) (Number)	2239
9	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)	149
10	Schools where students & teachers undergo regular training on School safety & Disaster Preparedness (Number)	2239
11	Schools where disaster management is being taught as part of the curriculum (Number)	-

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

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

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.	25	15 th May 2023	--
2	Preparation of School Disaster Management plan	50	1 st June 2023	--

Details of Child Care Institutions in Balangir District.

Sl No	Block/ULB	Name and Address of the Organization	Boys	Girls	Total No of Children	Name and Contact no. of the Shift-In-Charge	Fire safety Equipment (Fire Extinguisher, Alarm)	Staff Training on Fire Safety Equipment	Near by open space for evacuation	Alternative Shelter Identified
1	Deogaon	Gram Mangal Pathagar, Salepali At- Salepali Po- Jarasingha, Ps – Tusura Dist- Balangir	12	33	45	Suresh Mahakur Mob. No.9337276152	Yes	Yes	Yes	Shifting to other safe CCIs
2	Balangir	Parvati Giri Balaniketan, Patharchepa At- Patharchepa Po-Sadeipali, Ps-Sadar P.S. Dist- Balangir	10	46	56	Sanskriti Pattnaik Mob – 9437760477	Yes	Yes	Yes	Shifting to other safe CCIs

3	Saint ala	Gurukul SaptarsiSeba sharm,Deoga on,Dhumabh ata At- Deogaon ,PO- Dhumabhata Ps-Saintala ,Dist-Balangir	36	0	36	Sahadeb Shastri Mob – 99385947 39	Yes	Yes	Yes	Shifting to other safe CCIs
4	Bala ngir	Adruta Children Home, Pathrchepa, Balangir	20	0	0	Supriti Pattnaik, Mob- 82492583 78	Yes	Yes	Yes	Shifting to other safe CCIs
5	Kant aban ji	Utkal Balashram, Kantabanji	32	0	32	DSWO, Balangir	Yes	Yes	Yes	Shifting to other safe CCIs
6	Bala ngir	SAA, Gram Mangal Pathagar, Palaceline,Bal angir	6	6	12	Bhubanes war Samal Secretary - 88955584 48	Yes	Yes	Yes	Shifting to other safe CCIs

Information on Special School Under Social Security Section

SI No	Name of the Special School	Address	Block/ ULB	Total Strength of students
1	Red Cross School, Saintala	Saintala	Saintala	219
2	Service centre for disability, Titilagarh	Titilagarh	Titilagarh Municipality	73
3	Jagat Bandhu Biswa Bharati Sikhya Niketan	Salepali	Deogaon	135
4	Dr H K Mahatab, School for MR	Shastrinagar, Balangir	Balangir Municipality	71

GOVERNMENT LEGAL AID PROVISION TO THE DISASTER VICTIMS:

1. Background

Sub clause (e) of Section 12 Legal Services Authorities Act, 1987 makes the victims of disasters who are under circumstances of undeserved want as a result of such disaster eligible for free legal services to file or defend a case. But in a disaster of catastrophic nature whether it is natural or manmade, the victims are often taken unawares and are subjected to face the grim situation of loss of life, becoming homeless, destruction of property or damage to or degradation of environment and subject to human sufferings and damage beyond the coping capacity of the community of the affected area.

Even though it is the duty of the Government and the Administration of the locality to come to the help of the victims of disasters, Legal Services Authorities by virtue of sub-clause (e) of Section 12 can play an effective role by coordinating the activities of the State Administration in the disaster management by way of strategic interventions in an integrated and sustainable manner, reducing the gravity of the crisis and to build a platform for early recovery and development. The Legal Services Authorities shall endeavour to help the victims and the administration for reducing risk and assisting them to adopt disaster mitigation policies and strategies, reducing the vulnerabilities of the geographical and social situation and strengthening their capacities for managing human made and natural disasters at all levels.

2. Name of the Scheme.

This Scheme shall be called the Scheme for Legal Services to the victims of disasters through Legal Services Authorities.

3. Objective

The objective of the scheme is to provide legal services to the victims of disaster - both manmade and natural - who are under circumstances of undeserved want being victims of mass disaster, ethnic violence, caste atrocities, flood, drought, earthquake or industrial disasters.

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 organisations and also for providing legal aid to the victims.

4. Strategic Intervention by the State Legal Services Authorities.

The strategy for intervention by the Legal Services Authorities for helping the victims of disasters shall be on the following lines:

1. Ensuring immediate help by Governmental and Non-Governmental Agencies to the victims.
2. Coordinating the activities of different departments of the Government and the NGOs for bringing immediate relief.
3. Supervising the distribution of relief materials.
4. Supervising the construction of temporary shelter or transporting the victims to a safer place.
5. Supervising the reunion of families.
6. Supervising the health care and sanitation of the victims and preventing the spread of epidemics.
7. Supervising the needs of women and children.
8. Ensuring the availability of food, medicine and drinking water.
9. Supervising the reconstruction of damaged dwelling houses.
10. Supervising the restoration of cattle and chattel.
11. Legal Awareness Programmes in the relief camps on the legal rights of the victims.
12. Organising Legal Aid Clinics in the affected areas for assisting in reconstruction of valuable documents.
13. Assisting the victims to get the benefits of the promises and assurances announced by the Government and Ministers.
14. Assisting in the rehabilitation, care and future education of orphaned children.
15. Taking steps for appropriate debt relief measures for the victims.
16. Assisting in the rehabilitation of the old and disabled who lost their supporting families.
17. Assisting in the problems relating to Insurance Policies.
18. Arranging Bank Loans for restarting the lost business and avocations.
19. Arranging for phyciatrist's help / counselling to the victims who are subjected to physiological shock and depression on account of the disaster.

5. Machinery for Legal Services.

The State Legal Services Authorities shall establish a Core group in all districts under the control of the District Legal Services Authorities to spring into action in the event of a disaster, whether manmade or natural.

The Core group shall consist of a senior judicial officer, young lawyers including lady lawyers selected in consultation with the local bar association, Medical Doctors nominated by the local branch of the Indian Medical Association and the NGOs by accredited by the State Legal Services Authority. The Secretary of the District Legal Services Authority shall maintain a Register containing the Telephone numbers and the cell numbers of the members of the Core group.

STRATEGY FOR LEGAL AID TO THE VICTIMS

6. Ensuring immediate help by Governmental and Non-Governmental agencies to the victims.

The nodal agency for responding to a disaster shall be the State and District Disaster Management Authorities set up under the Disaster Management Act, 2006. The State Legal Services Authority should immediately alert the District Legal Services Authority concerned who in turn shall get in touch with the Disaster Management Authority of the State and District and gather the details of the steps taken by the latter.

1. The Core group set up the District Legal Services Authority shall immediately proceed to the area where the disaster has occurred and get involved in the work of relief.
2. The District Legal Services Authority and the Core team shall coordinate the activities of the relief operations by involving themselves and without causing any hindrance to the smooth flow of the relief operations.

7. Coordinating different departments of the government and the NGOs for brining immediate relief.

The State Legal Services Authority at the apex level shall get in touch with the State Disaster Management Authority / Department to ensure that all the departments of the State Government including health, finance, social welfare and police are involved in the relief operations. The State Legal Services Authorities shall coordinate the implementation of the Plan of Action, if any, prepared by the Disaster Management Authorities.

- (a) The State and District Legal Services Authorities shall obtain a copy of the disaster management plan, if any, prepared by the State Disaster Management Authority / District Disaster Management Authority.
- (b) The State Legal Services Authority / District Legal Services Authority shall as far as practicable follow the aforesaid plan and, if necessary, make suggestions to the state administration or Disaster Management Authorities for improving the quality of relief operations.

8. Supervising the distribution of relief materials.

In the event of a disaster, the first and foremost step to be taken is to ensure that the victims are provided with adequate support to tide over their undeserved wants. This includes provision of food, safe drinking water and transferring the victims to safe shelters. The District Legal Services Authority in coordination with the Disaster Management Authority and State Government Departments, shall supervise effective and timely supply of relief materials to the victims of the disaster.

9. Supervising the construction of temporary shelters or transporting victims to safer place.

District Legal Services Authority and the Core team shall supervise construction of temporary shelters and transportation of victims to such shelters to other safer places. Any lapses can be reported to the government officer incharge to ensure that the lapses are remedied immediately.

10. Supervising the reunion of families.

A disaster may result in sudden disruption of the cohesive unit of families. Members of the family are likely to get separated on account of the disaster or by reason of the rescue operations or on account of medial emergencies. Separation can occur due to loss of life also.

The Core team shall visualise such probable traumatic situations in the families affected by the disaster and shall take necessary steps for consoling the victims and shall take earnest search for the missing members of the families.

11. Supervising the health care of the victims and preventing the spread of epidemics.

The District Legal Services Authority shall take prompt steps for coordinating with the District Medical Officer for ensuring that the victims of the disaster are given proper medical care. The injured victims shall be given prompt treatment.

- (a) When a large number of affected persons are congregated in relief camps, adequate sanitation has to be ensured. Steps shall be taken to ensure that the public health authorities are performing cleaning and sanitation of the camps on a regular basis.
- (b) The District Legal Services Authority shall ensure that adequate preventive measures are taken by the health authorities against outbreak of contagious and infectious diseases and water-borne diseases can occur in the relief camps.
- (c) Right to health being a concomitant to the Right to Life guaranteed under Article 21 of the Constitution of India, the disaster victims are entitled to adequate health facilities and the Legal Services Authorities are duty-bound to ensure the same through appropriate measures.

12. Supervising the needs of women and children.

Women and children are beneficiaries of free legal aid under Section 12 of Legal Services Authorities Act. They are the most vulnerable group amongst the victims of any disaster. Safety of women and children in the camps and their valuables like ornaments and personal belongings are to be protected. The District Legal Services Authority shall ensure that the Police takes necessary steps for preventing theft and anti-social activities. Legal Services Authorities shall coordinate with the Police Officers to ensure the safety of women and children.

13. Ensuring the availability of food, drinking-water and medicine.

The need for food, safe drinking water and medicine are basic human needs and hence are attributes of the Right to life under Article 21 of the Constitution of India. Legal Services Authorities can therefore rightfully intervene and coordinate with the State Government, District Administration and Health Authorities to ensure the availability of food, safe drinking-water and medicine to the victims living in the shelters.

14. Supervising the reconstruction of damaged dwelling houses.

Housing is one of the important problems faced by the victims of disasters. Partial or total damage may occur to houses in disasters like earthquake, flood and communal riots. Assurances given by the Ministers and Government official ex-gratia payment and funds for reconstruction of damaged houses of the victims may go unfulfilled or forgotten due to passage of time. Efforts shall be taken by the Legal Services Authorities to ensure that such promises are fulfilled and the promised funds or other relief measures are disbursed to the victims without delay.

15. Supervising the restoration of cattle and chattel.

Loss of cattle, chattel and household articles are concomitant with all mass disasters. Thieves, looters and anti-socials have a field day during riots and ethnic violence and also during the havocs like flood, drought, pestilence and earth-quake. The District Legal Services Authority in coordination with the Police or Armed Forces shall ensure that the valuables belonging to the victims are not looted or stolen houses. Similarly, steps shall be taken to protect livestocks and chattel also. The Legal Services Authorities shall coordinate with the animal-husbandry department of the government to save the livestock.

16. Legal Awareness Programmes in the relief camps on the legal rights of the victims.

Once the victims are relieved from the immediate shock and impact of the disaster, the Legal Services Authority may chose a convenient time and place near the reliefcamps for imparting legal awareness to the victims. Women lawyers may be entrusted with the job of conducting informal legal awareness programme, mainly related to the rights of the disasters victims to avail of the relief measures from the authorities. The legal remedies available and the mode in which the benefits of the offers and schemes announced by the government are to be availed of also may be included as topics. Legal Awareness Programmes shall not be conducted in a ceremonial manner. Inaugural function and other formalities shall be totally avoided. The ambience of disaster and the mood of grief stricken victims should be fully taken in to account by the resource persons and the steps for legal awareness shall be taken in such a manner as to go along with the measures for consolation and redressal of the grievances of the victims. Visits by women lawyers to the camps and homes of the victim will be desirable.

17. Organising Legal Aid Clinics in the affected areas for assisting in the reconstruction of valuable documents.

It is likely that the victims of disaster have lost their valuable documents like titled deeds, ration cards, identity cards, school and college certificates, certificate of date and birth, passport, driving licence etc. The District Legal Services Authority shall organise legal aid clinics in the affected areas and assist the victims to get duplicate certificate and documents by taking up the matter with the authorities' concerned. Arrangements for issuing Death Certificates of the deceased victims also shall be made.

18. Taking care of the rehabilitation and the future care and education of the orphaned children.

Orphaned children are the living monuments of disasters. Losses of childhood, paternal affection are likely to haunt them for the rest of their lives. At times, the orphaned children may get affected with psychiatric problems also.

The Legal Services Authority shall seek the help of voluntary organisations large business houses and Corporates for the educational needs and accommodation of such children till they attain the age of maturity. In appropriate cases, the Legal Services Authority may assist such children to be taken care of under provisions of the Juvenile Justice (care and protection) Act.

19. Taking steps for appropriate debt relief measures for the victims.

Rehabilitation of disaster victims will be a gigantic challenge for any administration. The adequate funds should be made available to the victims who lost everything in their life for rebuilding their avocation, buying agricultural implements and other implements required for their avocations in which they were engaged prior to the disaster. Victims belonging to fisherman community may require huge amounts for buying nets, boats and outboard engines. Such measures of rehabilitation may require the assistance of government departments concerned. The State Legal Services Authority shall coordinate with Public Sector Banks, Social Welfare Department and other departments concerned for helping the victims to re-start their avocations. In appropriate cases, provisions in the laws relating to debt relief shall be invoked.

20. Rehabilitation of the old and disabled who lost their supporting families.

Persons with disabilities as defined in Clause (e) of Section 2 of Disabilities (Equal Opportunity) Protection of Rights and Full Participation Act, 1995 are entitled to free legal aid under Section 12 of the Legal Services Authorities Act. Senior citizens are entitled to certain benefits under the provisions of Maintenance and Welfare of Parents and Senior Citizen Act. The senior citizens and disabled persons who lost their support on account of disasters shall be identified and appropriate legal aid shall be given to them.

21. Problems relating to Insurance Policies.

The Legal Services Authorities shall take up the insurance claims of the disaster victims with the Insurance Companies for settlement of such claims. Negotiations may be undertaken with the Insurance Company officials for a settlement favourable to the victims. In appropriate cases the service of Insurance Ombudsman also may be availed of.

22. Arranging Bank Loans for restarting the lost business and avocations.

The victims who suffered substantial loss of their business and implements used in their avocations shall be helped by adopting proper restorative measures. For this purpose, efforts shall be made to make available financial assistance of nationalised banks and other public sector financial institutions. The Legal Services Authorities shall persuade the officials of such financial institutions to rise to the occasion for helping the victims.

23. Arranging for the services psychologists / psychiatrists help for counselling the victims suffering from psychological shock and depression on account of the disaster.

Mental shock and the related psychiatric manifestations are usually seen associated with the traumatic effects of disasters on the victims and their family members. Sudden loss of human life and the horrifying experiences of the trauma of the disasters can result in mental shock and psychiatric problems not only to the victims but also to their family members. The District Legal Services Authority shall in coordination with the District Medical Officer make necessary arrangements for the services of psychiatrists and psychologists.

The District Authority shall ensure the presence of the members of the Core group at the relief camps everyday till the victims are rehabilitated.

24. District Legal Services Authority shall collect reports from the Core Group.

District Legal Services Authority shall collect daily reports from the Core group working at the location of the disaster. Copies of such reports shall be sent to the State Legal Services Authority. The State Legal Services Authority shall consolidate the reports and send a comprehensive report to the National Legal Services Authority and copies thereof shall also be sent to the District Management Authorities of the State and District. Copies of the report shall be placed before the Patron-in-Chief of the State Authorities and also in the meeting of the State Authority. If any difficulty arises in giving effect to this Scheme, the State Legal Services Authority and District Legal Services Authority or the Core group may seek guidance from the Executive Chairman of the State Authority

CHAPTER – 9 INCLUSIVE DISASTER RISK REDUCTION

9.1 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.

9.2 Legal framework to support the inclusion of persons with disabilities

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

The Millennium Development Goals have the potential to make life better for billions of people in the world’s poorest countries. However, disability is currently not included in indicators and targets to help evaluate and monitor the achievement of the MDGs.

Furthermore, persons with disabilities are often excluded from international and national poverty reduction strategies. Environmental dangers and natural disasters can lead to the onset of many types of disabilities, and inaccessible environments prevent persons with disabilities from taking part in economic and social activities. Human and environmental recovery is vital for the achievement of MDG Goal 7, “Ensure Environmental Sustainability”.

The MDGs cannot be achieved without the inclusion of all persons in society, including persons with disabilities. The Rights of persons with Disabilities act (RPWDA) 2016 of India and UNCPDR 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

9.3 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.

9.4 Data Collection Data is essential to understanding the risks that people face during disasters and climate change situations

It is important to give effect to policies and establish norms. The Census in 2011 identifies 2.68 Crore persons with disabilities constituting 2.21% of the country's population.

9.5 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).

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

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

Persons Requiring Special Care

Sl. No.	Block	No. of Persons covered under Old Age Pension Scheme		No. of Persons covered under Widow Pension	No. of Persons covered under Disability Pension		Nos. of Orphans	
		M	F		M	F	Boys	Girls
1	Bolangir	3775	4610	2453	1015	613	10	12
2	Puintala	5157	4168	1911	1038	558	20	15
3	Deogaon	2691	3813	2044	865	531	9	9
4	Gudvela	2730	1947	1270	647	309	17	9
5	Loisinga	6296	3792	1937	910	381	12	26
6	Agalpur	4802	3704	2566	995	670	6	9
7	Titilagarh	5478	5073	3721	1023	542	11	17
8	Saintala	5514	4933	2152	808	412	12	8
9	Muribahal	7400	3552	2612	1241	438	16	23
10	Bangomunda	4863	4682	3079	842	473	41	30
11	Turekela	5615	3472	3363	704	228	32	30
12	Patnagarh	6311	5688	3840	898	504	9	11
13	Kharakhol	5231	4221	2865	536	305	21	17
14	Belpada	6608	2790	2838	740	241	12	16
15	Bolangir M	2564	2264	1825	615	317	0	0
16	Titilgarh M	798	865	836	244	133	0	0
17	Kantabanji N	612	800	425	147	94	0	0
18	Patnagarh N	668	756	459	13	90	0	0
19	Tusra N	533	428	145	97	45	0	0
TOTAL		78646	61558	40341	13495	6884	228	223

Source: DSSO, Balangir

ICDS Anganwadi Centres							
SI No	Name of the Block	Total Number of Anganwadi Centres	No of AWC Having own Pucca Building	No of Children Enrolled	No of Severely Malnourished Children Reffered during the Year	Number of Pregnant Women Enrolled	Number of Lactating Mother Enrolled
1	Agalpur	182	165	6529	24	493	646
2	Bangomunda	198	150	14489	21	1274	1145
3	Belpada	192	118	14244	15	1029	1083
4	Bolangir	226	144	15048	156	1410	1383
5	Deogaon	205	149	7221	155	676	640
6	Gudvela	120	90	5191	169	410	377
7	Khaprakhol	183	130	10519	17	766	979
8	Loisingha	195	171	6975	0	533	726
9	Muribahal	213	179	11388	9	837	1080
10	Patnagarh	278	213	14676	501	1207	1461
11	Puintala	201	126	8295	266	586	779
12	Saintala	179	138	8987	81	806	921
13	Titilagarh	230	148	14067	688	1131	1241
14	Turekela	173	121	13014	68	1041	1052
	TOTAL	2775	2042	150643	2170	12199	13513

Source: DSWO, Balangir

Chapter-10

Forest Fire Management

INTRODUCTION

The present Bolangir Forest Division came into existence on 01.01.2010 consequent upon re-organization of Bolangir East and West Forest Division as per the Government of Odisha Notification No. IF (A)-42/2008-17803/F&E, Dtd. 27.10.2009 comprising the entire revenue District of Bolangir. Bolangir District situated 420-41" to 830-42" East and 200-9" to 210-05" North. This District is one of the most drought prone area not only in the state but also in the country. Bolangir receives an average annual rain fall of 118.8 cm which is around 30 % less than the average annual rain fall of the state. Irrigation facilities of the district are inadequate in the absence of any major irrigation project. This district is having pre-dominantly rural population and majority of them are below poverty line. The un-productivity of the area, lack of industrialization and harse climate makes the life of the rural population miserable, which force them to migrate to nearby state to earn their livelihood.

BOUNDARIES

This Division is bounded on the north by Bargarh Forest Division, on the east by River Mahanadi and Tel which separates it from Rairakhol, Boudh and Phulbani Forest Divisions. On the south it is bordered by Bolangir Forest Division and on the West by Khariar Forest Division.

The Geographical area of Balangir Civil District is 6575.0 sq. km. It comprises 3 Civil sub-divisions namely 1) Balangir 2) Patnagarh and 3) Titilagarh. The forest area as per DLC is 1611.28 sq. km. which is about 24.5 per cent of the total area of the District.

The major part of the tract covered by this plan is generally flat but it is cut off by numerous nallah, which are situated on gentle slopes and small valleys. The terrain is often broken into well defined isolated hills scattered throughout the division. The western part of the division is an undulating rugged hilly tract consisting of hill ranges running in various directions and a few isolated hills, which are separated by undulating plains, valleys and small settlements. Starting from the lofty irregular hill range of Gandhamardan which forms the north-western border with Sambalpur district, a line of hills stretch along the western boundary upto Mahakhand village in the south-western part of the tract. Towards the borders on the south, prominent hill ranges or isolated peaks become rare and the plains take on a more upland character. The next important hilly belt consisting of a series of isolated hills, which lie in the central part of the tract, not very far from Balangir town, and extends to the north-west to Mahadasani hills located along the northern border and on south-east to Sikerpat hill range touching the Kalahandi and Phulbani borders. These isolated hills are separated by cultivated land and settlements.

A distinct feature throughout all the higher hills is the flat and level nature on their tops, which are sometimes extensive as in Gandhamardan hills. Another general feature of the configuration is the gentle slopes of lower portions between the hills which develop suddenly into steep or even precipitous slope above.

The general elevation of area ranges from about 600 ft to a height of about 3200 ft (960 m), latter being reached in Gandhamardan hills. The highest peak is Gandhamardan (1004.6 m). The other peaks deserving mention are Rutel (813.8 m), Chandli (728.2 m), Matkhai (681 m), Thuta (626.6 m), Bonda (561 m) and Kharsel (513 m).

The district can be divided into 2 broad physiographic units (i) undulating plains (Pediments) dotted with residual hills and (ii) scattered hills and areas with high relief. The undulating plains occupy the central and eastern parts of the district the average elevation being 200 m to 300 m above mean sea level with a general slope towards east. The areas with high relief and high hills are situated in north western, western and south eastern parts of the district. The hill ranges belong to Eastern Ghats having a general trend of northeast – southwest. The highest peak is Gandhamardan situated 1004.6 m above mean sea level.

THE RICH FLORISTIC COMPOSITION OF THE DISTRICT WHICH NEEDS PROTECTION FROM FIRE HAZARD

The forests of Balangir Division are situated within dry deciduous zone. Sal occurs in almost pure crop in a few blocks and in a compact area in the western part of Balangir Division. Along Khariar border natural teak is found in pure form or as a mixture. The crop in general is a mixed one with preponderance of miscellaneous species. Bija the other economically important species is seen scattered though out the forest and constitutes a low proportion of the crop. The other principal species in the crop have rare prominence. Sal also occurs in parts of mixed forests but forms a small percentage of the stand. The miscellaneous inferior species constitute the bulk of the crop.

The prominent feature of forest of this Division is the openness of the crop, high proportion of unsound stems, poor growth of trees and less economically important species.

The tract has been experiencing prolonged dry climate because of extreme temperature and uneven distribution of rainfall. The productive profile of soil is shallow and has low moisture retaining capacity. All these facts together with high biotic interference are the reasons for large scale deterioration in the condition of these forests, as seen today.

Bamboo (*Dendrocalamus strictus*) occurs in the under storey in varying density. In some of blocks such as Gandhamardan, Chandli, Sikerpat, Rajoo, Bakbahal, Lami it occurs extensively almost in pure patches. But in some other blocks like Tikhari, Kiribanji, Bender-I, Bender-II, Barnei, Chhatardandi, Budharaja (Patnagarh Range), Dandel and Patpani, it occurs in scattered patches with quality of bamboo varying from patch to patch. In other areas scattered bamboo clumps occur. In these areas, the culms have very poor growth.

The ground flora consists of shrubs like Dhatuki (*Woodfordia fruticosa*), Antia (*Helecteres isora*), Gilri (*Indigofera pulehella*), Kharpat or Harsinghor (*Nyctanthes arbortristis*), Gilo (*Enteda scandens*), Bhuinkurien (*Ixora parviflora*), Kurehin (*Holarrhena*

antidysenterica), Ranikathi (*Flemengia chapper*), Ban-Kharjuri (*Phonix acualis*) and *Grewia* species etc. The ground flora is normally thin except during rainy season.

Climbers are not very common. Few climbers are found in these forests are confined mostly to moist localities. The important ones are Siali (*Bauhinia vahli*), Lata palas (*Butea superba*), Muturi (*Smilax macrophylla*), Budel (*Spatholobus roxburghi*), and Gaj (*Miuetia auriculata*). Grasses are very thin and a few species like Sabai (*Eulaliopsis binata*) confining mostly to eroded sites, thatch grass (*Andropogon contortus*), Sinkula (*Arstida setacea*) and Badhuni (*Thysanolaena agrostis*) are commonly seen.

The natural regeneration of principal species, particularly Sal is generally inadequate. Though Teak occurs in almost pure form in Hilpi, Munda, Budharaja and Karanjhol and Chakagujia forest blocks which are well within its natural zone, the regenerations is deficient.

Besides the natural forests, species introduced by artificial regeneration in different blocks of this division during past years also form part of the existing crop. Among all the introduced species, Teak (*Tectona grandis*) has been raised successfully in most of the blocks either in compact patches or in small-scattered patches alternating with mixed forest.

Forest Type & Distribution

As per classification of forest types of India by Champion and Seth, the forest of this division are classified into two major subgroups as Northern-tropical dry deciduous forest (5B) and Southern-tropical dry deciduous (5A) of major group (5) "Tropical Dry Deciduous Forests". Basing on the holistic composition the above major sub groups can be further divided into the following type of forest as seen in the division.

1. Northern tropical dry deciduous forest (5B):
Dry Sal bearing forest (C1): Subtype:- Dry Peninsular Sal Forest (C1e)
Northern dry mixed deciduous forest (C2)
2. Southern tropical dry deciduous forest (5A):
Dry teak bearing forest (C1): Sub type: - Dry Teak Forest (C1b)

Besides the above forest types and sub-types, the following edaphic subtypes are also met with in Balangir Forest Division.

- (i) *Boswellia* forest (5B / E2)
- (ii) Dry Bamboo brake (5B / E9)

Dry Peninsular Sal Forest

This type of forest are found mostly in Gandhamardan forest block and portion of Sikerpat, Chandli, Tikhari, Barnei, Bender-I, Bender-II, Kiribanji, Chhatardandi Reserve Forest block. Sal (*Shorea robusta*) is the most important species in this type of forest. Common associates of Sal occurring in this type are Bija (*Pterocarpus mersupium*), Asan (*Terminalia alata*), Dhaura (*Anogeissus latifolia*), Haldu (*Adina cordifolia*) and Mundi (*Mitragyna*

parviflora). In the patches of mixed forest, Salai (*Boswellia serrata*), Moi (*Lannea coromondalica*), Kendu (*Diospyros melanoxylon*), Senha (*Lagerstroemia parviflora*), Harida (*Terminalia chebula*) and Semul (*Bombax ceiba*) also occur in varying proportion with Sal in the top storey.

In the middle storey, the common associates of Sal are Karda (*Cleistanthus collinus*), Ainla (*Embllica officinalis*), Sunari (*Cassia fistula*), Char (*Buchanania lanzan*), Bahada (*Terminalia belerica*) and Bandhan (*Ougenia ozonensis*).

Common shrubs available are Dhatuki (*Woodfolia fruticosa*), Girdi (*Indigofera pulchelia*), Ranikathi (*Flemengeia chapper*) and Bankhajuri (*Phoenix acaulis*).

Dendrocalamus strictus is the only species of Bamboo occurring commonly in under storey. The important grasses found in this type of forest are Sabai (*Eulaliopsis binata*) and Sukhlaghass (*Heteropogon contortus*)

Northern Dry Mixed Deciduous Forests

This is the forest type most widely represented in the Division. It constitutes nearly 80% of the crop and occurs in all the forest blocks except Hilpi, Munda, Budharaja, Karanjkhoh blocks and parts of Chhatardandi and Chakagujia blocks. It is found over all types of rocks and in all aspects of hills. Depending on site condition, which varies with localities, there is variation in the quality and composition of the crop but it is usually of poor type.

Among the species of importance are Asan, Dhaura, Bija, Sal, Mundi, Halland, Sissoo, Semul, Gambhar, Salai and Moi. Of which none other than Asan, Dhaura, Salai, and Moi is well represented in the crop. Mundi is not very prominent and the other trees such as Semul, Halland, Sissoo and Gambhar are few and occasionally met with.

The species of less or no economic importance, of which the crop in this type of forest form the bulk, occur in varying composition. However fairly extensive patches of Karda mixed with Dhaura and Kendu are found in this type. Kendu trees are quite common. Genduli trees occur on the hill tops. The pure patches of Khair, Bheru and Rohini associates are common occurrence on calcareous soil of eroded lands. The canopy in these patches is very open. Salai and Moi in varying proportion occur in almost all the blocks.

Bamboo (*Dendrocalamus strictus*) occurs either in pure patches or scattered in under storey of this type of forests. On hill slopes, Bamboo occurs in extensive patches and sometimes, in pure form but in plain forests, it is more of a scattered nature. Though small patches of pure crop of Bamboo do occur in regenerated coppice coupes where Bamboo tends to suppress the coppice shoots in places.

Dry Teak Forest

This type is confined to Hilpi, Munda, Budharaja, Karanjkhola blocks along Khariar border and is also found in parts of Chhatardandi and Chakagujia blocks. Teak is the most conspicuous tree in this type and it occurs either in pure patches or in mixture with miscellaneous species found in other forest types but its typical associates are Dhaura and Asan, and it is also found mixed with Salai and Moi in patches. In Chhatardandi and Chakagujia forest blocks it is more of scattered nature.

Teak occurring in this type is generally of poor quality. It occurs mostly on clayey soils in this forest type. In small patches of Munda and Chhatardandi blocks, however, it occurs on Sandy loam or loamy soil where the Teak trees are well grown, though not uniformly

Boswellia Forests

This is an edaphic subtype occurring in almost all the forests of the Division but extent is variable. It occurs on a variety of rocks and in all aspects of the hills. It is noticeably found on the top slopes of hills but small patches of almost pure consociations of well grown mature trees of pole crops are also met with in plain forest of Tikhari, Barnei, Bender-I, Bender-II, Kiribanji blocks. Salai (*Boswellia serrata*) is characteristically the predominant species in this type where it constitutes more than 60 % of the crop.

The common associates Salai in this forest type are Moi (*Lennea coromandelica*), Dhoben (*Dalbergia paniculata*), Genduli (*Streulia urens*), Kendu (*Diospyros malanoxylon*), Ganiari (*Cochlospermum gossypium*). The common shrubs are *Indigofera malanoxylon*, *Nyctanthes arbor-tristis*. The under growth, however, is scanty and grasses are thin. The Salai trees are leafless from February to March. Regeneration of Salai, both of coppice and seedling origin, is very good.

It is apparently a stable form of edaphic climax on special sites, extended by maltreatment, as Salai is usually seen standing when other trees are felled or otherwise affected by other forms of interferences and is fire resistant.

Dry Bamboo brakes

This is an edaphic subtype found in Gandhamardan, Sikerpat, Chandli, Bender-I, Bender-II, Barnei, Kiribanji, Tikhari, Dandel, Rajoo, Bakbahal, Chhatardandi, Lami, Ganjaudar, Kusa, Bhimkhola, Sulia and few other smaller blocks either in pure form over extensive patches or scattered in irregular patches.

In many other forest blocks, there is evidence of Bamboo clumps in fairly extensive patches but they are in a highly degraded state. In these blocks, due to incessant over exploitation, clumps are degenerated and do not produce quality culms with poor rate of recruitment.

Only one species, *Dendrocalamus strictus* occurs in this sub-type. It is found prominently both on hill slopes and valleys, particularly in those patches where trees were over exploited in past, and rarely on the higher slopes and hill tops. In plain forest worked by clear felling system, Bamboo brakes occur on flat ground and in places, over fairly extensive areas. Pure formation of Bamboo is accompanied with very thin over wood. The trees commonly seen with Bamboo are Dhaura (*Anogeissus latifolia*), Karda (*Cleistanthus collinus*), Sidha (*Lagerstoemia parviflora*), Salai (*Boswellia serrata*), Moi (*Lannea coromandelica*), Ganiari (*Cochlospermum gossipyum*) and occasionally, Bija (*Pterocarpus marsupium*) and Asan (*Terminalia alata*).

In this type of forests, there is wide variation in quality and rate of recruitment of Bamboo and is mostly dependent on the extent of biotic interference, associated with soil conditions. In well managed Bamboo forests of Gandhamardan, Sikerpat, Chandli and Budharaja blocks, the clumps produce excellent quality Bamboo with fairly high rate of recruitment but in most of the plain forest there is substantial deterioration in the quality due to over exploitation.

The WPO should collect data for the year ending 2015. Further different pro forma have also been prescribed in National Working Plan Code, 2014, which has been dealt with separately. The Working Plan Officer should take care of collecting the data and their compilations.

ADMINISTRATIVE SET UP FOR FOREST MANAGEMENT

In order to disseminate the forest administration and management in the District, the Bolangir Forest Division has been demarcated with 11 Ranges, 45 Sections and 163 Beats as detailed below.

S.No.	RANGE	SECTION	BEAT	Area in Ha
1	BANGOMUNDA	PANDREN	MURIBAHAL P	1536.700
2			PANDREN	2096.300
3			BADBANKI	2198.900
4		BANGOMUNDA	DANDRA	3327.600
5			CHAULIA	2921.700
6			CHATRANG	3020.300
7			BANGOMUNDA	9963.600
8		MAHAKHAND	MAHAKHAND A	1284.100
9			MAHAKHAND B	944.600
10			BHARUAKANI	746.600
11		JUBAMAL	MUDKANI	978.800
12			GADIAJORE	415.000
13			JUBAMAL	620.700
14		SINDHEKELA	SINDHEKELA	12859.900
15			JAMKHUNTA	3079.900
16			GANDHRLA	3067.600

17			GANJIAPADA	9865.300
18	BOLANGIR	BOLANGIR(1)	BOLANGIR I	19796.300
19			GANDHREL	2003.600
20			BOLANGIR II	9807.700
21			DHUMAMARA	2804.900
22		HARDATAL	CHANDANBHATI	3302.200
23			BRAHMANIDUNGRI	2484.600
24			HARDATAL	3513.300
25			KARLAPITA	4212.300
26		BOLANGIR(2)	KHUJENPALI	6084.400
27			KHARLIKANI	2228.000
28			KALIJHARAN	2898.700
29			CHIKALBAHAL	2557.200
30		ATGAON	ATGAON	4832.900
31			MAKARCHUAN	1654.500
32			JAMJHARAN	4555.400
33			AINLAPALI	4375.500
34			PHATAMUNDA	2956.400
35	DEOGAON	DEOGAON	DEOGAON	8333.500
36			TUSURA	10471.500
37			SINKHAMAN	1667.500
38		GUDVELA	JAMUT	5161.100
39			DHANPUR	2237.700
40			TAPSUGUDA	2546.900
41			GUDVELA	6292.600
42		KUDASINGHA	KUDASINGHA	2598.800
43			SIKACHHIDA	1754.700
44	HARISHANKAR	HARISHANKAR	BRAHMANI H	2966.600
45			TURLA	1756.900
46			NANDUPALA	2243.000
47			KANDRABHATA	3225.100
48		DHANDAMUNDA	THUTHIBHATA	725.400
49			BADUDEN	2956.000
50			DHANDAMUNDA	7509.200
51		RENGALI	SAPMUND	1909.000
52			BEHERAPANI	1017.600
53			GUNDRUPALI	2424.600
54			AMBAHALI	2127.600
55			BHARUAMUNDA	1388.600
56		KHAPARAKHOL	KHAPARAKHOL	3194.900
57			JHALBAHAL	3357.900
58			PHULAKIMUNDA	1229.800
59	KANTABANJI	DHOLMANDAL	KUSPALI	1578.300
60			DHOLMANDAL	1647.900
61			BADDAKLA	5304.400
62		LARKI	JHARNI	9016.600

63			LARKI	1029.500
64			RAMOD	2272.500
65		MAHULPATI	MAHULPATI	636.000
66			GANJAUDAR	518.700
67			BUDHIBAHAL	1481.500
68		TUREKELA	TUREKELA	1229.900
69			POKHANMUNDA A	2361.900
70			POKHANMUNDA B	1579.300
71			BARLA	837.200
72		KANTABANJI	KANTABANJI	8357.900
73			PATIMAL	3074.200
74			BARKANI	2437.500
75			KHUTLUMUNDA	2426.100
76	LATHOR	GAMBHARI	KARLAKUTNA	7512.700
77			JAMJURI	3694.400
78			SANDHIMUNDA	4150.300
79		LATHOR	JHALIALITI	6041.500
80			PIPALBAHAL	1173.300
81			KHARLI	2435.600
82			GAINDIMAL	2221.900
83			LATHOR	1303.400
84			MAHANILAHA	936.800
85		GHAGURLI	GHAGRULI	4623.200
86			TALBHATA	1102.800
87			RENGALI LA	2776.900
88		BENDER	BAGDOR	2645.600
89			BENDER	3637.200
90			DHAURAKHAMAN	1892.900
91	LOISINGHA	SALEBHATA	KASIAPALI	3706.100
92			SALEBHATA	4344.200
93			NEGIPALI	2859.600
94			SANKHUA	2222.700
95			NUNIAPALI	14739.500
96		LOISINGHA	BADTIKA	8477.200
97			BHALUPALI	5475.200
98			PANDRIDUNGRI	1676.300
99			DHAURADADAR	2482.100
100		SARGAD	UPARBAHAL	6626.900
101			BAGDIA	11117.100
102			RENGALI LO	3218.900
103			BANCHORPALI	1820.000
104	MURIBAHAL	GUDIGHAT	KURLUBAHAL	9572.500
105			RENGALI M	7806.400
106			GUDIGHAT	3288.600
107		MURIBAHAL	GHUSURAMUNDA	2794.100
108			BRAHMANI M	2395.900

109			MURIBAHAL M	9237.700
110			TENTELKHUNTI	5293.200
111		JAINTARA	JAINTARA	1521.000
112			KARLA	965.900
113			GOVINDPUR	1089.300
114		DANGABANJI	DANGABANJI	7464.600
115			CHIKNIBHALI	1799.500
116			DENGPADAR	4953.900
117		GULMI	GULMI	915.200
118			SATBAHANI	939.500
119			BARBANDH	1814.500
120	PATNAGARH	LARAMBHA	KHULLA	2212.800
121			THELKOCHHAPAR	10180.900
122			LARAMBHA	8835.500
123			DEBHUIIN	6899.800
124			DAMAKIPALI	2848.700
125		PADHEL SECTION	PADHEL	10697.700
126			DAMAI PALI	4935.300
127			LUHASINGHA	1970.200
128		PATNAGARH	PARUABHADI	12253.300
129			PATNAGARH	6500.100
130			KARLAMAL	6414.900
131			KENDUMUNDI	2178.100
132			KAPANI	8954.700
133			GOIL MARA	6374.800
134		TIKRAPARA	DHUMABHATA	6851.700
135			TIKRAPARA	5718.800
136		BANDHPADA	BANDHAPADA	12666.600
137			DESANDH	5379.400
138	SAINTALA	CHANCHADA	DABJURI	5365.100
139			JINKIDUNGRI	2686.800
140			KARAMTALA	2513.100
141			DUMERJOR	3676.100
142			JHIMANPALI	2411.100
143		KANDHKELGAON	RUNDIMAHAL	5715.400
144			LANDAPATHAR	4042.000
145			MURSINGH	4780.100
146		SAINTALA	BAGJORE	1243.300
147			SAINTALA	3179.000
148			DHUNKEDA	2319.700
149	SAINTALA		SULIAMAL	3526.800
150	TITLAGARH	BELGAON	BELGAON	11707.800
151			NARIKATA	1782.800
152			GOKHURUNG	3172.600
153		SIKER	BANJIHAL	1421.300
154			DUMERBAHAL	1149.200

155			DONGARPADA	2985.80
156			SHIKER	2975.60
157			BAD MAL	7169.90
158		BAD MAL	DHARABGARH	2476.90
159			GOIL VADI	820.50
160		TITLAGARH	TITLAGARH	10290.80
161			KUMUDIPADAR	2951.40
162			KUMBHIPADA	1890.40
163			REGDOL	2726.00
	Total			65750.30

Administrative Map of Bolangir Forest Division



CLASSIFICATION OF FOREST AREA FOR MANAGEMENT

Area of forests under different legal classes (RF, VF, & others)

Reserve Forest Blocks-

There are 109 nos. of Reserve Forest blocks in Balangir Forest Division. Out of these, 3 nos. of Reserve Forest blocks i.e. Chhatardandi RF, Dandel RF and Chandali RF are distributed in more than one Range.

P.R.F. Blocks

There are 4 nos. of P.R.F. blocks in Balangir Division. Out of these, 2 nos. of P.R.F. blocks are distributed in Lathore Range, and 1 (one) each in Saintala and Harishankar Range.

DLC report of the Division:-

The copy of the DLC report of Balangir Forest Division is furnished in Annexure D. The forest area of Balangir Division as per DLC report is furnished below –

Sl. No.	Type of Forest	Area in ha
1	Reserve Forest (109 nos.)	110567.61
2	Proposed Reserve Forest (4 nos.)	363.21
3	Un classed forest	14.00
4	Forest as per Revenue Record	43440.09
5	Area not recorded as forest but which are sizable compact area of Natural forest growth and plantation of forest species in Govt. land	6695.91
6	Area not recorded as forest but which are sizable compact area of Natural forest growth and plantation of forest species in private land	48.15
	Total	161128.97

Category of Forest	Nos. of forest blocks	Area under administration in ha
Reserve Forest	109	104854.327
Proposed Reserve Forest	04	418.22
Proposed P.F. (Comp. Affn.)	89	4663.7
V.F.s as per WP record	54	467.012
Total under Management Plan	256	110403.259

The gross area of 109 nos. of R.F. blocks as per Notification is 110972.76 ha. These includes 2776.6 ha forest area diverted under FC Act 1980 in the Division for non-forestry purpose. The gross area of 109 nos. of Reserve Forest block as per GIS computation of outgoing plan is 107630.927 ha. After deduction of 2776.60 ha of forest area diverted under

FC Act, 1980 for non-forestry purpose net area 104854.327 of R.F. blocks is coming under Management Plan.

In the Working Plan submitted for management , 89 nos. of sites wherein compensatory afforestation have been carried out against diversion of forest land (each of such site is to be declared as "Protected Forest") are proposed to be covered for future management of forest in future plan period.

The Range wise details of forest area i.e. R.F./P.R.F./ VF/ P.F. (CA) is furnished as under –

Name of Range	Sl. No.	Name of Forest Block	Notification No. & Date	Area in ha as per notification	GIS Area (in ha) taken in ensuing working plan
1	2	3	4	5	6
Balangir		R.F. Block			
	1	Barapudgia I&II	FS-6750/R dt.22.1.79	218.8	305.993
	2	Bhimdungri	.FS-17307/D dt.15.11.55	1772.56	1508.031
	3	Bonda	FS-17307/D dt.15.11.55	2009.3	2124.939
	4	Brahmani	FS-17307/D dt.15.11.55	83.77	70.878
	5	Budangagan I&II	FS-84646/R dt.18.12.78	101.33	108.499
	6	Kharsel	.FS-17307/D dt.15.11.55	1924.83	1847.204
	7	Matkhai	.FS-17307/D dt.15.11.55	2844.2	2791.108
	8	Chandli	.FS-17307/D dt.15.11.55	721.97	703.974
	9	Chitadunguri I&II	.FS-17307/D dt.15.11.55	65.56	61.679
	10	Kadalimunda	.FS-17307/D dt.15.11.55	202.36	210.452
	11	Kalijharan	FS-6628/R dt.29.01.76	109.15	0
		Total		10053.83	9732.757
Balangir		V.F.			
	1	Salepali			3
	2	Sareipali			5
	3	Sareipali			10
	4	Karlapita			4.34
		Total			22.34
Balangir		P.F. (CA)			
	1	Jhankarpali			69.96
	2	Hardatal			36.04
		Total			106
Deogaon		R.F. Block			
	1	Sunadiki	.FS-17307/D dt.15.11.55	539.86	521.34
	2	Banji	.FS-17307/D dt.15.11.55	656.82	625.589
	3	Tekabandha	.FS-17307/D dt.15.11.55	515.58	489.951
	4	Sikderpat	.FS-17307/D dt.15.11.55	3880.21	3923.456

	5	Badbewar	.FS-17307/D dt.15.11.55	202.34	205.552
	6	Dhamdimundi	.FS-17307/D dt.15.11.55	123.43	161.328
	7	Budidungri	.FS-17307/D dt.15.11.55	361.4	334.798
			Total	6279.64	6262.014
Deogaon		V.F.			
	1	Sarasbahal			5
	2	Barla			6.376
	3	Pipalmunda			6.252
	4	Sarasabahal			5
	5	Pipalmunda			4.52
	6	Rusuda			2.74
			Total		29.888
Deogaon		P.F. (CA)			
	1	Kudsing			40
	2	Salepali			30
	3	Dahimal			40
	4	Gambhariguda			2.01
			Total		112.01
Saintala		R.F. Block			
	1	Bhalipujadunguri	FS-6293/R Dt.20.01.79	142.51	190
	2	Barghati	FS-17307/D,	1102.8	1253.168
	3	Bhimkhol	FS-17307/D, Dt.	1758	2148.452
	4	Dabjrui	FS.56143/R Dt.24.08.82	332.09	324.251
	5	Juijhula	FS-17307/D Dt.15.11.55	337.51	337.736
	6	Khapadangar	FS-17307/D, Dt.	135.98	144.19
	7	Kusa	FS-17307/D, Dt.	1701.74	1670.835
	8	Samardangar	FS-17307/D Dt.15.11.55	597.73	613.343
	9	Sulia	FS-17307/D Dt.15.11.55	3042.08	3004.849
			Total	9150.44	9686.824
Saintala		P.R.F. Block			
	1	Kadalimunda	SRO No. 525/79 dt.	195.87	188.352
			Total	195.87	188.352
Saintala		V.F.			
	1	Junanimal			20
	2	Kermeli			10
	3	Junanimal			30
	4	Kermeli			4.2
	5	Rundimahul			25
	6	Manamunda			7.12
	7	Sargipali			4.256
	8	Dumemunda			10
	9	Kumbari			10
	10	Bagbahali			5
	11	Tengurupara			7
	12	Rugudipali			6
	13	Khajurpada			3.688
	14	Kharlikani			8.58

		Total		150.844
Saintala		P.F. (CA)		
	1	Junanimal		90
	2	Chanchada		50
	3	Kumbhari -I		30
	4	Kumbhari -II		10
	5	Karlabahali		100
	6	Manamunda-II		90
	7	Bagjore		40
	8	Kandhkelgaon		40
	9	Dhunkeda		40
	10	Tandilipali.		40
	11	Kundar gaon		40
	12	Duhichanchara		30
	13	Dabjore		60
	14	Bhandarbanji		40
	15	Samara		70
	16	Jhimanpali		26
	17	Dukalghat		3.9
	18	Lamkani		77.32
	19	Rengalbahal		102.02
	20	Dumerjore		159
	21	Brahmanijore		66.54
	22	Landapathar		50
		Total		1254.78
Titilagarh		R.F. Block		
	1	Barnei	FS-17307/D Dt.15.11.55	10261.02 8804.324
	2	Badtikhari	FS-17307/D Dt.15.11.55	941.01 40
	3	Khatpati	FS- 60128/R, Dt. 28.07.76	136.87 118.416
	4	Kutra	FS-17307/D Dt.15.11.55	116.14 115.724
	5	Santikhari	FS-17307/D Dt.15.11.55	310.75 0
	6	Siskela	FS-17307/D Dt.15.11.55	246.86 286.367
		Total	12012.65	9364.831
Titilagarh		V.F.		
	1	Belgaon		5.5
	2	Narun		10
	3	Jampara		10
		Total		25.5
Titilagarh		P.F. (CA)		
	1	Gokhrang		60
	2	Kusumakhal		70
	3	Rangabahali		40
	4	Bhikabahali		40

	5	Manamunda			100
	6	Kuamunda			60
	7	Bandhupala			60
	8	Kusmel			90
	9	Dharabgarh			60
	10	Piplibandh			80
	11	Ghgurpala			40
	12	Jamkhunta			50
	13	Keigaon			50
	14	Bigdel			20
	15	Belgoan			20
	16	Khubding			30
	17	Ghunsar			40
	18	Babu-ulba			50
			Total		960
Muribahal		R.F. Block			
	1	Bastrani I & II	13930, dt. 17.02.1979	184.47	219.476
	2	Chanutmal	12502/R, dt. 03.02.1979	90.81	121.9
	3	Sunari I & II	FS-17307/D, dt. 15.11.55	475.52	474.502
	4	Tikhari	FS-17307/D, dt. 15.11.55	10460.92	10240.62
			Total	11211.72	11056.498
Muribahal		V.F.			
	1	Ghantabahali			5
	2	Kandakhal			2.24
	3	Siletpada			3
	4	Gadagadabahal			9
	5	Chanabahal			5
	6	Jogirata			10
			Total		34.24
Muribahal		P.F. (CA)			
	1	Kendudar			40
	2	Chalki			50
	3	Dabjore - I			100
	4	Dabjore - II			100
	5	Jamtara			50
	6	Babejore.			70
	7	Jamunabahal			50
			Total		460
Bongo- munda		R.F. Block			
	1	Baboisagar	FS.17307/D dt.15.11.55	126.26	113.525
	2	Budharaja	FS.17307/D dt.15.11.55	217.32	181.399

	3	Chakagujia	FS-17307/D dt.15.11.55	879.4	786.313
	4	Chhatardandi (P)	FS.17307/D dt.15.11.55	4412.5	4086.808
	5	Dandel (P)	FS.17307/D dt.15.11.55	376.81	346.678
	6	Ghatual	FS-17307/D dt.15.11.55	445.16	480.286
	7	Hilpi	FS.17307/D dt.15.11.55	124.65	127.108
	8	Kalinili	FS.17307/D dt.15.11.55	323.74	336.178
	9	Karanjkhohol	FS.17307/D dt.15.11.55	282.07	260.161
	10	Khujen	FS.17307/D dt.15.11.55	339.94	454.829
	11	Munda	FS.17307/D dt.15.11.55	173.21	184.575
	12	Sarpani	FS.17307/D dt.15.11.55	128.7	146.885
	13	Sindhikela	FS 56900/R dt.27.07.77	160.64	181.343
			Total	7990.4	7686.088
Bongo-munda		V.F.			
	1	Patrapali			10
	2	Malibahal			12.5
	3	Janipora			4
	4	Kuskela			20
	5	Digisira			20
	6	Tenda Padar			10
			Total		76.5
Bongo-munda		P.F. (CA)			
	1	Barkani			100
	2	Gandharpala			40
	3	Junapada			60
	4	Suleikela			35
	5	Sargul			10
			Total		245
Kanta-banji		R.F. Block			
	1	Bakbahal	FS.17307/D dt.15.11.55	1772.96	1787.765
	2	Bhandari	FS.17307/D dt.15.11.55	583.57	562.891
	3	Chhatardandi(B)	FS.17307/D dt.15.11.55	1197.78	1109.382
	4	Dandel (B)	FS.17307/D dt.15.11.55	1708.17	1560.377
	5	Ganjaudar	FS.17307/D dt.15.11.55	846.22	916.119
	6	Lami	FS.17307/D dt.15.11.55	232.7	238.511
	7	Lamithuta	FS.17307/D dt.15.11.55	452.04	439.189
	8	Patpani	FS.17307/D dt.15.11.55	2013.5	1644.817
	9	Rajoo	FS.17307/D dt.15.11.55	1998.78	2198.87

	10	Ramod	FS.17307/D dt.15.11.55	919.06	904.575
			Total	11724.78	11362.496
Kanta-banji		P.F. (CA)			
	1	Bandanpali			11.2
			Total		11.2

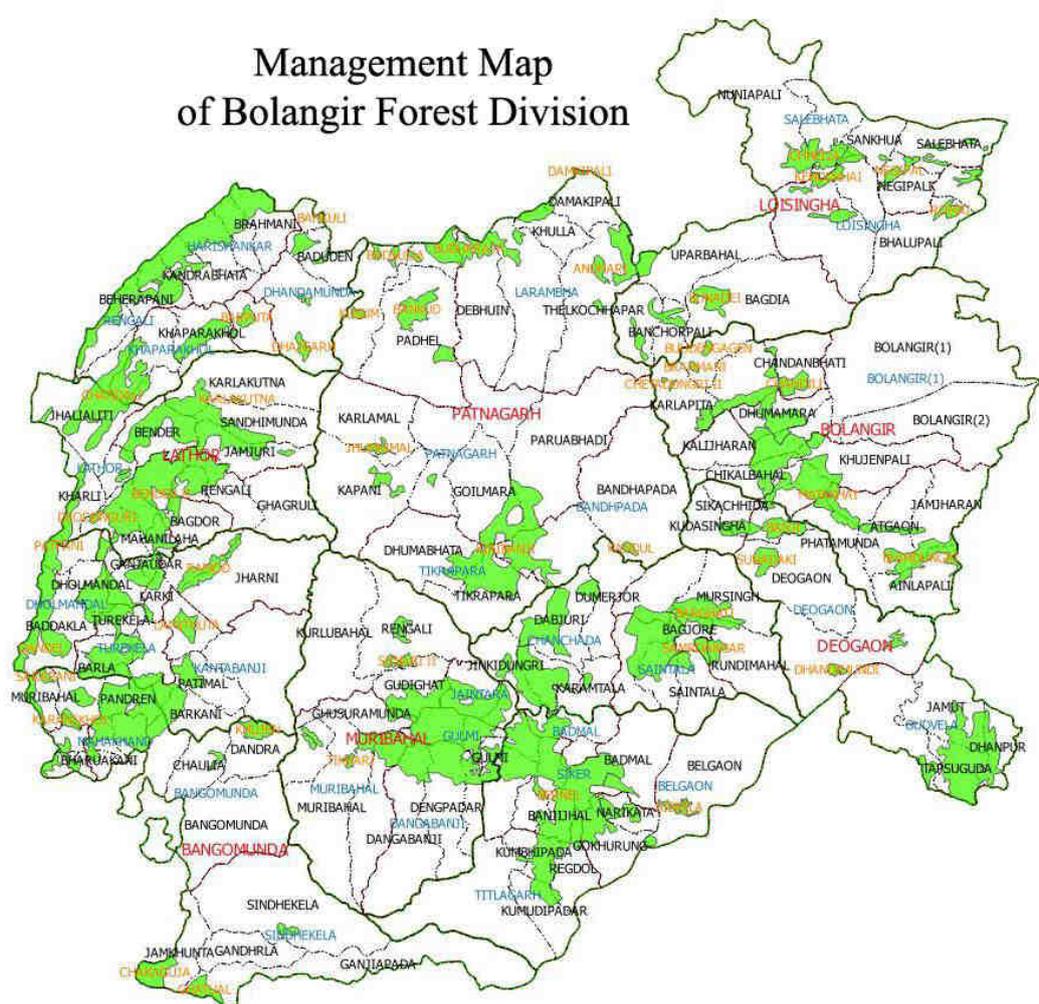
Lathore		R.F. Block			
	1	Beheramunda	FS-27276/R dt.06.04.79	73.23	62.758
	2	Bender-I	FS.17307/D dt.15.11.55	4777.82	4796.234
	3	Bender-II	FS.17307/D dt.15.11.55	5958.32	6067.523
	4	Chandli (P)	FS.17307/D dt.15.11.55	1835.14	1798.553
	5	Deodungri	FS.17307/D dt.15.11.55	91.87	89.949
	6	Karlakhutna	FS-805833/R dt.06.12.80	15.14	27.028
			Total	12751.52	12842.045
Lathore		P.R.F. Block			
	1	Saraibahal Tankarani	SRO No. 553/73 dt. 17.02.73	31.17	72.019
	2	Padhel	SRO No. 333/73 dt. 27.12.80	114.32	134.339
			Total	145.49	206.358
Lathore		V.F.			
	1	Kindrital			4.42
			Total		4.42
Hari-shankar		R.F. Block			
	1	Bankuli	FS.17307/D dt.15.11.55	50.59	54.751
	2	Barputa	FS.17307/D dt.15.11.55	225.82	218.634
	3	Bhutdunguri	FS.17307/D dt.15.11.55	79.72	88.232
	4	Bukajhula	FS.17307/D dt.15.11.55	94.29	110.02
	5	Chandli (B)	FS.17307/D dt.15.11.55	1863.36	1826.216
	6	Dhajagarh	FS.17307/D dt.15.11.55	221.77	200.6
	7	Gandhamardan	FS.17307/D dt.15.11.55	9251.32	6532.098
	8	Kapasia	FS.17307/D dt.15.11.55	355.73	329.707
	9	Thuta	FS.17307/D dt.15.11.55	962.36	935.302
		Total	13104.96	10295.560	
Hari-shankar		P.R.F. Block			
	1	Sapmund	SRO No. 119/79 dt. 12.01.79	21.85	23.51
			Total	21.85	23.51
Patnagarh		R.F. Block			
	1	Kiribanji	FS.17307/D dt.15.11.55	5738.57	5514.581

	2	Budharaja	FS.17307/D dt.15.11.55	1599.76	1704.158
	3	Mahadasani	FS.17307/D dt.15.11.55	1239.17	1258.904
	4	Jhumkimal	FS.17307/D dt.15.11.55	180.5	197.299
	5	Brahmani	FS.17307/D dt.15.11.55	95.51	92.887
Patnagarh	6	Baraputa	FS.17307/D dt.15.11.55	361.39	401.017
	7	Kendumundi	FS.17307/D dt.15.11.55	79.32	64.913
	8	Chagria	FS.17307/D dt.15.11.55	313.23	277.389
	9	Andhari	FS.17307/D dt.15.11.55	282.07	252.409
	10	Kharsel	FS.17307/D dt.15.11.55	49.27	79.596
	11	Badsulia	FS.17307/D dt.15.11.55	108.87	115.193
	12	Sansulia	FS.17307/D dt.15.11.55	92.27	83.262
	13	Kusumdungri	FS.17307/D dt.15.11.55	119.79	127.57
	14	Buthikuradhi	FS.17307/D dt.15.11.55	428.17	378.191
	15	Kandul	FS.17307/D dt.15.11.55	126.26	143.585
	16	Damkipali	FS-12756/R dt.14.2.79	132.7	118.261
	17	Bankud	FS.17307/D dt.15.11.55	881.42	845.489
			Total	11828.27	11654.704
Patnagarh		V.F.			
	1	Babejuri			20
	2	Pandripani			10
	3	Gangasagar			10.5
	4	Bhatabahali			2.98
	5	Dumerpita			10
	6	Goelpita			4
			Total		57.48
Patnagarh		P.F. (CA)			
	1	Jurabandh			50
	2	Damal			30
	3	Bayaudar			21
	4	Guchhapali			13.36
	5	Babjore			55.2
	6	Rengtasil			66.94
	7	Jhankarpali			66.95
	8	Mundamahul			100.24
	9	Bandhanbhadi			47.35
	10	Ganjaudar			14.43
	11	Mudghat			26.3
	12	Bhaludhara			11.87
	13	Gadiajore			26.82
	14	Manaipuda			26.43

Patnagarh	15	Barapita			42.89
	16	Tulsidungri			103.71
	17	Laxmanpur			154.94
	18	Ramchandrapur			81.65
	19	Matupali			65
	20	Goilpita			137.2
	21	Desand			99
	22	Pandripani dpf			60
	23	Amdarha			10.4
	24	Dangartal			13.2
	25	Juba			53.26
	26	Nagphena			12.14
			Total		
Loisingha		R.F. Block			
	1	Ramai	.FS-17307/D dt.15.11.55	301.1	265.282
	2	Pandri Dungri	.FS-17307/D dt.15.11.55	72.44	181.114
	3	K.S. Pandri	FS-8277/R dt.27.01.79	31.18	17.966
	4	Kumari	FS-17307/D dt.15.11.56	103.6	76.59
	5	Pati	.FS-17307/D dt.15.11.55	247.27	281.817
	6	Chhelia	.FS-17307/D dt.15.11.55	1254.15	1261.791
	7	Kendukhai	.FS-17307/D dt.15.11.55	364.63	363.232
	8	Ghati	.FS-17307/D dt.15.11.55	68.4	44.67
	9	Pathargarh	.FS-17307/D dt.15.11.55	394.17	341.345
	10	Hatikhoj	FS-99522/R, dt.26.12.75	46.79	86.898
	11	Magarkend	.FS-17307/D dt.15.11.55	76.9	83.833
	12	Kumbhar	.FS-17307/D dt.15.11.55	103.6	90.52
	13	Negipali	.FS-17307/D dt.15.11.55	280	343.77
	14	Bangabahal	FS-99522/R, dt.26.12.75	11.74	20.686
	15	Kalijakhai	FS-64238/R Dt.03.09.79	20.92	16.639
	16	Bhandarbanji	FS.17307/D dt.15.11.55	93.89	91.757
	17	Koyaghati	FS.17307/D dt.15.11.55	251.72	242.985
	18	Gharsankar	FS.17307/D dt.15.11.55	452.04	426.284
	19	Sundadei	FS.17307/D dt.15.11.55	632.54	619.751
	20	Kapoo	FS.17307/D dt.15.11.55	57.47	53.58
		Total	4864.55	4910.510	

Loisingha		V.F.		
	1	Banjari		5.6
	2	Bakti		5
	3	Bangabahal		20
	4	Khalipali		8
	5	Salebhata		3.6
	6	Bender		10
	7	Nuapali		1.6
	8	Sankhua		12
		Total		65.8
Loisingha		P.F. (CA)		
	1	Uchhabapali		33
	2	Badtika		15
	3	Bhalupali		30
	4	Ratakhandi		46.43
		Total		124.43
		G. Total		110403.259

Management Map of Bolangir Forest Division



**FIRE INCEDENCES ANALYSIS OF BOLANGIR FOREST DIVISION
SITUATION ANALYSIS**

Range Wise Fire Point from 2019 to 2022

Name of the Range	No. of Fire Points
BANGOMUNDA RANGE	230
BOLANGIR RANGE	579
DEOGAON RANGE	204
HARISHANKAR RANGE	183
KANTABANJI RANGE	182
LATHOR RANGE	371
LOISINGHA RANGE	257
MURIBAHAL RANGE	167
PATNAGARH RANGE	477
SAINTALA RANGE	358
TITLAGARH RANGE	293
Grand Total	3301

Year Wise from 2019 to 2022

Year	No. of Fire Points
2019	429
2020	159
2021	1929
2022	784
Grand Total	3301

Month Wise from 2019 to 2022

Month	No. of Fire Points
January	12
February	221
March	2180
April	807
May	77
June	4
Grand Total	3301

Categorization

Basing on the fire point incidences, fire vulnerability has been categorized into the following categories.

1. Very Severe---- >10%
2. Severe ----- 5-9
- 3) Medium ----- 3-4
- 4) Light ----- 2-3
- 5) Insignificant ---- <2%

Colour Coding

	VERY SEVERE
	SEVERE
	MEDIUM
	LIGHT
	INSIGNIFICANT

Beat Wise Fire Vulnerability Mapping

Basing on the fire points of 2019, 2020, 2021 & 2022 data, the beats have been categorized .

Sl. No.	Name of the Beat	Count of Latitude	Average /Year	Intensity
1	BADDAKLA BEAT	50	27.47	Very Severe
2	PANDREN BEAT	57	24.78	Very Severe
3	SALEBHATA BEAT	57	22.18	Very Severe
4	JHALIALITI BEAT	78	21.02	Very Severe
5	DEOGAON BEAT	42	20.59	Very Severe
6	KHAPARAKHOL BEAT	36	19.67	Very Severe
7	SHIKER BEAT	55	18.77	Very Severe
8	TAPSUGUDA BEAT	38	18.63	Very Severe
9	GUDVELA BEAT	37	18.14	Very Severe
10	LARAMBHA BEAT	85	17.82	Very Severe
11	BADMAL BEAT	52	17.75	Very Severe
12	JAMKHUNTA BEAT	40	17.39	Very Severe
13	JHIMANPALI BEAT	54	15.08	Very Severe
14	BENDER BEAT	55	14.82	Very Severe
15	RENGALI BLOCK BEAT	27	14.75	Very Severe
16	PADHEL BEAT	69	14.47	Very Severe
17	BARKANI BEAT	26	14.29	Very Severe
18	HARISHANKAR BLOCK BEAT	26	14.21	Very Severe
19	BARBANDH BEAT	23	13.77	Very Severe
20	CHATRANG BEAT	31	13.48	Very Severe
21	MAHAKHAND-A BEAT	31	13.48	Very Severe
22	ATGAON BEAT	78	13.47	Very Severe
23	GOVINDPUR BEAT	22	13.17	Very Severe
24	KANDHKELGAON BLOCK BEAT	46	12.85	Very Severe
25	LOISINGHA BLOCK BEAT	33	12.84	Very Severe
26	SARGAD BLOCK BEAT	33	12.84	Very Severe
27	PATNAGARH BLOCK BEAT	61	12.79	Very Severe
28	GUDIGHAT BEAT	21	12.57	Very Severe
29	DHANDAMUNDA BEAT	23	12.57	Very Severe
30	JAMUT BEAT	25	12.25	Very Severe
31	BANJIJHAL BEAT	34	11.60	Very Severe
32	HARDATAL BEAT	67	11.57	Very Severe
33	LATHOR BEAT	42	11.32	Very Severe
34	BOLANGIR(2) BLOCK BEAT	64	11.05	Very Severe
35	REGDOL BEAT	31	10.58	Very Severe
36	BANDHAPADA BEAT	50	10.48	Very Severe
37	DENGPADAR BEAT	17	10.18	Very Severe
38	KARLA BEAT	17	10.18	Very Severe

39	DHUNKEDA BEAT	36	10.06	Very Severe
40	JHALBAHAL BEAT	18	9.84	Severe
41	MURSINGH BEAT	34	9.50	Severe
42	DHOLMANDAL BEAT	17	9.34	Severe
43	DHANPUR BEAT	19	9.31	Severe
44	BHARUAMUNDA BEAT	17	9.29	Severe
45	CHANCHADA BLOCK BEAT	33	9.22	Severe
46	GANDHREL BEAT	53	9.15	Severe
47	DABJURI BEAT	32	8.94	Severe
48	KUMBHIPADA BEAT	26	8.87	Severe
49	TIKRAPARA BEAT	41	8.60	Severe
50	KASIAPALI BEAT	22	8.56	Severe
51	DHUMAMARA BEAT	49	8.46	Severe
52	KHARLIKANI BEAT	49	8.46	Severe
53	LARKI BLOCK BEAT	15	8.24	Severe
54	SAINTALA BEAT	28	7.82	Severe
55	KHUJENPALI BEAT	45	7.77	Severe
56	BADUDEN BEAT	14	7.65	Severe
57	KUDASINGHA BEAT	15	7.35	Severe
58	CHIKNIBAHALI BEAT	12	7.19	Severe
59	DANGABANJI BEAT	12	7.19	Severe
60	BAGDIA BEAT	18	7.00	Severe
61	SINDHEKELA BEAT	16	6.96	Severe
62	DUMERBAHAL BEAT	20	6.83	Severe
63	GAMBHARI BLOCK BEAT	25	6.74	Severe
64	KHARLI BEAT	25	6.74	Severe
65	GOILMARA BEAT	32	6.71	Severe
66	PATIMAL BEAT	12	6.59	Severe
67	SATBAHANI BEAT	11	6.59	Severe
68	GUNDRUPALI BEAT	12	6.56	Severe
69	BADTIKA BEAT	16	6.23	Severe
70	UPARBAHAL BEAT	16	6.23	Severe
71	JAMJURI BEAT	23	6.20	Severe
72	RAMOD BEAT	11	6.04	Severe
73	MURIBAHAL BEAT	10	5.99	Severe
74	AINLAPALI BEAT	34	5.87	Severe
75	JINKIDUNGRI BEAT	21	5.87	Severe
76	NUNIAPALI BEAT	15	5.84	Severe
77	DHARABGARH BEAT	17	5.80	Severe
78	RUNDIMAHAL BEAT	20	5.59	Severe
79	JHARNI BEAT	10	5.49	Severe
80	THELKOCHHAPAR BEAT	26	5.45	Severe
81	SINKHAMAN BEAT	11	5.39	Severe
82	DHAURAKHAMAN BEAT	20	5.39	Severe
83	GULMI BEAT	9	5.39	Severe
84	BAGJORE BEAT	19	5.31	Severe

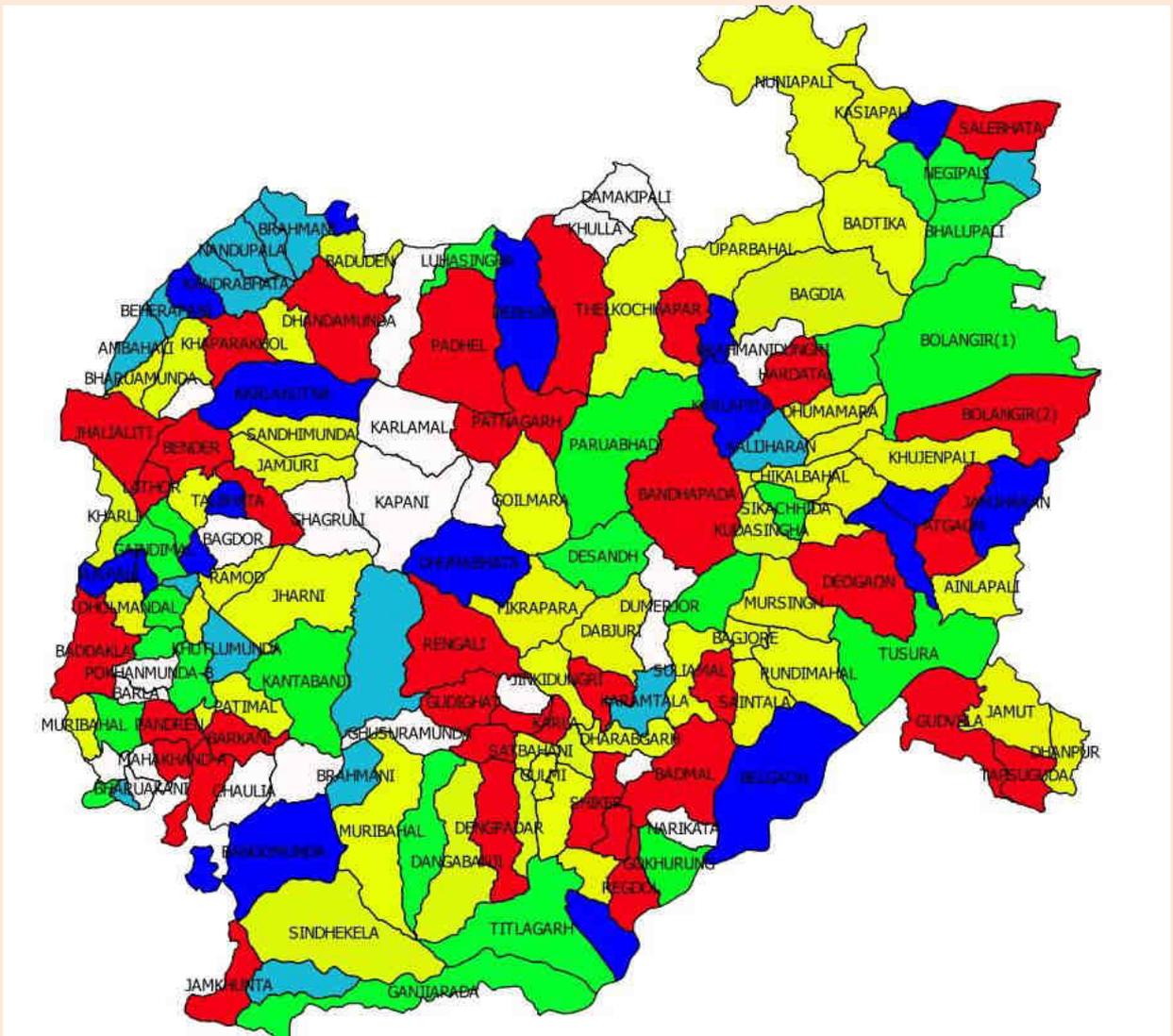
85	CHIKALBAHAL BEAT	30	5.18	Severe
86	SANDHIMUNDA BEAT	19	5.12	Severe
87	DONGARPADA BEAT	15	5.12	Severe
88	SULIAMAL BEAT	18	5.03	Severe
89	KANTABANJI BLOCK BEAT	9	4.95	Medium
90	GOKHURUNG BEAT	14	4.78	Medium
91	LANDAPATHAR BEAT	16	4.47	Medium
92	TUSURA BEAT	9	4.41	Medium
93	PARUABHADI BEAT	21	4.40	Medium
94	BUDHIBAHAL BEAT	8	4.40	Medium
95	BOLANGIR(1) BLOCK BEAT	25	4.32	Medium
96	PIPALBAHAL BEAT	15	4.04	Medium
97	SIKACHHIDA BEAT	8	3.92	Medium
98	BADBANKI BEAT	9	3.91	Medium
99	MURIBAHAL BEAT	9	3.91	Medium
100	GAINDIMAL BEAT	14	3.77	Medium
101	RENGALI BEAT	14	3.77	Medium
102	LUHASINGHA BEAT	18	3.77	Medium
103	TENTELKHUNTI BEAT	6	3.59	Medium
104	DESANDH BEAT	17	3.56	Medium
105	BHALUPALI BEAT	9	3.50	Medium
106	GANJIAPADA BEAT	8	3.48	Medium
107	JUBAMAL BEAT	8	3.48	Medium
108	POKHANMUNDA-A BEAT	6	3.30	Medium
109	TUREKELA BEAT	6	3.30	Medium
110	CHANDANBHATI BEAT	19	3.28	Medium
111	DHAURADADAR BEAT	8	3.11	Medium
112	NEGIPALI BEAT	8	3.11	Medium
113	TITLAGARH BLOCK BEAT	9	3.07	Medium
114	JAMJHARAN BEAT	17	2.94	Light
115	BELGAON BEAT	8	2.73	Light
116	KHULLA BEAT	13	2.73	Light
117	BANCHORPALI BEAT	7	2.72	Light
118	KARLAKUTNA BEAT	10	2.70	Light
119	TALBHATA BEAT	10	2.70	Light
120	BANGOMUNDA BLOCK BEAT	6	2.61	Light
121	MAKARCHUAN BEAT	15	2.59	Light
122	DEBHUIN BEAT	12	2.52	Light
123	MAHANILAHA BEAT	9	2.43	Light
124	KARLAPITA BEAT	14	2.42	Light
125	PHATAMUNDA BEAT	14	2.42	Light
126	PANDRIDUNGRI BEAT	6	2.33	Light
127	SANKHUA BEAT	6	2.33	Light
128	KUSPALI BEAT	4	2.20	Light
129	MAHULPATI BEAT	4	2.20	Light
130	SAPMUND BEAT	4	2.19	Light

131	THUTHIBHATA BEAT	4	2.19	Light
132	DHUMABHATA BEAT	10	2.10	Light
133	KUMUDIPADAR BEAT	6	2.05	Light
134	GHAGURLI BLOCK BEAT	7	1.89	Insignificant
135	JAINTARA BEAT	3	1.80	Insignificant
136	RENGALI BEAT	3	1.80	Insignificant
137	DANDRA BEAT	4	1.74	Insignificant
138	KARLAMAL BEAT	8	1.68	Insignificant
139	POKHANMUNDA-B BEAT	3	1.65	Insignificant
140	GOILVADI BEAT	4	1.37	Insignificant
141	BAGDOR BEAT	5	1.35	Insignificant
142	BHARUAKANI BEAT	3	1.30	Insignificant
143	MAHAKHAND-B BEAT	3	1.30	Insignificant
144	MUDKANI BEAT	3	1.30	Insignificant
145	DAMAIPALI BEAT	6	1.26	Insignificant
146	RENGALI BEAT	3	1.17	Insignificant
147	PHULAKIMUNDA BEAT	2	1.09	Insignificant
148	BRAHMANIDUNGRI BEAT	6	1.04	Insignificant
149	CHAULIA BEAT	2	0.87	Insignificant
150	KAPANI BEAT	4	0.84	Insignificant
151	NARIKATA BEAT	2	0.68	Insignificant
152	GHUSURAMUNDA BEAT	1	0.60	Insignificant
153	BARLA BEAT	1	0.55	Insignificant
154	DAMAKIPALI BEAT	2	0.42	Insignificant
155	KENDUMUNDI BEAT	2	0.42	Insignificant
156	DUMERJOR BEAT	1	0.28	Insignificant
		3301		

ABSTRACT

Magnitude of fire	Count of Name of the Beat
Insignificant	23
Light	20
Medium	25
Severe	49
Very Severe	39
Grand Total	156

Beat Wise Fire Vulnerability Map



Forest Fire ... besides other causes, a major threat to forest depletion

Besides the other factor, the forest fire and its hazardous effects pose a challenging task in preservation of flora and fauna of a forest boundary which need to be addressed against its fury. The herbs, shrubs, trees, which are damaged due to forest fire are the real forest of future and need to be preserved for regeneration. Uncontrolled forest fire may destroy healthy thick forest cover within no time. Besides direct loss to forest cover, forest fire also kills wildlife, damages environment, degrade soil quality and retrogrades forest regeneration. Since historical times, forest throughout the world has been adversely affected by fire. Fire always causes many direct or indirect effects on the forest ecosystem. They may merely be

beneficial but at most of the times these effects are deteriorating. The damage to a forest by fire depends mainly on size of the fire.

Nature and Frequency: -Forest fires usually occur during hot summer months when leaf shedding of deciduous forests occurs from February to June. 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, windflow in the fire affected area, etc. In Bolangir district, most of the fires are smoldering type, rather than flame generating like in conifer forests.

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 intensity & frequency is steep in case of a dry spell of summer and gets aggravated if rainfall is poor in a particular year.

Causes of Forest Fire: -Most of the Forest Fires in State are anthropogenic in nature. Forest fires can broadly be classified into 4 categories: - 1) Natural Forest Fire, 2) Controlled fire for forest management, 3) Deliberate Forest fires by local inhabitants, and 4) Accidental Forest Fire.

Many forest fires start from man-made causes such as podu/ shifting cultivation, collection of NTFPs, during the time of hunting, using fire torch light during night hours, collection of thatch for roofing, charcoal processing, smoking and spark from a picnicker's open hearth in a desiccated forest which can often be sufficient to start a forest fire in summer. However, rain extinguishes such fires without causing much damage. As a standard silviculture operation controlled burning is done as a part of Forest Management practices to control and reduce forest fire hazard. Prolong dry season with high temperature and availability of dry leaves in forest floor provide conducive environment for its rapid spread. Such fires usually start on the ground, as dry litter (senescent leaves and twigs) catches fire easily. Then, flamed by strong winds, the flames soon engulf vast tract of forest turning them into ashes and, therefore, cause extensive damage unless controlled in time.

In certain pockets of the district, local inhabitants put fire on ground as an age-old practice for making the ground clear and collecting mahua flowers (used for preparing local liquor), sal seeds, firewood and other available resources. On some occasions people involved in nefarious activities such as poaching of wildlife and smuggling of timbers burn the dry leaves to make their job easier. People of peripheral areas and those living within forests, having domestic livestock that use forests as the source of grazing with rich foraging materials, deem it appropriate to clean the floor by setting fire to the dried materials with the hope that fresh grazing vegetation, such as grass and leaves will regenerate to their advantage. In many instances, people used to smoking throw away the ends of bidis and cigarette butts still ablaze and some having picnics leave the place still with active fire that subsequently result in forest fires. Sometimes locals put fire on the roadside dry leaves without any specific reason, or being inebriated, and some people do it just as a way of amusement and merry making.

Need of a Meticulous District Fire Management Plan :-

Having observed the huge scale forest fire throughout the state during last year due to continuous dry spell in the state, Government of Odisha has taken a critical view on the destruction and chalked out a result oriented Management Plan to be prepared in each District to cater the challenges posed by Forest Fire and its hazardous effect on forest, environment and wildlife. As an outcome of the principle laid down by Forest, Environment and Climate Change Department, Govt. of Odisha, a meeting on Forest Fire Prevention and management – District Action Plan for 2023 has conducted by the Collector & District Magistrate on 23.12.2022 at 11 AM in the Collectorate Conference Hall. As a part of the instruction a details this Action plan has been prepared for the year 2023 to control and prevent forest fire in the Division in convergence with the following other stake Holders

- District administration
- Kenduleaf organization
- Odisha Forest Development Corporation
- Odisha Fire Service
- Panchayati Raj Institution
- Van Surakshya Samiti
- NGO
- YouthClub, NCC, NSS, Mission Shakti, SHG
- Tribal Development CooperativeCorporation

A sensitization meeting is proposed to be held during this month for obtaining proper co-ordination and better action for Forest Fire prevention. Then a coordination meeting with District Administration and PRI members will be held very shortly to seek their help for this noble cause. The field functionaries have been instructed to conduct awareness/ sensitization meetings with VSS, youth clubs and other village committees with the help of NGOs.

STRATEGIES FOR MITIGATING THE CHALLENGES OF FOREST FIRE – 2023

As a prelude for a target action in the matter, unanimously it was decided to take up critical data analysis of the forest fire occurrence during last five to ten years in the district and to find out the target Beats, Reserve Forest, fringe villages for focused monitoring. A detail data analysis taking into account the intensity and magnitude of forest fire occurrence, the observation is hereby made and re-produced in the subsequent pages.

ACTION PLAN FOR THE YEAR 2023 FIRE HAZARD MITIGATION Basing on the situation analysis mentioned above, the Fire spots have been identified as very severe, severe, medium, light, insignificant. The critical beats and forest villages having very severe and severe category will be focused during 2023 and accordingly present action plan is prepared for taking preventive and mitigation measures as suggested below.

PREVENTIVEMEASURES AND ACTION POINTS

A preliminary Sensitization meeting involving staffs of this Division has already been done and a Division level coordination meeting staffs of Territorial wing with staffs of DFO KL Division, Bhawanipatna, DMOFDC and District Fire Officer is proposed to be held on 30th

December 2022 with objective of detail discussion, inviting suggestion and to find out a modality for undertaking preventive measures in a coordinated effort. The activities suggested by staffs during preliminary Sensitization meeting on Forest Fire 2023 are detailed below.

Awareness Programme (to be done from December, 2022 to March, 2023)

- Coordination Meeting with the local BDO, Tahasildar, Kendu leaf staff, OFDC Ltd. Staff, Fire staff, Revenue Officials, PRI members & Govt. Officials of different G.Ps of all seven ranges will be conducted to make the Panchayat Forest Fire Free (3Fpanchayat).
- Organizing mock drill training for forester, forest guard and VSS members with assistance of fire service personnel for effective fire control.
- Awareness Meeting will be conducted in 653 Nos. of villages/VSS in all five ranges. Oath taking will be done in all villages to prevent forest fire. All SHGs of a village will be mobilized to protect the forest from fire.
- Awareness Rally/ folk dance etc will be organized in different vulnerable villages for prevention of forest fire.
- This Division has 154 no. of AJY intervention villages having VSS. Total forest area under treatment 7900 ha. Massive awareness camping through meeting in above village with help of P-NGO Team having 7 no. Team Leader and 14 no of D.Os engage for capacity building is planned.
- Forest Fire Ratha (Chariot) will move in all fire prone areas of this division and will sensitize the people not to set fire and also educate the people regarding penal provision for setting fire in the forest.
- Banners & Posters will be fixed at different conspicuous places to aware the people. Dos and Don'ts on forest fire will be displayed in Odia and tribal vernacular language in all villages/ inside forest/all public places.
- The local foresters and forest guards shall participate in Phadi committee meeting and counsel/ warn the villagers not to set fire in the forest for kenduleaves.

Maintenance & Creation of Fire Line (January 2023 to March 2023)

- Fire lines at a width of 10ft over 1200 RKM will be created in all existing footpaths, roads, boundary of forest block passing through the forest.
- Fire line at width of 10ft will be created around all plantation sites.
- Zigzag fire line over 1000 RKM will be created inside natural forest through blower.
- Removal of all debris, leaf litters and other inflammable materials from the forest floor will be taken up where SSO work has been undertaken.

Establishment of camp at strategic location (February 2023 to May 2023)

- I. The site for setting up camps will be selected and machans/ make shift house will be constructed within first fortnight of February.
- II. 60 Nos. of camps will be established in the severely vulnerable areas from 15th February to 31st May 2023. In each camp 03 Nos. persons will be deployed. They will conduct regular patrolling inside the forest area and keep surveillance on the movement of public/poachers into the forest.

Patrolling duty during fire season (15th February, 2023 to 31st May 2023)

1. Repairing of forest road and inspection path inside the forest area before the month of January for intensive patrolling before fire season.
2. Regular intensive patrolling (by four wheeler, by two wheeler, by foot) will be conducted by the forest staff and squad to prevent any occurrence of forest fire.
3. Surveillance on poachers will be reinforced during fire season.

Other activities

- I. Action for filling of vacant position in fire risks forest beats will be taken during January.
- II. Procurement of firefighting equipment and tools will be made within January 2023 to strengthen the base level field functionaries. During 2023 one well-conditioned fire blower will be provided to each beat. In case of beats having multiple forest blocks, 02 Nos. of fire blowers shall be provided.
- III. Fire fighting squad will be selected by the Range Officers within January who are having experience in extinguishing forest fire during previous years.
- IV. Arrangement of labour and hired vehicle is to be completed within January 2023.
- V. The staff will be well acquainted with the area, map, topography, routes, water source and fire risk area of his jurisdiction.
- VI. The mobile phones of all staff and squad will be recharged and shall be registered in OFMS/FSI portal.
- VII. Provision of incentive will be made to the VSS/villages /Panchayat which will be forest fire free during 2023.
- VIII. Provision of reward will be made to the staff/ squad/ public who effectively controls forest fire or provide information about the offender of forest fire.
- IX. The VHF stations and walkie talkie are to be made functional for quick transmission of fire alert particularly in mobile phone in accessible area.

MITIGATIVE MEASURES

- (i) A whatsapp group has been formed in Bolangir Forest Division in which DFO, All ACFs, ROs, Frs and FGs and Divisional Control Room are members. Soon after receipt of message from FSI/ state headquarters the said message is immediately passed on by the Division Control Room in this whatsapp group along with location map depicted on the topo sheet. The staff/squad after receipt to the message immediately rush to the spot with blower, other fire fighting tools and douse the fire. In 2023 the same procedure will be followed.
- (ii) This year mobile phones of forest guards of all vulnerable beats will be registered in FSI so that they will receive fire alert immediately from FSI directly and take steps to control the fire. Support of Odisha Fire service will be taken wherever required.
- (iii) The staff will conduct enquiry into each fire affected forest area, assess the loss, verify the action taken by them to control fire and submit report.
- (iv) The staff will take expeditious steps to initiate legal action against culprits with due procedure and adequate evidence. Police support will be taken whenever required.
- (v) During 2022 one well-conditioned fire blower will be provided to each beat. In case of beats having multiple forest blocks, 02 Nos. of fire blowers shall be provided
- (vi) After extinguish the fire, the fire points will be uploaded in OFMS portal.

FUNCTIONING OF 24X7 CONTROL ROOM

- I 24 X7 fire prevention control room at division headquarters will be opened from February 2023 to June2023.
- II 06 Nos. staff will be deployed in 24 hours with 8 hours duty for 02 Nos. of staff in each shift.
- III Sub-Divisional Level Rapid Fire Response Team (RFRT) will be constituted with staffs from Range Office, Fire Wing, Panchayat Wing, District Disaster Management Unit to work on 24 x 7 basis to be stationed at Sub-Division Range office i.e. Bolangir, Patnagarh & Titilagarh with separate infrastructure like Fire Fighting Equipment, Vehicles etc. The Team will rush to the spot in possible fire occurrence reported before the fire going wild in nature and take all out effort to extinguish.
- IV. A whatsapp group has been formed in Bolangir Forest Division in which DFO, All ACFs, ROs, Frs and FGs and Divisional Control Room are members. Soon after receipt of message from FSI/ state headquarters the said message is immediately passed on by the Division Control Room in this whatsapp group along with location map

depicted on the topo sheet. The staff /squad after receipt of the message immediately rush to the spot with blower, other fire fighting tools and douse the fire. In 2023 the same procedure will be followed.

- V. A register is maintained in the control room in which GPS coordinates of fire points, area affected, action taken by staff are recorded.

Similarly control room at all range office of the Division will be opened during 2023 fire season. Forester (Enforcement) and DEO of each range will operate the control room. Soon after receipt of the fire alert from division office the same will be communicated to all FGs for mitigative action. RO of concerned range will monitor the control room in exigencies and ensure complete extinguish of fire by field staff / squad and upload the fire point in OFMS portal.

BUDGETORY ALLOCATION PROPOSED FOR THE FIRE ACTION PLAN

Sl. No.	Head of Account	Amount in Rs.
1	2	3
	101-3330-Forest Fire Prevention & Management (FPM)	
01	Awareness Campaign about forest fire among VSS Members of Surrounding Villages/ Temporary Staff engaged for fire protection (Rath, Rally, banner, poster, meeting) (150 villages X Rs. 6000 per Villages)	900000.00
02	Pre Fire Season Workshop for coordination among the line departments and elected bodies and NGO (2 nos. X Rs. 10000/-)	20000.00
03	Fire blower 22 Nos. @Rs. 60,000/- each	1320000.00
04	Fuel and Maintenance of 98 old blower & 22 new blower @Rs. 10000/- each	1200000.00
05	Engagement of Fire Fighting Squad 11 Sqd. X 10 person X 150 days X Rs. 333/- per Squad	5494500.00
06	Incentive to villages/ communities for protection against forest fire under participatory forest management approach through 75 nos. of sensitizing camp @ Rs. 2000/- per village/ community)	150000.00
07	Purchase of Oral Dehydration Sachets & Glucose	20000.00
08	Training & Capacity Building on Fire Fighting Methods for Frontline Staff (2 no. X Rs. 15000/-)	30000.00
09	Monitoring & Review of the measures taken for prevention & control of forest fire	35000.00
10	Fire Fighting equipment (Shoe, torch, water bottle, cap, napkin) @ Rs.3000/- per person for 110 persons	330000.00
11	Hiring of vehicle @1500 per day X 150 days X 11 unit	2475000.00
12	Purchase of First Aid Kit	55000.00
13	Imprest money i.e., RO @Rs. 20000/- X 11 Nos.= Rs. 220000 & DFO @Rs. 200000/-	420000.00
	TOTAL	12449500.00
	CAMPA APO 2023-24	
01	Creation and Maintenance of Fire line (1200 RKM) (1200 X Rs. 333 X 10)	3996000.00

02	Engagement of 3 Separate vehicle for 3 Sub-Divisional Level Rapid Response Team @ Rs. 45000 / month / vehicle for 5 months = 45000 x 3 x 5	675000.00
	TOTAL	4671000.00
	Addl. Fund required from other sources	
01	Fire line creation (through blower) 600KM @ 1000/-	600000.00
02	Camp at vulnerable site 30 Nos. X 3 persons X 150 days X 333/-	4495500.00
03	Imprest money i.e., Forest Guard 50 Nos vulnerable Beats approx X Rs. 5000	250000.00
	TOTAL	5345500.00
	GRAND TOTAL	22466000.00

CONVERGENCE

DRDA will be mobilized to sanction project relating to "Improvement of forest" in which components like fire line creation will be incorporated. The PRI members will be motivated to counsel the villagers to refrain from setting fire and extinguish the fire wherever occurs nearby their village. District Administration will be requested to coordinate among all departments & impart instruction to all line departments to assist forest department in extinguishing forest fire.

SUPPORT OF OTHER LINE DEPT

Support of fire service will be taken whenever required. District Fire Officer has assured to extend cooperation in this regard. The Fr/FG/Seasonal staff of Kenduleaf wing will be motivated to extinguish fire along with territorial staff. The field functionaries of OFDC Ltd will be requested to extend cooperation to our staff.

THRUST AREA OF MONITORING

The monitoring of all fire prevention & mitigation activities will be done by the DFO & ACFs of this Division. In view of the huge wildfire observed in certain pocket of the district, it is felt necessary to bestow special thrust on the following points to mitigate the wild fire in rapid response mode.

- From the available data of last three years vulnerable Forest Block in order of fire occurrence is to be identified from FSI Modis data and mapped in the Plan.
- Special awareness programme among the villagers of vulnerable pocket, through meetings, motivation, folklore show will be taken up to make them aware of the hazards of wildfire on human and wildlife.
- Person engaged for watch and ward under different AR and ANR plantations of various scheme like CAMPA, AJY will be especially engaged for fire protection with accountability to be deal with their wages.
- Fire Response Whatsapp group in Range Level involving all stake holders from Range Office Staffs, Panchayat Office Staffs, Local Fire wing, VSS President and Active Members will be created for quick messaging of fire occurrence.
- Dist Level Fire response Whatsapp group will be created for quick sharing of fire point received from FSI Modis Satellite data.

- Sub-Divisional Level Rapid Fire Response Team (RFRT) will be constituted with staffs from Range Office, Fire Wing, Panchayat Wing, District Disaster Management Unit to work on 24 x 7 basis to be stationed at Sub-Division Range office i.e. Bolangir, Patnagarh & Titilagarh with separate infrastructure like Fire Fighting Equipment, Vehicles etc. The Team will rush to the spot in possible fire occurrence reported before the fire going wild in nature and take all out effort to extinguish.
- Capacity Building Training at Range Level to deal with wildfire will be taken up at least 2 Training before onset of fire season and during the fire season in each Range.
- Capacity buildings of Gram Sathi engaged under MGNREGS for motivation of villagers regarding protection of forest from fire
- Control Room net works with 24 x 7 basis will be operational zed from January to June and the phone number of the Division and Range control room will be made public.
- They will ensure conduct of awareness meetings, awareness chariot, rallies etc before outset of fire season.
- They will ensure high propaganda in public places though banner & poster & in media, social media through advertisement.
- Control burning around the mohua tree in ring method will be ensured before fire season.
- All the fire lines along the Division boundary/District Boundary are to be traced before onset of fire season.
- Control burning of all inflammable leaf litters will be completed along the road side, foot path etc before fire season.
- Fire fighting squad will be selected by RO & will be trained before hand.
- Purchase of blower and other fire fighting tools will be procured before fire season and availability of those tools with the fire fighting squad will be ensured. All old blowers will be repaired & to be made functional.
- The site for temporary camps inside the forests are to be selected beforehand and the staff/ squad are to be positioned well in advance with provision of all logistics
- Hiring process of all vehicles will be completed within January and those will be put to service from February onwards.
- Rampant patrolling of all staff will be ensured.
- Presence of all staff of their headquarters will be ensured. Leave of staff during fire season will be cancelled.
- Surveillance on poachers will be strengthened.
- Communication of fire alert in real time basis is to be ensured.
- Extinguishing of fire and uploading of fire point in OFMS will be properly monitored.

EXPECTED ACHIEVEMENT AGAINST APPREHENDED FIRE HAZARD

Besides a strict adherence to the Standard Operating Procedure (SOP) designed for Fire Season- 2023, the preventive and mitigation measure enveloped in the Action Plan will be adhered to in 2023 fire season. With the wholehearted Endeavour of all staff of this Division the fire incidence can be prevented/controlled to maximum extent and a calculative move can be taken against the apprehended nature's fury in the shape of Forest Fire during 2023 fire season.

Chapter -11 CHEMICAL Disaster (INDUSTRIAL),

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 prior warning signals for an impending disaster. Chemical disaster, though low in frequency, have the potential to cause significant immediate or long-term damage.

A critical analysis of the lessons learnt from major chemical accidents exhibited various deficiencies. Laxity towards safety measures, no conformation to techno-legal regimes and a low level of public consultation are a few such shortcomings. The scenario called for concerted and sustained efforts for effective risk reduction strategies and capacity development under a national authority to decrease the occurrence of such incidents and lessen their impact. Although tremendous efforts have been made to minimize 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 minimize the damage in case of any eventuality.

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

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

11.1 Factories or Storage Unit Details of

the District Table-11.1

Organisation Name	Type (Large/Medium/Small/Micro)	Manufacturing Process & Capacity	Address	Lat/ Long	Site Operator Head Name	Site Operator Head Designation	Site Operator Head Email	Site Operator Head Mobile Number
Graphaite India Limited, Powmex Steels Division	Small	Manufacturing of square and round and rectangle section through conventional ingot rout. Capacity-350 MT PM	Graphaite India Limited, Powmex Steels division, Turla, PO-Jagua, Dist-Balangir-767033	Long	Mr. G.S.Dhir	Business Head-cum-Vice President	gsdhir@powmexsteel.com	7752019201/9437726769
Ordance Factory, Badmal, Balangir	Large	Manufacturing of Missile Bomb	Badmal, Balangir	Long	Ajay Kumar Singh	General Manager, OFBL, Badmal	ofbl@ord.gov.in	9423520580
BPCL LPG Bottling Plant, Balangir	Medium	BOCL Bottling	Balangir	Long	Ram Pradesh Dash	l/c Plant, BPCL	rmprabedas@bharatpetroleum.in	7070197760

11.2 Hazardous Chemical Storage Details Table-11.2

Hazardous Chemical Storage Points Details

Organization Name	Hazardous Chemicals/Substance Name	Hazardous Chemicals Type (Flammable/Reactive/Explosive/Toxic)	Hazardous Chemicals Quantity (Volume/Capacity/Max Qty can be Stored/Inventory)	Type of Storage (Under Ground/Submerged/On the Ground/Above Ground)	Type of Container (Spherical/Box Type/Cylindrical)	Type of Alignment (Horizontal/Vertical)	Hazard Anticipated (Fire/Explosion/Toxic release)	MSDS (Material Safety Data Sheet) of the Chemicals	Vulnerable Zone in case of Emergency (Radius in Km/Meter)	Down wind Distance	Total Number of People in Vulnerability Zone
GIL, PSD	Hydrofolic Acid, Sulfuric Acid, Nitric Acid, Acetone, Hydrocolic Acid, Carbon Tetrachloride, Lead Acetate, Berium chloride, Hydrogen Peroxide, Bromine, Ethanol, Acetic Acid	Corrosive Toxic, Flammable, Toxic, Reactive	2.5 Ltr Max. Qty stored to 20 Ltr Max. Qty Stored. 1000 gram Max. qty stored	On the Ground	Cylindrical	Vertical	Toxic Release	YES	Dispercery within 100 mtrs	250 mtrs	4
Ordance Factory, Balangr		-	-	-	-	-	-	-	-	-	-
BPCL LPG Bottling Plant, Balangr		Fire Explosive									

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

11.3

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

Statutory Compliance of the Factories/Industries

Table-11.4

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

Nearest HospitalDetailsoftheFactories/IndustrialUnits Table-

11.5

**Hospital
Details**

Orga nisati onNa me	NearestHosp itals(Govt/Pri vate)Name	Hospita lAddre ss	District Name	City	PinC ode	Lat-long	Chief MedicalOfficer/ HospitalSuperi ntendentName	Chief MedicalOffice r /HospitalSupe rintendentMo bileNumber	Chief MedicalOffice r /HospitalSup erintendentE mail	Infrastructura IFacilities
Ordanc eFactor y,Badm al	OFBL Hospital	Badmal	Balangir	Badm al		Long	Medical Officer			ICU
Graphit e India Limited, POWM EX Steels Division	SDHQ, Titilagarh	Titilagarh	Balangir	Titilag arh		Long	Medical Officer			BURNWARD

NearestFireStationoftheFactories/Industries

Table-11.6

Fire Stations

Organisation Name	Areafire stationn ame	Hospital address	District Name	City	Pinco de	Lat- long	FireOf ficerN ame	Fire OfficerDesi gnation	FireOffi cerEma il-id	FireOffi cerMobi leNumb er	Facilit iesAv ailabl e
Fire Unit, Ordance Factory, Badmal	Badmal	OFBL, Badmal	Balangir	Badmal			A.K. Mishra,	Fire Officer	-	9439147161	Fire Tender/Capa city
Fire Station, Titilagarh	Titilagarh	OFBL, Badmal	Balangir	Titilagarh			Soumya Ranjan Sethy	Fire Officer	-	9937529502	FoamMateria s

**Stakeholderstobeinformedincaseofan
IndustrialAccidentTable-11.7**

Designation	Organisation /Department name	Name	Mob ileN umb er	Office Phon e	Email
NodalOfficer, ControllingOffic er,Supervising Officer	SRC	Shri Satyabrata Sahu, IAS,SRC,R&DM, Bhuaneswar.	0674-2395398	0674-2395398	osdma@osdma.org
	OSDMA	Dr. Gyana Dash,IAS, Managing Director,OSDMA, Bhubaneswar	94373 48573	0674-2395398	osdma@osdma.org
	District Administration (Collector,EmergencyOfficer, ADM)	Shri Chanchal Rana, IAS,Collector, Balangir	94370 23381	06652-232223	dm-balangir@nic.in
	HomeDepartment	Shri Nitin Kushalkar, IPS, SP, Balangir	06652-232020	06652-232020	spblg.orpol@nic.in
	State Pollutioncontrol Board				
	RTO	Shri Rajesh Kumar Marandi, RTO, Balangir	9438860816	06652-232424	rto_bolangir@yahoo.co.in
	DepartmentofFactoriesandBoiler	Viveka Nanda Naik, Deputy Director, F&B, Balangir	70084 87929	70084 87929	
	CCSO	Mir Raja Ali	9437028148	06652-232672	cso-bol@nic.in
	NDRF	Jacob Kispata	94391 03170	0671-2879711	ori03-ndrf@nic.in
	ODRAF Unit	Atish Kumar Sahu, RI of Police, ODRAF, Balangir	88954 75053	88954 75053	
	FIRE Services	Rabindra Kumar Parida, , Asst. Fire Officer, Balangir	89080 55319		afo.bolangirfirestation@gmail.com

Chapter 12 Biological Disaster & Public Health in Emergencies

12.1 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, public health and veterinary professionals, etc., must also remain in complete preparedness for such eventualities.

Table 12.1 Nodal Departments for Managing Biological Disaster

SIN o.	Bio Disaster	Nodal Department	Contact person	Contact details (Office/ Mobile)
1	Biological Disaster	H&FW Department	CDMO (District)	94399 87100
2	BioTerrorism/ War	Home Department	SP	06652-232020
3	Animal Health Disaster	F&ARD Department	CDVO (District)	77520 92017
4	Agro-Terrorism	A&FE Department	CDAO	94372 32569

12.2 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 control over biological sample transfer, biosecurity and biosafety of materials/laboratories.

12.3 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.

12.3.1 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 12.3 CrisisManagementCommittee

SL	Member	Dept./Instt.	Contact Details
	Collector & DM	Revenue & DM	94370 23381
	CDM& PHO	Health	94399 87100
	District Emergency Officer, Balangir	Revenue & DM	9437708345
	DPHO	Health	9439987164
	ADPHO(DC)	Health	9437185167
	Epidemiologist	Health	8917457274
	Microbiologist	Health	9337260698
	Pharmacist	Health	-
	Medicine Specialist	Health	-
	MPHS	Health	-
	MPHW	Health	--
	SR Helper	Health	-

Table 12.4 TaskForce

SL	Member	Dept./Instt.	Contact Details
1	CDM&PHO, Balangir	Health	94399 87100
2	DPHO, Balangir	Health	76088 72919
3	DMO (MS) Cum Suptd, DHH, Balangir	Health	9437091694
4	Epidemiologist	Health	8917457274
5	DPM, NHM	Health	94399 87110
6	Microbiologist	Health	9337260698

Table 12.5 TechnicalExperts

SL	Member	Dept./Instt.	Contact Details
1	CDM&PHO, Balangir	Health	94399 87100
2	DPHO, Balangir	Health	76088 72919
3	DMO (MS) Cum Suptd, DHH, Balangir	Health	9437091694
4	Epidemiologist	Health	8917457274
5	DPM, NHM	Health	94399 87110
6	Microbiologist	Health	9337260698

- Apublichealthinstitutionofeminence, matchinginternationalstandardsneedstobe created,withfollowingmeasures:

- 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.

12.6 Nodal Public Health Institution

Sl	Block / Municipality	Name and Address of Health Centre	Facilities (Numbers)			Facility In-charge	
			Wards	Beds	Ventilators	Name	Contact
1.	Balangir	DHH/BBMCH Balangir	3	30	30	Dr. Mahendra Nayak	9437091694

Logistic

Sl	Block	Name and Address of the Health Centre	Personal Protective Equipments (Requirement)			Sanitizers (Requirement)	
			Gloves	Suits	Masks	Sanitizers	Disinfectants
	Balangir	DHH, Balangir	200	50	400	100	50

12.7 Collaborative Institutions

Name of the NGO/CS O/ Private Sector	Expertise	Contact Person	Contact Details (Number & Email ID)	Address
KIMS, Balangir	Covid Care	Dr. Prasanta Ratha	8249438623	Balangir

Preventive Measures

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

- An epidemiological intelligence gathering mechanism to detect 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 immunization (preventive, if available any) of first responders against anthrax and smallpox must be done to enable them to help victims' post-exposure.

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 authorized 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 12.8 Important/Critical Infrastructure

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

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 recognized 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.

12.9 Infrastructure that can be used as quarantine centres

Sl	Infrastructure/Institution Type	Dept. /Instt.	Contact person with contact Details
1	All High Schools are used for TMC /Quarantine Center	S & ME Deptt, PR Department /All BDOs	DEO/PDDRDA/ Deputy Collector (Emergency)
2			

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 are 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.

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.

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

gists, clinical microbiologists and virologists will be fulfilled over a stipulated period of time. Teaching/training institutions for these purposes will be established.

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.
- 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 BTD activities will be incorporated in the school syllabi and also at the undergraduate level in medical and veterinary colleges.

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 emphasized are:

- **Risk communication to the Community**
 - Community education/awareness about various disasters and development of Do's 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.

Medical Preparedness

Medical preparedness will be based on the assessment of bio-threat and the capabilities to handle, detect and characterize 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 hospital 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 infection control practices will include the following:
 - When dealing with biological emergencies, the health workers associated with the investigation of such exposures will have adequate personal protection.
 - Depending upon the risk, the level of protection will be scaled up from use of surgical masks and gloves, to impermeable gowns, N-95 masks or powered air-purifying respirators. They will follow laid down SOPs for use of PPE.
 - Infection control practices will be followed at all health care facilities, including laboratories.
 - Of the potential biological disaster agents, only plague, smallpox and VHF are spread readily from person to person by aerosols and require more than standard infection control precautions (gowns, masks with eye shields, and gloves).
 - The suspected victims and those who have been in contact with them will be advised to follow simple public health measures such as using masks/handkerchief tied over the nose and mouth, frequent washing of hands, staying away from other people by at least a metre, etc.
 - To handle biological disasters, a hospital DM plan will have the following facilities:
 - Medical and paramedical staff: It is important to train medical staff and paramedics properly in universal safety precautions, use of PPE, communication, triage, barrier nursing, and collection and dispatch of biological samples. A team of specialists must be made available to handle infectious diseases affecting various body systems and they will be suitably immunized 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, and 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 agar on 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 utilized 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 logistics support: Adequate, uninterrupted supply of water and electricity will be ensured for proper management of casualties. The laying down of public health standards for hospitals and strengthening of CHCs across the nation for basic specialities on 24x7 basis under NRHM by GoI are steps in the right direction to strengthen medical care facilities in rural areas. NRHM initiatives will be expedited to reach every nook and corner of the country.

Chapter 13
Preparedness

13.1 Relief Lines: District to Blocks

Sl. No	Name of the Road		Type of Road & Length	Vulnerability of the route (Description of the Vulnerability)	Coverage (Blocks)
	From	To			
1	Balangir	Titilagarh	NH 26 - 42 Kms ODR/MDR - 28 Kms	<ul style="list-style-type: none"> • Small Culvert in between Khulan and Naren village. • Forest Rout from Siker to Badmal where road blockage may be occurred. 	Balangir, Deogaon, Saintala, Titilagarh
2	Balangir	Bangomunda	SH 42 - 95 Kms	<ul style="list-style-type: none"> • Forest Rout from Mutkhai to Dhamandanga where road blockage may be occurred. 	Balangir, Patnagarh, Belpada, Bangomunda
3	Balangir	Puintala	NH 57 - 3.5 Kms	<ul style="list-style-type: none"> • Railway crossing at Sudhbada, Balangir 	Puintala
4	Balangir	Agalpur (Duduka)	NH 26 - 31 Kms ODR/MDR - 7 Kms	<ul style="list-style-type: none"> • Small culvert nearby Siva Temple Babu Fasad • Small culvert nearby Salebhata (3 Kms after Salebhata) 	Balangir, Loisingha, Agalpur
5	Balangir	Khaprakhol	SH 42 Kms (Patnagarh) ODR/MDR - 28 Kms	<ul style="list-style-type: none"> • Small culvert nearby Jogimunda and Bhatharla. • Forest Rout from Bhatharla to Khaprakhol where road blockage may be occurred. 	Balangir, Patnagarh, Khaprakhol
6	Balangir	Gudvela	NH 26 - 22 Kms (via Deogaon Airstrip Rd) ODR/MDR - 23 Kms	<ul style="list-style-type: none"> • Nearby Dungipali, road may be washed ways due to flood in Tel River. 	Balangir, Deogaon, Dudvela

13.3 Resources Available: Response Force & Volunteers

Sl. No	Response Force/	Capacity (In Nos.)	No. of trained person			Name of Nodal Person	Contact Details (Mobile/Phone)
			Search /Rescue	First Aid	Relief line Clearance		
1	NDRF	-	-			Jacob Kisporta	09439103170
2	ODRAF	50	39			Atish Kumar Sahu, RI, OP	88954 75053
3	Police	848	848			Shri NitinKusalkar, IPS	06652-232020
4	Fire	184	184			Rabindar Kumar Parida	06652-232333
5	Home Guards	557	236			Shri Nitin Kusalkar, IPS	06652-232020
6	Civil Defense	0	0			-	-
7	NCC	1200	500			Co Kedar Nath Sahu	06652-250755
8	NSS	1500	600			Ajit Ku Bhoi	9937382911
9	NYK	300	80			Narasimha Kumar	7032910269
10	Trained Task Force	0	0			0	0
11	Aapada Mitra Volunteers	300	300			Ms. Shubhasmita Mishra, OAS	9437708345

13.4 Preparedness at District level

All the actions mentioned above are to be carried out by different departments/agencies participating in the District Disaster Management Plan. It is necessary that all the departments have well defined standard operating procedures and preparedness checklists. It is absolutely important that all the departments / agencies are very familiar with the overall plan and the procedures specifically applicable to them and report diligently upon their implementation. The Standard Operating Procedures (SOPs) of various departments at district level and given as under:

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

13.5 Preparedness at Community Level

Task	Activity
Early Warning Dissemination	<ul style="list-style-type: none"> ➤ Build regular linkages with BEOC & DEOC ➤ Test Check of various Equipment at shelter level & repair of the defective ones ➤ Keep updates from BEOC/DEOC ➤ Monitor & Transmit updates to BEOC ➤ Supply required information to BEOC & DEOC
Ensuring Preparedness	<ul style="list-style-type: none"> ➤ Have a list of Nodal person deployed in the village with contact details ➤ Identification of safer routes & shelters ➤ Identify possible ways to reach persons like Farmers/Fisherman/NTFP collectors etc. who ventures into fields, sea & forest respectively ➤ 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
	<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 Nos. & display it in Centre places. ➤ Participate in the activities of Preparing village Disaster Management, developing Safety plans, Capacity building Programmes & Mock Drills

13.6 Preparedness at Family Level

Task	Activity
Warning Communication	<ul style="list-style-type: none"> ➤ List the minimum Important requirements Keep all the important Documents in a water proof polythene ➤ Record the Safe & alternative routes to shelter ➤ Keep News update in Radio/TV

Preparedness	<ul style="list-style-type: none"> ➤ Always keep in readiness a “Ready to go Emergency Kit” containing Dry food (for 72 hours x Family member), Drinking water (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

13.7 Preparedness at Individual Level

Task	Activity
Early Warning Dissemination	<ul style="list-style-type: none"> ➤ List & keep a ready to go minimum Important requirements ➤ Record the Safe & alternative routes to shelter ➤ Keep News update in Radio/TV
Ensuring Preparedness	<ul style="list-style-type: none"> ➤ Every individual/children must have a Personal Identity information like a copy of Aadhar card/ Voter ID / School Identity Card & Contact 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

13.8 Preparedness of Departments

The Government departments playing lead or support roles in disaster preparedness are:

Name of the Department	Normal Time
Collector/ADM/ Emergency Officer	<ul style="list-style-type: none"> ➤ Ensure regular meetings of District Disaster Management Authority ➤ Develop & update Disaster Management Plan, carry out Hazard analysis in the district ➤ Identify safe alternate routes to cyclone shelters. ➤ Keep a list of Contacts of EoCs, Nodal officer of different departments, Important stake holders, Village leaders, shelters ➤ List of Relief lines & storage places ➤ List & maintenance of SAR equipment ➤ Capacity building of stakeholders & volunteers ➤ Asses preparedness through Mock Drills for different disasters at district department, block & community level ➤ Adopt sustainable mitigation measures ➤ Integrate DM & DRR features in development programmes
CDMO	<ul style="list-style-type: none"> ➤ Disaster Management Plans & Safety plans for Hospitals ➤ Capacity building of Medical & Para Medical Staffs ➤ Assess preparedness through Mock Drills & familiar exercises ➤ Integrate department plans with plans with Village & Block Plans and development programmes ➤ Develop media partnership ➤ Develop capacity of hospitals with advance equipment, proper manning & disaster resilient infrastructures ➤ Stock piling of Life saving drugs/ORS packets/Halogen tablets on receipt of warning from the Collector/DCR ➤ Transmission of messages to all PHCs to stock medicines and keep the medical staff ready ➤ Disease surveillance and transmission of reports to the higher authorities on a daily basis. ➤ Vaccination. ➤ To obtain and transmit information on natural calamities from the DCR ➤ Advance inoculation programme in the flood/Cyclone prone areas. ➤ Ensuring distribution of areas of operation among the mobile team. ➤ Pre-distribution of basic medicines to the people who are likely to be affected ➤ Shifting the patients who are in critical situation to the District Hospital ➤ Awareness messages to stop the outbreak of epidemics ➤ Conducting mock drills

<p>Superintendent of Police (SP)</p>	<ul style="list-style-type: none"> ➤ Reception of Warning from the DCR ➤ Communication establishment with District and Block/Tahasil Control rooms and departmental offices within the division. ➤ Alerting the APR force for deployment at the time of calamity ➤ To issue directive to police field functionaries to co-operate with Revenue Personnel in management of Relief operation.
<p>EE- RWSS</p>	<ul style="list-style-type: none"> ➤ Review and update precautionary measures and procedures and review with staff the precautions that have been taken to protect equipment. ➤ Within the affected block, all available personnel will be made available to the District Magistrate. If more personnel are required then out of station official or those on leave may be recalled. ➤ Prepare plans for water distribution to all transit and relief camps, affected villages and cattle camps and ensure proper execution of these plans. ➤ Inform people to store an emergency supply of drinking water ➤ Investigation of alternate of water and its supply. ➤ Standby diesel pumps or generators should be installed in damage-proof buildings. ➤ A standby water supply should be available in the event of damage, saline intrusion or other pollution of the regular supply. ➤ Establish procedures for the emergency distribution of water if existing supply is disrupted. ➤ Make provisions to acquire tankers and establish other temporary means of distributing water on an emergency basis. ➤ Make provision to acquire containers and storage tanks, required for storing water on an emergency basis. ➤ Protect pump stations from water logging. ➤ Repair sewage lines where damage is detected. ➤ Repair water pipelines wherever damaged.
<p>EE- Irrigation</p>	<ul style="list-style-type: none"> ➤ Check the wireless network and ensure that all the flood stations are connected. ➤ Establish mechanisms for exchange of information with irrigation divisions ➤ Inspect all the Bundhs, and check their height and slope. ➤ Check the top of the Bundhs, and if they have been cleared of encumbrances / encroachments and if they are motorable ➤ Check that all the Bundhs have been repaired/ reinforced, in particular those Bundhs which were damaged during the last floods. ➤ Check the drainage system of the Bundhs and ensure that the seepage and rat holes, etc. have been closed. ➤ Check that all the materials required for protecting Bundhs have been stored at different places, and a list of these places has been furnished to the district administration ➤ Check that the Junior engineers and other staff have been assigned their beats, and all the

	<ul style="list-style-type: none"> ➤ Arrangements for continuous vigilance over these Bundhs have been made. ➤ Check that all rain gauge stations are functional, and arrangements have been made to report the readings. ➤ Check the regulators and siphons. Check that they have been repaired and cleaned, increasing the flow of water. ➤ Check all the anti-erosion works, necessary to maintain the Bundhs.
DAO- Agriculture	<ul style="list-style-type: none"> ➤ Review and update precautionary measures and procedures. ➤ Check available stocks of equipments and materials which are likely to be most needed during and after flood/disaster. ➤ Stock agricultural equipments which may be required during and after flood. ➤ Determine what damage, pests or disease may be expected, and what drugs and other insecticide items will be required, in addition to requirements of setting up extension teams for crop protection, and accordingly ensure that extra supplies and materials, be obtained quickly. ➤ All valuable equipments and instruments should be packed in protective coverings and stored in room the most damage-proof. ➤ Ensure that certified seeds of required varieties are available in adequate quantities. ➤ Develop a pest and disease monitoring system so that timely steps can be taken to reduce damage to crops. ➤ A pests and disease monitoring system should be developed to ensure that a full picture or risks is maintained. ➤ Plan for emergency accommodations for agriculture staff from outside the area. ➤ Extension Officers should be unplugged when flood/disaster warning is received.
EE- Rural Works	<ul style="list-style-type: none"> ➤ Govt. buildings should be inspected and necessary repairs to be got executed to with standing hazards affected. ➤ Script for slides, pamphlets, and cultural programmers should be got prepared immediately. ➤ Arrangements should be made to obtain poster and films by addressing the Director through the Collectors. ➤ Public addresses equipment should be obtain kept ready. ➤ The community Radio sets available in the coastal villages should be ascertained ➤ The names of Hamlets where they are not available to be reported. ➤ The public should be fully educated regarding the precautionary measures & after cyclone through available media. ➤ Specific duties should be assigned to the field staff. ➤ The field staff should proceed to the place of work allotted and be ready to attend to cyclone duty.
EE- Public Works	<ul style="list-style-type: none"> ➤ All personnel required for disaster management should work under the overall supervision and guidance of DM. ➤ Review and update precautionary measures and procedures, and review with staff the precautions that have been taken to protect equipment. ➤ Vehicles should be inspected, fuel tanks filled and batteries and electrical wiring covered as necessary. ➤ Extra transport vehicles should be dispatched from headquarters and stationed at safe strategic spots along routes likely to be affected.

	<ul style="list-style-type: none"> ➤ Heavy equipments, such as front-end loaders, should be moved to areas likely to be damaged and secured in a safe place. ➤ Clean the area beneath bridges regularly for smooth flow of water excess. ➤ Maintain all the highways and access roads, which are critical from the point of view of supplying relief. ➤ Inspect all buildings and structures of the state government (including hospital buildings.) by a senior engineer and identify structures which are endangered by the impending disaster. ➤ The designation of routes strategic to evacuation and relief should be identified and marked, in close coordination with police and District Control Room ➤ Establish a priority listing of roads which will be opened first. Among the most important are the roads to hospitals and main trunk routes ➤ Work under construction should be secured with ropes, sandbags and covered with tarpaulins if necessary. ➤ Construct/ reinforce the connecting roads from villages to roads, canals and Bundhs and raise their level so that people can access the high ground. ➤ Inspection of old buildings and suggesting retrofitting of weak buildings/ demolition of dangerous structures and evacuation of population. ➤ Carry out route opening by removing debris on the road. ➤ Begin clearing roads. Assemble casual labourers to work with experienced staff and divide them into work gangs.
<p>DTO-Telecom</p>	<ul style="list-style-type: none"> ➤ Assess the different disaster scenarios and match the communications needs with the available resources. ➤ Ensure that TSPs (private and public) invest in preventive measures that will ensure maximum robustness and preparedness of the telecom networks during emergencies. ➤ Ensure that TSPs (private and public) develop detailed emergency plans for management of resources under their responsibility. ➤ Conduct annual reviews of the ETP/SOP - Organize annual symposium on telecommunications availability during emergency. – ➤ Update the communications plan according to development and innovations in emergency telecommunications systems. ➤ Disseminate information among the Public and the district administration on the availability of telecom services and equipment's for use during emergencies.
<p>CDVO</p>	<ul style="list-style-type: none"> ➤ Call for emergency meeting to take stock of the situation. Develop a strategy and objectives. Review and update precautionary measures and procedure and review with staff the precautions that have been taken to protect equipments. ➤ Prepare a list of water borne diseases that are preventable by vaccination. ➤ Publicize the information about common diseases afflicting livestock and the precautions that need to be taken. ➤ Assist the Revenue Department in preparing plans for cattle campus and cattle feeding centers.

	<ul style="list-style-type: none"> ➤ Stock emergency medical equipments which may be required during and post disaster Surgical packs should be assembled and sterilized. ➤ Enough stock of surgical packs should be sterilized to last for four to five days. ➤ The sterilized surgical packs must be stored in protective cabinets to ensure that they do not get wet. Covering the stock with polythene is recommended as an added safety measure. ➤ All valuable equipments and instruments should be packed in protective coverings and stored in room the most damage-proof. ➤ All electrical equipments should be unplugged when disaster warning is received. ➤ Organize vaccination campaigns in disaster prone villages before, during and after the disaster. ➤ Prepare kits for veterinary diseases, which could be provided to veterinary doctors at the block level and extension officers at the village level. Kits can also be provided to the private veterinary doctors. ➤ Arrange for emergency supplies of anesthetic drugs. ➤ Check stocks of equipments and drugs which are likely to be most needed during and after disaster. ➤ Fill department vehicles with fuel and park them in a protected area. ➤ Fill hospital water storage tanks and encourage water savings. If no storage tanks exist water for drinking should be drawn in clean containers and protected. ➤ Prepare an area of the hospital for receiving large number of livestock. ➤ Develop emergency admission procedures (with adequate record keeping). ➤ Establish cattle camps and additional veterinary aid centres at affected sites and designate an Officer In-charge for the camp. ➤ Estimate the requirement of water, fodder and animal feed, for cattle camps and organize the same. ➤ Ensure that adequate sanitary conditions through cleaning operations are maintained in order to avoid outbreak of any epidemic. ➤ An injury and disease monitoring system should be developed, to ensure that a full picture of risk is maintained. ➤ Plan for emergency accommodations for veterinary staff from outside the area.
RTO/MVI	<ul style="list-style-type: none"> ➤ Prepare a list of vehicles- trucks, buses, jeeps, tractors, etc of government and private agencies in the district and provide the list to the District control room. ➤ Provide requires vans and ambulances for mobile health and animal husbandry teams. ➤ Provide trucks, buses, jeeps, tractors, etc for evacuation and supply chain management ➤ Issue standing instructions to the State transport department for providing buses for evacuation and relief. ➤ Recall important functionaries from leave; communicate to the staff to man their places of duties like the ward and divisional offices and respective departments. ➤ Call for emergency meeting to take stock of the situation. Develop a strategy and objectives.

DFO	<ul style="list-style-type: none"> ➤ Develop and quarterly update the disaster management plan that includes the Contingency Action Plan for the Department based on HVRC analysis with the active involvement of all concerned line departments and local bodies in the district ➤ Make personnel available to the District Magistrate, within the affected block,. If more personnel are required, recall those on leave. ➤ Identify areas that could be opened or made available for grazing or fodder collection in case of disaster ➤ Ensure that adequate supply of small poles or bamboo is available for reconstruction of houses of the affected people, as well as wood for cremation of dead. ➤ Ensure plantation to the maximum possible extent.
Railway	<ul style="list-style-type: none"> ➤ Identification of flood prone areas, RAT, RAW and information prone to erosion/breaches and marking them on railways system map. ➤ Development of Flood Shelters for staff and passenger at suitable locations in the areas prone to repeated floods ➤ Study of changed water catchment area due to construction of highways, Dams. ➤ Study of changed rainy season month on a particular region. ➤ Action Plan for Alignment, Location, Design and Provision of Waterway on Railways Embankments ➤ Inspections of Railway Affecting Works – to be streamlined and timely ensured. ➤ Review of waterways for adequacy and alignment and measures to modify, if needed. ➤ Status Note on the lessons learnt from the previous flood situations in the past 5 years. ➤ Bye-laws for buildings in flood plains. ➤ Making existing and new buildings and infrastructure capable of withstanding fury of floods.
EE- Electricity/TPWODL	<ul style="list-style-type: none"> ➤ Review and update precautionary measures and procedures and review with staff the precautions that have been taken to protect equipment. ➤ Ensure that the Power Supply department to make alternate arrangements of emergency supply for the major offices from time of receipt of districts ➤ Check emergency tool kits, assembling any additional equipment needed. ➤ After receiving alert warning, immediately undertake following inspection of High tension lines, Towers, Sub-stations, Transformers, Insulators, Poles and other equipments ➤ Instruct district staff to disconnect the main electricity supply for the affected area. ➤ Protect Power Stations from disaster. Raise the height of compound walls. Arrange gunny bags. Install pump sets for draining water in case of Flood/ Cyclone/ Tsunami, ➤ etc. ➤ Provide information to the people about the state of power supply. It is one of the most important sources of information. Establish temporary electric supplies to other key public facilities, public water system etc. to support emergency relief.

	<ul style="list-style-type: none"> ➤ Establish temporary electric supplies to transit camps feeding centres, relief camps and Site Operation Centre, District EOC and on access roads to the same. ➤ Establish temporary electric supplies for staging area. ➤ Compile an itemized assessment of damage, from reports made by various electrical receiving centres and sub-centres.
EE – PHED	<ul style="list-style-type: none"> ➤ Formation of Disaster Management Cell and manning with senior personnel drawn from key sections of the dept. ➤ Formulation of Public Health Engineering related programme and activities by intonating them with hazard specific preventive and mitigation measures. ➤ Creation of stocks of installation materials at the district level for use in emergencies. ➤ Orientation and training of a team of technicians to do installation as quickly as possible. ➤ Strategizing the installation of hand-pumps etc. with hazard profile of the area in mind. ➤ In consultation with the Department of Education and DMD, provision of additional sanitation and drinking water facilities in schools and relief shelters where people take refuge during flood. ➤ In consultation with the Department of Disaster Management making special arrangements for the supply of drinking water in drought prone areas. ➤ Planning for repair and maintenance of the facilities created as a part of the programme and activities. ➤ Keeping a track of groundwater level and having a fresh look at the facilities created accordingly. ➤ Organizing interaction with Gram Panchayats for having proper sanitation facilities, and providing them support and guidance in planning, implementation and maintenance of the same. ➤ Procurement, upkeep and maintenance of sanitation equipment for use in emergencies.

<p>DPS, SSA- School & Mass Education/ DEO - Higher Secondary Education</p>	<ul style="list-style-type: none"> ➤ Formation of Disaster Management Cell and manning the same by senior personnel drawn from key Directorates. ➤ Incorporating costs for preventive and mitigation measures for earthquake, flood, fire and cyclonic storm prone areas to construct disaster resistant school buildings. ➤ In association with Fire Dept. getting fire extinguishers installed in schools and teachers identified and trained in operating them. ➤ Awareness Generation Programmes about Hazard, the kind of preparedness required and how to act at the time of disaster shall be organized in schools on monthly basis. ➤ Disaster Management shall be made a part of the school curriculum. ➤ The Department shall get quality films made on hazard wise disaster preparedness and organize their viewing by children and their parents. ➤ The Department shall in association with Nehru Yuva Kendra organize locality based youth clubs and get them groomed in escort services, relief work and taking care of children, women, old and sick. ➤ Making adequate arrangements for getting hand pumps installed, storage facilities created, toilet and bathrooms built in those schools where communities do take shelter during flood. Concerned departments shall either make the arrangements or make funds available for the same.
<p>BDO/Tahasildar</p>	<ul style="list-style-type: none"> ➤ Providing authentic information required by the DCR ➤ Preparing a record of previous disasters in the locality and analyzing the effects ➤ Preparing hazard maps of the Block./Tahasil & the GPs in minute details ➤ Mapping the cut off areas with alternate route map. ➤ Identification of shelter places in the maps ➤ Keeping a List of storage Points & facilities available, dealers of foodstuffs. ➤ Keeping a list of vulnerable people and area and weak points on embankments (if applicable) ➤ Creating a Control Room at the respective level and assignment of duties to the staff. ➤ Pre-positioning of staff for site operation centers. ➤ Uninterrupted communication with the DCR ➤ Arrangement of alternative communication/generator sets, etc ➤ Formation of GP/village level disaster committees and task forces ➤ Arrangement of boats on hire available locally. ➤ Deployment of Boat in the most vulnerable areas. ➤ Organizing awareness camps at GP/village levels ➤ Dissemination of Warning: ➤ Crosschecking with the DCR for the authenticity of the warnings ➤ Arrangement or requisition of Jeeps/Trekkers/ Auto Rickshaw to disseminate received warning information's to the population of vulnerable / weak places ➤ Dissemination of warning/ coordination with District control room. ➤ Warning the people about probable affected areas ➤ Mobilizing the people to leave for identified shelters with their domestic animals and personnel belongings.

Chapter-14 Response

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

All the disaster response activities will be undertaken by the District Magistrate of Balangir with all the resources at their command will facilitate the district administration. However, preparedness to response will be the responsibility of the authorities themselves that they will carry out in close coordination with the district administration during pre-disaster phase. Balangir district is vulnerable to the following hazards:

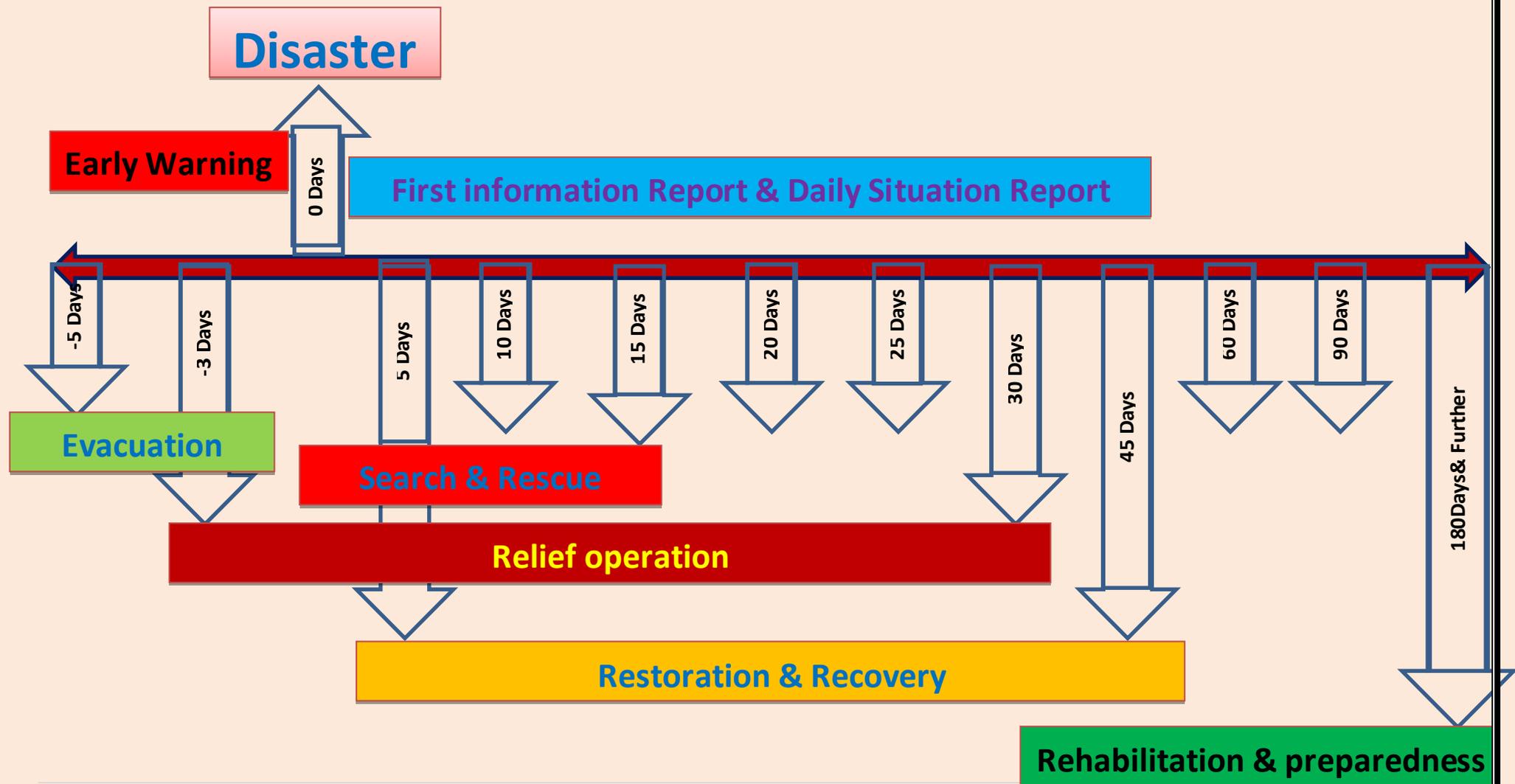
- Drought
- Heat waves
- Floods
- Fire
- Epidemics
- Lightening

The need for an effective disaster management strategy is to lessen disaster impact which can be achieved through strengthening and reorienting existing organizational and administrative structure from district to block and GP levels. The emergency response plan is a first attempt to follow a multi-hazard approach to bring out all the disasters on a single platform and incorporates the 'culture of quick response'. Under the plan, common elements responsible for quick response have been identified and a set of responsible activities has been articulated. It provides a framework to the primary and secondary agencies and departments, which can outline their own activities for disaster response. The plan will also include specific disaster action plans along with modal scenarios in detail to conduct practice drills at district administration level.

14.1 Phases of Response: Timeline

Timeline of various phases of response is presented in the following diagram.

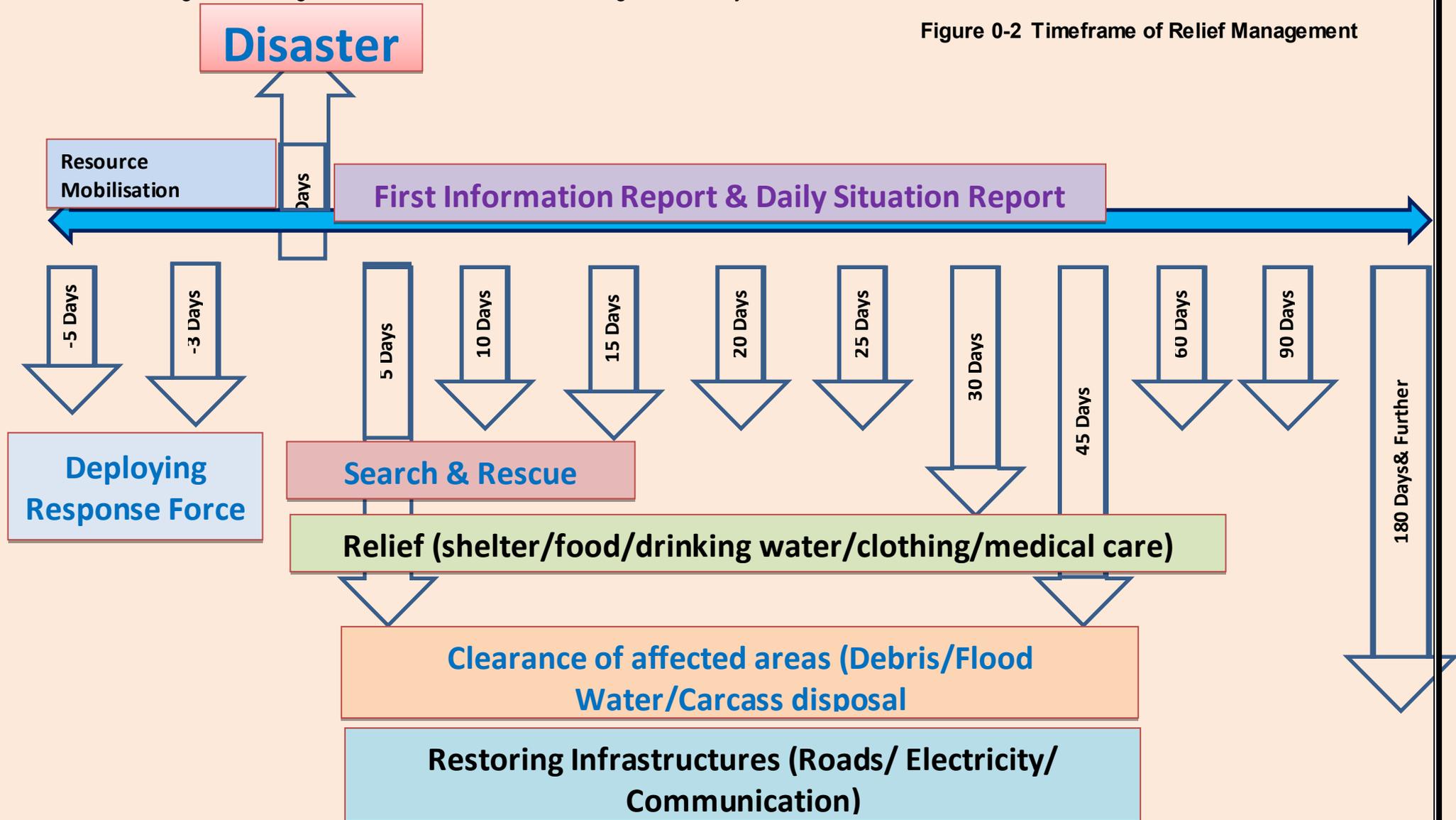
Figure 0-1 Timeline of various phases of response



Relief Management: Timeline

The relief management along with the time frame allotted is diagrammatically reflected below.

Figure 0-2 Timeframe of Relief Management



14.2 Response: District

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

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

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

Response: Family & Individual Level

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

14.4 Response: Standard Operating Procedures for Departments

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

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

	<ul style="list-style-type: none"> ➤ Will be in constant touch with the local IMD and other agencies in the district for information on impending disaster. 	<p>sewer pipes and drainage are kept separate from drinking water facilities.</p> <ul style="list-style-type: none"> ➤ Will ensure availability of adequate number of toilets to prevent further contamination of water sources. 	<p>informed on measures taken by RWSS / PHED for an effective disaster response.</p>
EE- Irrigation	<ul style="list-style-type: none"> ➤ When early signs of distress appear in any part of the district, EE Irrigation will submit a special situation update to DM indicating the position in respect of Irrigation preparedness in the district. ➤ Prepare and update the disaster risk map of the district. The map should show the vulnerability and risks of the critical infrastructure related to irrigation and also whether alternate source of H2O within the district. ➤ Prepare a contingency plan for the maintenance and repairs of Bundhs and embankments. ➤ Identify Bundhs, which are critical for disaster protection and control. ➤ Review and update precautionary measures and procedures. 	<ul style="list-style-type: none"> ➤ Will ensure availability of adequate number of tool kits to prevent any damage during disaster. ➤ Provide special attention to those places where the Bundhs were breached and repaired during the last floods/disaster last year. These are the Bundhs, which will be threatened first during the disaster. ➤ Deployed adequate team in the most vulnerable areas. 	<ul style="list-style-type: none"> ➤ Undertake channel improvement for rivers and nalas to the extent possible. Undertake de-silting / cleaning of Nalas and canals to improve the flow of water. ➤ Supply the essential tool kits and protection material at critical places for emergency repair and construction. ➤ Organize round the clock inspection and repair of equipments.
DAO- Agriculture	<ul style="list-style-type: none"> ➤ Prepare HRV Analysis of the district. ➤ Develop Contingency Action Plan based on HRV analysis. ➤ Review and update precautionary measures and procedures. ➤ Check available stocks of equipments and materials which are likely to be most needed during and after disaster 	<ul style="list-style-type: none"> ➤ Supply of agricultural equipments which may be required during Disaster. ➤ All valuable equipments and instruments should be packed in protective coverings and stored in room the most damage- 	<ul style="list-style-type: none"> ➤ Suggest variety of seeds and cropping pattern, which can reduce losses and reduce the risks to farmers ➤ Plan for emergency accommodations for agriculture staff from outside the area. ➤ A pests and disease monitoring

	<ul style="list-style-type: none"> ➤ 6. Provision of agricultural services should be coordinated with irrigation department, DRDO, District EOC, SITE OPERATIONS CENTRES. 	<p>proof during disaster</p> <ul style="list-style-type: none"> ➤ All electrical equipments should be unplugged during disaster period. 	<p>system should be developed to ensure that a full picture or risks is maintained.</p> <ul style="list-style-type: none"> ➤ Call for emergency meeting to take stock of the situation. Develop a strategy and objectives. ➤ Establish contact with soil and water testing laboratories.
EE- Rural Works	<ul style="list-style-type: none"> ➤ When early signs of distress appear in any part of the district, EE Rural works will submit a special situation update to DM indicating the position in respect of rural works preparedness in the district. ➤ Prepare and update the disaster risk map of the district. The map should show the vulnerability and risks of the critical infrastructure related to rural areas. ➤ Ensure community involvement in disaster preparedness on: Risk assessment (to point to which measures to implement); Early warning systems; Life safeguarding equipment; Resources and emergency kits in anticipation of need; Maintaining emergency rosters and evacuation plans; Emergency information and communication systems; Capacity building to ensure adequate emergency response. 	<ul style="list-style-type: none"> ➤ Will ensure availability of adequate number of tool kits to prevent any damage during disaster. ➤ Provide special attention to those places which were most vulnerable areas during disaster last year.. ➤ Deployed adequate team in the most vulnerable areas. ➤ Provide for preventive medication for entire livestock to check the spread of any disease among the surviving cattle. ➤ Ensure the rural communication system and shelter management process during disaster. 	<ul style="list-style-type: none"> ➤ Provide for agricultural rehabilitation of disaster affected area by necessary assistance, with the help of state government, to affected farmers in activities such as sowing/harvesting. ➤ Make available requisite seeds and fertilizers free of cost to the farmers, of course, with the help of concerned government departments. ➤ Provide agricultural equipment/tools through Banks and other funding agencies. ➤ Help in rehabilitation of artisans and marginal businessmen affected due to the disaster. ➤ Make efforts to re-start schools as soon as possible and encourage children to attend school regularly. ➤ Rehabilitation of livestock affected due to the disaster; Ensure replacement of mulch

			cattle to the affected farmers;— Free cattle feed for about 2 to 3 months.
EE- Public Works	<ul style="list-style-type: none"> ➤ Conduct HRV analysis of PWD of the district. ➤ Based on HRV analysis, prepared Contingency Action Plan for the Department. ➤ All personnel required for disaster management should work under the overall supervision and guidance of Deputy Commissioner. ➤ All officers (technical officers) should be notified and should meet the staff to review emergency procedures. ➤ Review and update precautionary measures and procedures, and review with staff the precautions that have been taken to protect equipment. ➤ Maintain all the highways and access roads, which are critical from the point of view of supplying relief. 	<ul style="list-style-type: none"> ➤ Carry out route opening by removing debris on the road. ➤ Provide a work team carrying emergency tool kits, depending on the nature and extent of the disaster, essential equipments to the disaster spot. ➤ If people are evacuating an area, the evacuation routes should be checked and people assisted. ➤ Construct/ reinforce the connecting roads from villages to roads, canals and Bundhs and raise their level so that people can access the high ground during disaster. 	<ul style="list-style-type: none"> ➤ Undertake repair of all paved and unpaved road surfaces including edge metalling, pothole patching and any failure of surface, foundations in the affected areas by maintenance engineer's staff and keep monitoring their conditions. ➤ Undertake construction of temporary roads to serve as access to temporary transit and relief camps, and medical facilities for flood victims. ➤ As per the decisions of the District Control Room, undertake construction of temporary structures required, for organizing relief work and construction of relief camps, feeding centres, medical facilities, cattle camps and SITE OPERATIONS CENTRES. ➤ An up-to-date report of all damage and repairs should be kept in the district office report book and communicate the same to the District Control Room.

<p>DTO-Telecom</p>	<ul style="list-style-type: none"> ➤ Communication establishment with District and Block/ Tahasil control room and departmental officers within the division. ➤ An officer to be appointed as nodal officer ➤ Standby arrangements for temporary electric supply or generators. ➤ Inspection and repair of poles etc. ➤ Identification of materials required for response operations. ➤ All staff informed about the disasters, likely damages and effect 	<ul style="list-style-type: none"> ➤ Where Disaster strikes with/ without early warning signals, TSPs shall immediately assess damage to their network and deploy Rapid Damage Assessment Team & Disaster Response Task Force Teams (DRTF) with required inventory to provide emergency communication to priority callers like police, Fire, Medical, civil defense, Red Cross, Army, financial institutions, NGOs, all officers and staffs engaged in restoration of telecommunication services, etc ➤ A control room will be setup at the state HQ / nearest to affected area, as the case may be, and made operational under control of TERM cell of affected area. 	<ul style="list-style-type: none"> ➤ If required portable / vehicle mounted / air-transportable BTSs / BSCs with backhaul on satellite media may be installed by TSPs. ➤ Nodal officer of TSPs of affected telecom circle level shall report to concerned DDG (TERM), DoT (Chairman of STDCC) in that circle, for sharing information and coordination related matters. ➤ TERM units of DOT shall be the single nodal point in the disaster region where representatives of TSPs shall also be present to coordinate and oversee communication restoration efforts ➤ All the affected areas and infrastructure will maintained immediately to make sure the effective communication after disaster for quick response.
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CDVO	<ul style="list-style-type: none"> ➤ Prepare HRV Analysis of Animal Husbandry Department of the District. ➤ Based on HRV Analysis, prepare Contingency Action Plan of the District. ➤ All personnel required for Disaster/Flood Management should work under supervision and guidelines of District Magistrate. ➤ Call for emergency meeting to take stock of the situation. Develop a strategy and objectives. ➤ Review and update precautionary measures and procedure and review with staff the precautions that have been taken to protect equipments. ➤ Stock emergency medical equipments which may be required during and post disaster 	<ul style="list-style-type: none"> ➤ . Supply stocks of equipments and drugs which are likely to be most needed during the disaster. ➤ Fill department vehicles with fuel and park them in a protected area. ➤ Prepare an area of the hospital for receiving large number of livestock during disaster. ➤ Distribute the requirement of water, fodder and animal feed, for cattle camps and organize the same. ➤ Ensure that adequate sanitary conditions through cleaning operations are maintained in order to avoid outbreak of any epidemic during disaster. 	<ul style="list-style-type: none"> ➤ Post Disaster Disease surveillance system ➤ Special attention to vulnerable section ➤ Assist the Revenue Department in preparing plans for cattle campus and cattle feeding centers. ➤ Organize vaccination campaigns in disaster prone villages after the disaster.
RTO/MMI	<ul style="list-style-type: none"> ➤ Disseminate the alert to all concerned staff. ➤ Prepare a list of vehicles- trucks, buses, jeeps, tractors, etc of government and private agencies in the district and provide the list to the District control room. ➤ Issue standing instructions to the State transport department for providing buses for evacuation and relief. ➤ Recall important functionaries from leave; communicate to the staff to man their places of duties like the ward and divisional offices and respective 	<ul style="list-style-type: none"> ➤ Provide requires vans and ambulances for mobile health and animal husbandry teams for immediate response during disaster. ➤ Provide trucks, buses, jeeps, tractors, etc for evacuation and supply chain management. ➤ Fill department vehicles with fuel and park them in a protected area. 	<ul style="list-style-type: none"> ➤ Providing vehicles for communication and relief. ➤ Provide ambulances to rural areas for bringing affected people to hospitals after disaster.

	<p>departments.</p> <ul style="list-style-type: none"> ➤ Call for emergency meeting to take stock of the situation. Develop a strategy and objectives. 		
DFO-	<ul style="list-style-type: none"> ➤ Conduct HRV analysis of Forest of the district. ➤ Based on HRV analysis, prepared Contingency Action Plan for the Department. ➤ All personnel required for disaster management should work under the overall supervision and guidance of Deputy Commissioner. ➤ All district level officials of the department would be asked to report to the Deputy Commissioner when disaster occurs ➤ Emergency tools kits should be assembled for each division, and should include: Crosscut saws, Axes, rope. 	<ul style="list-style-type: none"> ➤ Allow the transportation of fodder from forest areas, when the fodder is not freely available. ➤ Evacuate the people and animal under the forest areas to a safest place. ➤ Cut down the most vulnerable trees near the residential areas. ➤ Provide wooden poles and bamboo for temporary shelter. 	<ul style="list-style-type: none"> ➤ Ensure Plantation to maximum possible extent. ➤ Ensure supply of wood for disposal of dead bodies. ➤ Recall important functionaries from leave; communicate to the staff to man their places of duties like the ward and divisional offices and respective departments. ➤ Call for emergency meeting to take stock of the situation. Develop a strategy and objectives.

Railway	<ul style="list-style-type: none"> ➤ Overall coordination with the district administration for disaster response. ➤ Disseminate the alert to all concerned staff. ➤ Call for emergency meeting to take stock of the situation. Develop a strategy and objectives. ➤ Prepare and update the disaster risk map of the district. The map should show the vulnerability and risks of the critical infrastructure related to railway lines. 	<ul style="list-style-type: none"> ➤ Activate Search & Rescue ➤ Arrange temporary shelters ➤ Mass Casualty Management units & Triage ➤ First Aid Centers ➤ Medical surgical teams ➤ A control room will be setup at the district HQ / nearest to affected area, as the case may be, and made operational under control of TERM cell of affected area. 	<ul style="list-style-type: none"> ➤ Providing necessary information to public. ➤ Clearing the railway line blockages and restoration of the communication system. ➤ Providing relief line to the vulnerable areas after disaster. ➤ Special attention to vulnerable section.
EE- Electricity	<ul style="list-style-type: none"> ➤ Conduct HRV analysis for the department of the district. ➤ Based on HRV analysis, prepare Contingency Action Plan of department of Power Supply. ➤ All personnel required for disaster management with work under the overall supervision and guidance of responsible officer. ➤ Establish radio communications with State Emergency Operation Centre, Divisional Commissioner, District Control Room and your departmental offices within District/Division. ➤ After receiving alert warning, immediately undertake following inspection: High tension lines ,Towers ,Sub-stations ,Transformers ,Insulators , Poles and Other equipments. 	<ul style="list-style-type: none"> ➤ Instruct district staff to disconnect the main electricity supply for the affected area. ➤ Dispatch emergency repair groups equipped with food, bedding, tents, and tools. ➤ Protect Power Stations from disaster. Raise the height of compound walls. Arrange gunny bags. ➤ Install pump sets for draining water in case of Flood/ Cyclone/ Tsunami, etc. ➤ Provide information to the people about the state of power supply. It is one of the most important sources of information. 	<ul style="list-style-type: none"> ➤ Ensure that the Power Supply department to make alternate arrangements of emergency supply for the following offices from time of receipt of districts: Hospitals ,Public Health Departments , Deputy Commissioner Office, District EOC, Sub-Divisional EOC, site Operation Centres. , Police Stations , Telecommunications buildings , Meteorological stations. Irrigation Office. ➤ Hire casual labourers on an emergency basis for clearing of damaged poles and salvage of conductors and insulators. ➤ Begin repair/reconstruction .

EE – PHED	<ul style="list-style-type: none"> ➤ When early signs of distress appear in any part of the district, EE PHED will submit a special situation update to DM indicating the position in respect of water supply preparedness in the district. ➤ Prepare and update the disaster risk map of the district. The map should show the vulnerability and risks of the critical infrastructure related to water supply and public health. ➤ Prepare a contingency plan for the maintenance and repairs water pipe systems. ➤ Identify vulnerable areas, which are critical for disaster protection and control. ➤ Review and update precautionary measures and procedures. 	<ul style="list-style-type: none"> ➤ Will ensure availability of adequate number of tool kits to prevent any damage during disaster. ➤ Provide special attention to those places where the water supply were breached and repaired during the last disaster last year. ➤ Deployed adequate team in the most vulnerable areas. ➤ Opening the blockage of sewerage and sewage system during disaster to control the disease and epidemics. 	<ul style="list-style-type: none"> ➤ Supply the safe drinking water at the affected areas immediately after the disaster. ➤ Maintenance of Water works immediately after the disaster. ➤ Cleaning the sewerage system with adequate disinfection to prevent disease and epidemics.
DEO- School & Mass Education	<ul style="list-style-type: none"> ➤ Conduct HRV analysis of schools of the district. ➤ Based on HRV analysis, prepared Contingency Action Plan for the Department. ➤ All personnel required for disaster management should work under the overall supervision and guidance of the DEO. ➤ All officers (technical officers) should be notified and should meet the staff to review emergency procedures. ➤ Obtain IEC materials postars, Phmplets, simple tips on do's and don'ts in different disasters. 	<ul style="list-style-type: none"> ➤ Duck cover and hold first sign of earthquake move away from buildings. ➤ Assist the evacuation teams in evacuation of the school buildings. ➤ For a chemical hazard assist the warning team in disseminating the required safety tips to the entire school. ➤ Ensuring the schools becomes the shelter houses with adequate nos of equipments during the 	<ul style="list-style-type: none"> ➤ Dissemination of information on do's and don'ts so that the situation doesn't worsen. This can be done in the coordination with the warning and information dissemination teams. ➤ The damaged building and infrastructure should repair immediately after the disaster. ➤ The relief lines should be measured from the school building after the disaster.

	<ul style="list-style-type: none"> ➤ Conduct awareness generation activities systemically in the whole school targeting different classes and also staffs and teachers. ➤ Assists in organizations of the evacuations drills for various hazards. 	disaster.	
DEO - Higher Secondary Education	<ul style="list-style-type: none"> ➤ Conduct HRV analysis of Higher Secondary schools of the district. ➤ Based on HRV analysis, prepared Contingency Action Plan for the Department. ➤ All personnel required for disaster management should work under the overall supervision and guidance of the DEO. ➤ Organized demonstration of fire safety, first aid and search and rescue through linkages with the fire brigade, health officials and civil defense and home guards. ➤ Obtain IEC materials posters, Pamphlets, simple tips on do's and don'ts in different disasters. ➤ Conduct awareness generation activities systemically in the whole school targeting different classes and also staffs and teachers. ➤ Assists in organizations of the evacuations drills for various hazards. 	<ul style="list-style-type: none"> ➤ Duck cover and hold first sign of earthquake move away from buildings. ➤ Assist the evacuation teams in evacuation of the school buildings. ➤ For a chemical hazard assist the warning team in disseminating the required safety tips to the entire school. ➤ Ensuring the schools becomes the shelter houses with adequate nos of equipments during the disaster. 	<ul style="list-style-type: none"> ➤ Dissemination of information on do's and don'ts so that the situation doesn't worsen. This can be done in the coordination with the warning and information dissemination teams. ➤ The damaged building and infrastructure should repair immediately after the disaster. ➤ The relief lines should be measured from the school building after the disaster.

14.5 Format for First Information Report (FIR)

First Information Report (FIR) should follow the flash report as soon as possible (within a matter of hours). Its purpose is to inform the recipients of the severity of the disaster and, more importantly, by relating the severity of the disaster to coping capacities, provides the information needed to start mobilizing resources from outside the affected area to help. The report needs to be sent to Special Relief Commissioner, Odisha within maximum of 18 hours of occurrence of calamity. The report should, therefore, briefly summarize:

**OFFICE OF THE DISTRICT MAGISTRATE, BALANGIR
(Emergency Section)**

Letter No. /Emg. Date DD/MM/YYYY

To

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

FIR of _____, 20XX

- 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-
- f. Animals
 - Affected-
 - Lost-
- g. Crops affected and area (approx. in hect.)-
- h. Number of houses damaged-
- i. Damage to public property-
- j. Relief measures undertaken in brief-
- k. Immediate response & relief assistance required and the best logistical means of delivering that relief from State/National-

Name of the Department	Normal Time
Collector/ADM/ Emergency Officer	<ul style="list-style-type: none"> ➤ Ensure regular meetings of District Disaster Management Authority ➤ Develop & update Disaster Management Plan, carry out Hazard analysis in the district ➤ Identify safe alternate routes to cyclone shelters. ➤ Keep a list of Contacts of EoCs, Nodal officer of different departments, Important stake holders, Village leaders, shelters ➤ List of Relief lines & storage places ➤ List & maintenance of SAR equipment ➤ Capacity building of stakeholders & volunteers ➤ Asses preparedness through Mock Drills for different disasters at district department, block & community level ➤ Adopt sustainable mitigation measures ➤ Integrate DM & DRR features in development programmes
CDMO	<ul style="list-style-type: none"> ➤ Disaster Management Plans & Safety plans for Hospitals ➤ Capacity building of Medical & Para Medical Staffs ➤ Assess preparedness through Mock Drills & familiar exercises ➤ Integrate department plans with plans with Village & Block Plans and development programmes ➤ Develop media partnership ➤ Develop capacity of hospitals with advance equipment, proper manning & disaster resilient infrastructures ➤ Stock piling of Life saving drugs/ORS packets/Halogen tablets on receipt of warning from the Collector/DCR ➤ Transmission of messages to all PHCs to stock medicines and keep the medical staff ready ➤ Disease surveillance and transmission of reports to the higher authorities on a daily basis. ➤ Vaccination. ➤ To obtain and transmit information on natural calamities from the DCR ➤ Advance inoculation programme in the flood/Cyclone prone areas. ➤ Ensuring distribution of areas of operation among the mobile team. ➤ Pre-distribution of basic medicines to the people who are likely to be affected ➤ Shifting the patients who are in critical situation to the District Hospital ➤ Awareness messages to stop the outbreak of epidemics ➤ Conducting mock drills
Superintendent of Police (SP)	<ul style="list-style-type: none"> ➤ Reception of Warning from the DCR ➤ Communication establishment with District and Block/Tahasil Control rooms and departmental offices within the division. ➤ Alerting the APR force for deployment at the time of calamity ➤ To issue directive to police field functionaries to co-operate with Revenue Personnel in management of Relief operation.

EE- RWSS	<ul style="list-style-type: none"> ➤ Review and update precautionary measures and procedures and review with staff the precautions that have been taken to protect equipment. ➤ Within the affected block, all available personnel will be made available to the District Magistrate. If more personnel are required then out of station official or those on leave may be recalled. ➤ Prepare plans for water distribution to all transit and relief camps, affected villages and cattle camps and ensure proper execution of these plans. ➤ Inform people to store an emergency supply of drinking water ➤ Investigation of alternate of water and its supply. ➤ Standby diesel pumps or generators should be installed in damage-proof buildings. ➤ A standby water supply should be available in the event of damage, saline intrusion or other pollution of the regular supply. ➤ Establish procedures for the emergency distribution of water if existing supply is disrupted. ➤ Make provisions to acquire tankers and establish other temporary means of distributing water on an emergency basis. ➤ Make provision to acquire containers and storage tanks, required for storing water on an emergency basis. ➤ Protect pump stations from water logging. ➤ Repair sewage lines where damage is detected. ➤ Repair water pipelines wherever damaged.
EE- Irrigation	<ul style="list-style-type: none"> ➤ Check the wireless network and ensure that all the flood stations are connected. ➤ Establish mechanisms for exchange of information with irrigation divisions ➤ Inspect all the Bundhs, and check their height and slope. ➤ Check the top of the Bundhs, and if they have been cleared of encumbrances / encroachments and if they are motorable ➤ Check that all the Bundhs have been repaired/ reinforced, in particular those Bundhs which were damaged during the last floods. ➤ Check the drainage system of the Bundhs and ensure that the seepage and rat holes, etc. have been closed. ➤ Check that all the materials required for protecting Bundhs have been stored at different places, and a list of these places has been furnished to the district administration ➤ Check that the Junior engineers and other staff have been assigned their beats, and all the ➤ Arrangements for continuous vigilance over these Bundhs have been made. ➤ Check that all rain gauge stations are functional, and arrangements have been made to report the readings. ➤ Check the regulators and siphons. Check that they have been repaired and cleaned, increasing the flow of water. ➤ Check all the anti-erosion works, necessary to maintain the Bundhs.
CDAO- Agriculture	<ul style="list-style-type: none"> ➤ Review and update precautionary measures and procedures. ➤ Check available stocks of equipments and materials which are likely to be most needed during and after flood/disaster. ➤ Stock agricultural equipments which may be required during and after flood. ➤ Determine what damage, pests or disease may be expected, and what drugs and other ➤ insecticide items will be required, in addition to requirements of setting up extension teams for crop protection, and accordingly ensure that extra

	<p>supplies and materials, be obtained quickly.</p> <ul style="list-style-type: none"> ➤ All valuable equipments and instruments should be packed in protective coverings and stored in room the most damage-proof. ➤ Ensure that certified seeds of required varieties are available in adequate quantities. ➤ Develop a pest and disease monitoring system so that timely steps can be taken to reduce damage to corps. ➤ A pests and disease monitoring system should be developed to ensure that a full picture or risks is maintained. ➤ Plan for emergency accommodations for agriculture staff from outside the area. ➤ Extension Officers should be unplugged when flood/disaster warning is received.
EE- Rural Works	<ul style="list-style-type: none"> ➤ Govt. buildings should be inspected and necessary repairs to be got executed to with standing hazards affected. ➤ Script for slides, pamphlets, and cultural programmers should be got prepared immediately. ➤ Arrangements should be made to obtain poster and films by addressing the Director through the Collectors. ➤ Public addresses equipment should be obtain kept ready. ➤ The community Radio sets available in the coastal villages should be ascertained ➤ The names of Hamlets where they are not available to be reported. ➤ The public should be fully educated regarding the precautionary measures & after cyclone through available media. ➤ Specific duties should be assigned to the field staff. ➤ The field staff should proceed to the place of work allotted and be ready to attend to cyclone duty.
EE- Public Works	<ul style="list-style-type: none"> ➤ All personnel required for disaster management should work under the overall supervision and guidance of DM. ➤ Review and update precautionary measures and procedures, and review with staff the precautions that have been taken to protect equipment. ➤ Vehicles should be inspected, fuel tanks filled and batteries and electrical wiring covered as necessary. ➤ Extra transport vehicles should be dispatched from headquarters and stationed at safe strategic spots along routes likely to be affected. ➤ Heavy equipments, such as front-end loaders, should be moved to areas likely to be damaged and secured in a safe place. ➤ Clean the area beneath bridges regularly for smooth flow of water excess. ➤ Maintain all the highways and access roads, which are critical from the point of view of supplying relief. ➤ Inspect all buildings and structures of the state government (including hospital buildings.) by a senior engineer and identify structures which are endangered by the impending disaster. ➤ The designation of routes strategic to evacuation and relief should be identified and marked, in close coordination with police and District Control Room ➤ Establish a priority listing of roads which will be opened first. Among the most important are the roads to hospitals and main trunk routes ➤ Work under construction should be secured with ropes, sandbags and covered with tarpaulins if necessary. ➤ Construct/ reinforce the connecting roads from villages to roads, canals and Bundhs and raise their level so that people can access the high ground.

	<ul style="list-style-type: none"> ➤ Inspection of old buildings and suggesting retrofitting of weak buildings/ demolition of dangerous structures and evacuation of population. ➤ Carry out route opening by removing debris on the road. ➤ Begin clearing roads. Assemble casual labourers to work with experienced staff and divide them into work gangs.
<p>DTO-Telecom</p>	<ul style="list-style-type: none"> ➤ Assess the different disaster scenarios and match the communications needs with the available resources. ➤ Ensure that TSPs (private and public) invest in preventive measures that will ensure maximum robustness and preparedness of the telecom networks during emergencies. ➤ Ensure that TSPs (private and public) develop detailed emergency plans for management of resources under their responsibility. ➤ Conduct annual reviews of the ETP/SOP - Organize annual symposium on telecommunications availability during emergency. – ➤ Update the communications plan according to development and innovations in emergency telecommunications systems. ➤ Disseminate information among the Public and the district administration on the availability of telecom services and equipment's for use during emergencies.
<p>CDVO</p>	<ul style="list-style-type: none"> ➤ Call for emergency meeting to take stock of the situation. Develop a strategy and objectives. Review and update precautionary measures and procedure and review with staff the precautions that have been taken to protect equipments. ➤ Prepare a list of water borne diseases that are preventable by vaccination. ➤ Publicize the information about common diseases afflicting livestock and the precautions that need to be taken. ➤ Assist the Revenue Department in preparing plans for cattle campus and cattle feeding centers. ➤ Stock emergency medical equipments which may be required during and post disaster Surgical packs should be assembled and sterilized. ➤ Enough stock of surgical packs should be sterilized to last for four to five days. ➤ The sterilized surgical packs must be stored in protective cabinets to ensure that they do not get wet. Covering the stock with polythene is recommended as an added safety measure. ➤ All valuable equipments and instruments should be packed in protective coverings and stored in room the most damage-proof. ➤ All electrical equipments should be unplugged when disaster warning is received. ➤ Organize vaccination campaigns in disaster prone villages before, during and after the disaster. ➤ Prepare kits for veterinary diseases, which could be provided to veterinary doctors at the block level and extension officers at the village level. Kits can also be provided to the private veterinary doctors. ➤ Arrange for emergency supplies of anesthetic drugs. ➤ Check stocks of equipments and drugs which are likely to be most needed during and after disaster. ➤ Fill department vehicles with fuel and park them in a protected area. ➤ Fill hospital water storage tanks and encourage water savings. If no storage tanks exist water for drinking should be drawn in clean containers and protected. ➤ Prepare an area of the hospital for receiving large number of livestock.

	<ul style="list-style-type: none"> ➤ Develop emergency admission procedures (with adequate record keeping). ➤ Establish cattle camps and additional veterinary aid centres at affected sites and designate an Officer In-charge for the camp. ➤ Estimate the requirement of water, fodder and animal feed, for cattle camps and organize the same. ➤ Ensure that adequate sanitary conditions through cleaning operations are maintained in order to avoid outbreak of any epidemic. ➤ An injury and disease monitoring system should be developed, to ensure that a full picture of risk is maintained. ➤ Plan for emergency accommodations for veterinary staff from outside the area.
RTO/MVI	<ul style="list-style-type: none"> ➤ Prepare a list of vehicles- trucks, buses, jeeps, tractors, etc of government and private agencies in the district and provide the list to the District control room. ➤ Provide requires vans and ambulances for mobile health and animal husbandry teams. ➤ Provide trucks, buses, jeeps, tractors, etc for evacuation and supply chain management ➤ Issue standing instructions to the State transport department for providing buses for evacuation and relief. ➤ Recall important functionaries from leave; communicate to the staff to man their places of duties like the ward and divisional offices and respective departments. ➤ Call for emergency meeting to take stock of the situation. Develop a strategy and objectives.
DFO	<ul style="list-style-type: none"> ➤ Develop and quarterly update the disaster management plan that includes the Contingency Action Plan for the Department based on HVRC analysis with the active involvement of all concerned line departments and local bodies in the district ➤ Make personnel available to the District Magistrate, within the affected block,. If more personnel are required, recall those on leave. ➤ Identify areas that could be opened or made available for grazing or fodder collection in case of disaster ➤ Ensure that adequate supply of small poles or bamboo is available for reconstruction of houses of the affected people, as well as wood for cremation of dead. ➤ Ensure plantation to the maximum possible extent.
Railway	<ul style="list-style-type: none"> ➤ Identification of flood prone areas, RAT, RAW and information prone to erosion/breaches and marking them on railways system map. ➤ Development of Flood Shelters for staff and passenger at suitable locations in the areas prone to repeated floods ➤ Study of changed water catchment area due to construction of highways, Dams. ➤ Study of changed rainy season month on a particular region. ➤ Action Plan for Alignment, Location, Design and Provision of Waterway on Railways Embankments ➤ Inspections of Railway Affecting Works – to be streamlined and timely ensured. ➤ Review of waterways for adequacy and alignment and measures to modify, if needed. ➤ Status Note on the lessons learnt from the previous flood situations in the past 5 years. ➤ Bye-laws for buildings in flood plains.

<p>EE- Electricity/TPWODL</p>	<ul style="list-style-type: none"> ➤ Review and update precautionary measures and procedures and review with staff the precautions that have been taken to protect equipment. ➤ Ensure that the Power Supply department to make alternate arrangements of emergency supply for the major offices from time of receipt of districts ➤ Check emergency tool kits, assembling any additional equipment needed. ➤ After receiving alert warning, immediately undertake following inspection of High tension lines, Towers, Sub-stations, Transformers, Insulators, Poles and other equipments ➤ Instruct district staff to disconnect the main electricity supply for the affected area. ➤ Protect Power Stations from disaster. Raise the height of compound walls. Arrange gunny bags. Install pump sets for draining water in case of Flood/ Cyclone/ Tsunami, ➤ etc. ➤ Provide information to the people about the state of power supply. It is one of the most important sources of information. Establish temporary electric supplies to other key public facilities, public water system etc. to support emergency relief. ➤ Establish temporary electric supplies to transit camps feeding centres, relief camps and Site Operation Centre, District EOC and on access roads to the same. ➤ Establish temporary electric supplies for staging area. ➤ Compile an itemized assessment of damage, from reports made by various electrical receiving centres and sub-centres.
<p>EE - PHED</p>	<ul style="list-style-type: none"> ➤ Formation of Disaster Management Cell and manning with senior personnel drawn from key sections of the dept. ➤ Formulation of Public Health Engineering related programme and activities by intonating them with hazard specific preventive and mitigation measures. ➤ Creation of stocks of installation materials at the district level for use in emergencies. ➤ Orientation and training of a team of technicians to do installation as quickly as possible. ➤ Strategizing the installation of hand-pumps etc. with hazard profile of the area in mind. ➤ In consultation with the Department of Education and DMD, provision of additional sanitation and drinking water facilities in schools and relief shelters where people take refuge during flood. ➤ In consultation with the Department of Disaster Management making special arrangements for the supply of drinking water in drought prone areas. ➤ Planning for repair and maintenance of the facilities created as a part of the programme and activities. ➤ Keeping a track of groundwater level and having a fresh look at the facilities created accordingly. ➤ Organizing interaction with Gram Panchayats for having proper sanitation facilities, and providing them support and guidance in planning, implementation and maintenance of the same. ➤ Procurement, upkeep and maintenance of sanitation equipment for use in emergencies.

<p>DPS, SSA- School & Mass Education/ DEO - Higher Secondary Education</p>	<ul style="list-style-type: none"> ➤ Formation of Disaster Management Cell and manning the same by senior personnel drawn from key Directorates. ➤ Incorporating costs for preventive and mitigation measures for earthquake, flood, fire and cyclonic storm prone areas to construct disaster resistant school buildings. ➤ In association with Fire Dept. getting fire extinguishers installed in schools and teachers identified and trained in operating them. ➤ Awareness Generation Programmes about Hazard, the kind of preparedness required and how to act at the time of disaster shall be organized in schools on monthly basis. ➤ Disaster Management shall be made a part of the school curriculum. ➤ The Department shall get quality films made on hazard wise disaster preparedness and organize their viewing by children and their parents. ➤ The Department shall in association with Nehru Yuva Kendra organize locality based youth clubs and get them groomed in escort services, relief work and taking care of children, women, old and sick. ➤ Making adequate arrangements for getting hand pumps installed, storage facilities created, toilet and bathrooms built in those schools where communities do take shelter during flood. Concerned departments shall either make the arrangements or make funds available for the same.
<p>BDOs/Tahasildar</p>	<ul style="list-style-type: none"> ➤ Providing authentic information required by the DCR ➤ Preparing a record of previous disasters in the locality and analyzing the effects ➤ Preparing hazard maps of the Block./Tahasil& the GPs in minute details ➤ Mapping the cut off areas with alternate route map. ➤ Identification of shelter places in the maps ➤ Keeping a List of storage Points & facilities available, dealers of foodstuffs. ➤ Keeping a list of vulnerable people and area and weak points on embankments (if applicable) ➤ Creating a Control Room at the respective level and assignment of duties to the staff. ➤ Pre-positioning of staff for site operation centers. ➤ Uninterrupted communication with the DCR ➤ Arrangement of alternative communication/generator sets, etc ➤ Formation of GP/village level disaster committees and task forces ➤ Arrangement of boats on hire available locally. ➤ Deployment of Boat in the most vulnerable areas. ➤ Organizing awareness camps at GP/village levels ➤ Dissemination of Warning: ➤ Crosschecking with the DCR for the authenticity of the warnings ➤ Arrangement or requisition of Jeeps/Trekkers/ Auto Rickshaw to disseminate received warning information's to the population of vulnerable / weak places ➤ Dissemination of warning/ coordination with District control room. ➤ Warning the people about probable affected areas ➤ Mobilizing the people to leave for identified shelters with their domestic animals and personnel belongings.

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

14.6 Preparedness of Departments

The Government departments playing lead or support roles in disaster preparedness are:

Daily Status Report on Relief/ Restoration Measures Undertaken By Departments

Health Department.

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

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-

FS & CW Department

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

District	Chuda	Gur
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- Qtls of rice has been allocated to the District mentioned below

<u>Blocks</u>	<u>Quantity allocated (in quintal)</u>	<u>Total</u>
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Fisheries & A.R.D. Department

- Animals vaccinated-
- Animals treated-

Damages to Roads/River Embankments

R.D. Department.

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

Works Department.

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

W.R Department.

- Breach occurred-
- Breaches closed-
- Breach closing works in progress

Chapter-15

Rehabilitation & Restoration

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

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

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

15.1 Standard Operating Procedure: Restoration & Rehabilitation

Name of the Department	Normal Time
Collector/ADM/ Emergency Officer	<ul style="list-style-type: none"> • Restoration of Critical Infrastructures to bring situation to normalcy • Ensure Restoration of roads & channels, Communication network, Electricity & Energy • Ensure health in the affected areas • Adopt sustainable mitigation measures in the restoration activities
CDMO	<ul style="list-style-type: none"> • Carry out Disease surveillance measures to check epidemic prone diseases • Dis-infection of drinking water & measures for health & hygiene • Rehabilitation of deprived & destitute • Carry out Trauma & Psycho-social counseling
Superintendent of Police (SP)	<ul style="list-style-type: none"> • Security arrangements for relief materials in transit and in camps etc. • Senior police officers to be deployed in control rooms at State & district levels during L 1 level deployment onwards. • Deploy personnel to guard vulnerable embankments and at other risk points. • Arrangement for the safety. • Coordinate search, rescue and evacuation operations in coordination with the administration • Emergency traffic management. • Maintenance of law and order in the affected areas. • Assist administration in taking necessary action against hoarders, black marketers etc.
EE- RWSS	<ul style="list-style-type: none"> • Provision of tube wells at the squares, market places, bus stops, public buildings like schools, hospitals etc. to face the heat wave situation. • Alternate drinking water sources for the fluoride- affected areas like Roof top water harvesting, rainwater conservation and recycling. • Construction of drains in the villages for easy discharge of the flood water, wastewater and sewage • IEC campaign for safe drinking water and sanitation to prevent any health hazard in normal time in general and during disaster in particular.

EE- Irrigation	<ul style="list-style-type: none"> • Planning for new medium irrigation project and completion of the ongoing project in the rivers to increase the irrigational potential of the district. • Strengthening the weak points of the river embankments, • Provision of spurs, stone packing, launchings at the turning point and guide bank along the course of the rivers and big Nallas to prevent the damage during flash flood. • Constructions of culverts, cause ways and other cross drainage work for quick discharge of flood water and to prevent prolonged submergence causing damage to the important infrastructure. • Planning and Construction of Minor Irrigation Projects at suitable location. • Construction of masonry check dams on some seasonal and perennial Nallas
DAO- Agriculture	<ul style="list-style-type: none"> • Encourage the formation of social institution to increase their access to credit, market, insurance etc. like Producers/Growers association, • Cooperatives, Societies, Farmers club etc. • Capacity building of farmers and grass root extension workers on the modern agriculture practices, dynamic contingency crop planning, IPM, INM, alternate land use etc on • Popularization of Seed Village scheme and promotion of Community managed Seed Bank. • Increase the access of famers to appropriate agro information, market, credit etc. • Promotion of the cultivation of vegetables, spices, tuber crops, mushroom etc through on field demonstration and minikit distribution program. • Construction of low cost storage structures for the perishable agro/hort. Products. • Training of the SHGs, vegetable growers etc. on the package of practice, proper storage, processing and value addition of the hort. Products. • Treatment of arable and non-arable lands through various mechanical and vegetative measures to prevent further their degradation and increase productivity
EE- Rural Works	<ul style="list-style-type: none"> • Strengthening and restoration of infrastructure with an objective to eliminate the factor(s) which caused the damage.

EE- Public Works	<ul style="list-style-type: none"> • Construct/reinforce the connecting roads from villages to roads, canals and bunds and raise their level so that people can access the high ground. • Install adequate road signs to guide and assist the drivers. • Institute repair of all paved and unpaved road surfaces, including edge metaling, pothole patching and any failure of surface, foundations in the affected areas by maintenance engineer's staff and keep monitoring their conditions. • Take on construction of temporary roads to serve as access to temporary transit and relief camps and medical facilities for disaster victims.
DTO-Telecom	<ul style="list-style-type: none"> • Assessment of damage and restoration of communication network. • Ensure all communication equipment installed at DEOC.
CDVO	<ul style="list-style-type: none"> • Popularization of the livestock farming as one of the viable alternative livelihood option in the normal year in particular and in drought year in general through awareness generation, attractive schemes etc. • Improvement of the quality and productivity of local livestock through Artificial Insemination and other breeding process. • Strengthening of the dispensaries/Livestock Aid centers with staffs, medicines, and equipment to proper health care of the animal. • Capacity building of the grass root extension workers/Para worker/ farmers on animal health care and hygiene, AI/breeding, birth care etc. • Popularization of the cultivation of nutritious fodder grasses or trees in the home stead/field bunds of farmers/village pasture lands etc. through demonstration unit, mini kit distribution etc. • Storage, Processing, Market linkage, Price fixation of the livestock products • Promotion of the development of Institutions like Milk Cooperatives, Goat grower association etc.for better access to market, credit etc. • Introduction of Pisciculture in all the Dams, • Reservoirs/MIP/GP tanks and other bodies. • Supply of quality and productive fingerlings of fast growing/improved fish species. • Capacity building of fish farmers/grass root extn. Workers/SHG members on commercial pisciculture, fish seed and feed production etc.

RTO/MI	<ul style="list-style-type: none"> • Emergency repairs of roads if affected must be carried out. • A system for priority transport of relief goods and personnel must be developed. • Relief goods may be considered for exemption from freight charges, if any. • All bus depots should be equipped with emergency communication equipments. • Every work gang should have tools which will be needed in an emergency. • This should include crosscut saws, axes and ropes. • Raincoats, caps and gumboots should be made available to work gangs in an emergency
DFO	<ul style="list-style-type: none"> • Improvement of the Vegetation coverage and Biomass production to meet the multiple community need like food, fuel wood, fodder etc. through three-tier plantation. • Regeneration of degraded village Common Property Resources like village forest, waste land through the gap filling and block plantation of multipurpose tree species. • Prevention of indiscriminate forest felling through strict introduction of rules and regulation and massive awareness generation. • Strengthening of the community based organizations like VSS through various training, exposure, orientation, and sensitization and ensures the involvement of the local community in forest management (regeneration, protection etc.) • Fair Collection and marketing of the NTFP products • Restricted grazing of the cattle herd in the forest area is to be ensured to protect the natural regeneration of the forest ecosystem.
Railway	<ul style="list-style-type: none"> • Rapid access to the site of the accident. ∞ • Effective site management by making best use of on-board and locally available resources. • Quick extrication of victims. ∞ Speedy transportation of victims to hospital. • Proper communication system both for assisting the stranded passengers as well as giving out timely information to the media.

EE- Electricity	<ul style="list-style-type: none"> • Disconnect electricity after receipt of warning. • Attend sites of electrical accidents and assist in undertaking damage assessment. • Stand-by arrangements to ensure temporary electricity supply. • Inspection and repair of high tension lines /substations/transformers/poles etc. • Ensure the public and other agencies are safeguarded from any hazards, which may have occurred because of damage to electricity distribution systems. • Restore electricity to the affected area as quickly as possible. • Replace / restore of damaged poles/ salvaging of conductors and insulators.
EE – PHED	<ul style="list-style-type: none"> • Provision of tube wells at the squares, market places, bus stops, public buildings like schools, hospitals etc. • Alternate drinking water sources to affected area • Construction of drains for easy discharge of the flood water, wastewater and sewage • IEC campaign for safe drinking water and sanitation to prevent any health hazard in normal time in general and during disaster in particular.
DPC, SSA- School & Mass Education/ DEO - Higher Secondary Education	<ul style="list-style-type: none"> • Department and the field level institution will prepare a contingent Action Plan for their reconstruction. • Damaged buildings (including classroom building, department building, and breaking of window) should be assessed and the report is to be sent to SRC for adequate funding needed for repair and constructions of building, boundary wall, Hostels etc. for quick recovery and restoration of Education.

15.2 Damage Loss Assessment

Sector	Damage in Physical terms	Requirement of funds for repair of immediate nature	Out of (3) amount available from annual budget	Out of (3) amount available from related schemes/ programmes / other sources	Out of (3) amount proposed* to be met from SDRF/NDRF as per the list of works indicated in the revised items & norms
1	2	3	4	5	6
Roads & Bridges	Road	5.8			
Drinking water Supply works (Rural)					
Drinking water Supply works (Urban)					
Irrigation					
**Power					
Primary Health Centres					
Community assets in social sectors covered by Panchayats					

15.3 Calculation of assistance for agricultural input subsidy-SMF

(Rs. In lakh)

Sl.	Name of the Block	Area held by SMF (in Hectares)	Total Agricultural area Affected [in Hect.]	Total agricultural area where crop loss is > 50%	Crop loss 33% & above			Expenditure incurred			Total
					Irrigated [in hect.]	Rainfed [in hect.]	Perennial	Irrigated @Rs.13,500/- per hectare	Rainfed @Rs.6800/- per hectare	Perennial @ Rs.18000/ per Hect.	
1	Belpara	13.25	0	0	13.25	0.00	0.00	0	90100.00	0	90100
2	Khaprakhol	8.4	0	0	8.40	0.00	0.00	0	57120.00	0	57120
Total		21.65	0	0	21.65	0.00	0.00	0	147220.00	0	147220

Agricultural input subsidy- Farmers other than SMF

Farmers affected first year

Rs. In lakh)

Sl.	Name of the Block	Area held by farmers other than SMF (in hectares)	Crop loss > 33%							
			No of Farmers	Irrigated area in hect	Amount spent @ Rs.13,500/- per hect.	Rainfed Area in hect.	Amount spent @ Rs.6800/- per hect.	Perennial Area in hect	Amount Spent @ Rs.18000/ per Hect.	Total Amount Spent
1	0	0	0	0	0	0	0	0	0	0
Total		0	0	0	0	0	0	0	0	0

Farmers affected by successive calamities

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

Animal Husbandry (Replacement of Animals)

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

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
Khaprakhol	0	1	0	0	0	0	1	0	0	0	3000	0	0	0	3000
Total	0	1	0	0	0	0	1	0	0	0	3000	0	0	0	3000

Assistance sought for repair /restoration of damaged houses

(Rs. In Lakh)

Sl	District	Fully Damaged/ Severely Damaged								Partially (15% & More)				Huts		Cattle shed attached with house		TOTAL
		Plain Areas				Hilly Areas				pucca	Amount @ Rs.- 5200/-	Kutcha	Amount @ Rs.- 3200/-	Nos.	Amount @ Rs.- 4100/-	Nos.	Amount @ Rs.- 4100/-	
		Pucca	Amount @ Rs.- 95100/-	kutcha	Amount @ Rs.- 95100/-	pucca	Amount Rs.- 101900/-	Kutcha	Amount @ Rs.- 101900/-									
1	Balangir	2	203800	64	6521600	0	0	0	0	2	10400	1100	3520000	0	0	6	12600	10268400
TOTAL																		

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

Sl. No	Name of the district	Average No. (in a day) of relief camps	Average duration of operation of relief camps	Average No. of people accommodated per day in the relief camps	Expenditure incurred on (Rs. in lakh)				
					Temporary accommodation	Food	Clothing	Medical care	Total expenditure
1	Puintala	2	3	16	0	4800	0	0	0
2	Balangir Municipality	2	3	0	0	19500	0	0	0
3	Patnagarh NAC	1	1	40	0	12100	0	0	0
Total		5	7	56	0	36400	0	0	0

Extent of damage due to natural calamities

Dist :Balangir Nature and period of natural calamity : Heavy Rainfall On 14/09/2021

Sl.	Item	Details
1.	Total number of Blocks in the district	14
2.	Number and names of Blocks affected	9
3.	Number of villages affected	352
4.	Population affected (in lakh)	2632
5.	Total land area affected (in lakh ha.)	
6.	Cropped area affected (in lakh ha)	21.65
	i) Total cropped area affected	21.65
	ii) Estimated loss to crops (Rs. in lakh)	147220.00
	iii) Area where cropped damage was more than 33%	21.65
7.	Percentage of area held by SMF	100%
	i) In the State as a whole	0
	ii) In the affected districts	0
8.	House damaged	
	a) No. of houses damaged	1168
	i) Fully damaged pucca houses	0
	ii) Fully damaged kutch houses	2
	iii) Severely damaged pucca houses	0
	iv) Severely damaged kutch houses	64
	v) Partly damaged houses (pucca + kutch)	1102
	vi) No. of huts damaged	0

	b) Estimated value of damage to houses (Rs. in lakh)	10268400.00
9.	No. of human lives lost	1
	No. of persons with grievous injuries	0
	No. of persons with minor injuries	0
10.	Animal lost	0
	a) No. of big animals lost	0
	b) No. of small animals lost	1
	c) No. of poultry (birds) lost	0
11.	Estimated value of damage	3000.00
	Damage to public properties	
	a) In physical terms (sector wise details should be given – e.g. length of State roads damaged, length of districts roads damaged, length of village roads damaged, No. of bridges damaged, No. of culverts damaged, No. of school buildings damaged etc.)	
	b) Estimated value of the damage to public properties	25651400.00
	Estimated total damage to houses, crops and public properties	36070020.00

Format for working out the requirements under the head of repair of damaged infrastructure of immediate nature

(Rs. In lakh)

Sector		Damage in physical terms	Requirement of funds for repair of immediate nature	Out of (3), amount available from annual maintenance budget	Out of (3), amount available from related schemes/ programs/ other sources	Out of (3), amount proposed to be met from CRF/NCC F in accordance with list of works indicated in the Appendix to the revised items and norms
Roads & Bridges	PWD Roads	Road and 2 Nos, of Breaches	43.23	-	-	43.23
	Rural Roads	RD Road	2.514	-	-	2.514
	Urban Roads	6.30 Kms of Road in Balngir ULB	3.75	-	-	3.75

	Panchayat Roads	Panchayat Road	36.00	-	-	36.00
	River/ Canal Embankment Roads	No of Roads damaged in river embankments – Length of Road damaged in river embankments – No of Roads damaged in canal embankments – Length of Road damaged in canal embankments –	-	-	-	-

Drinking Water Supply	Rural Water Supply	Pipeline	37.5	-	-	37.5
	Urban Water Supply	Pump Set With Electrical Accessories	3.00	-	-	3.00
Irrigation	River Embankment	No of breaches – Length of breach in Km – No of partial damage -	-	-	-	-
	Canal Embankments	No of breaches – Length of breach in Km – No of partial damage -	-	-	-	-
	MI projects	12 Nos Of Check Dam Under MI & Laxmi Jore Reservoir	35.00	-	-	35.00
	Clearance of Drainage channels	Length of drainage channels congested with vegetative materials –	-	-	-	-
Primary Education	Primary School Buildings	34 Nos of School Building	51.00	-	-	51.00

PHCs	PHCs	No of Primary Health Centres damaged -	0	0	0	0
Community assets owned by Panchayats	Comm unity Halls	No of Panchayat Ghar/Comm unity Hall damaged -	0	0	0	0
	AWW Centre s	6 Nos. of No of Anganwadi Centres damaged – in Balangir ULB	12.00	0	0	12.00
Power	Electri cal lines	2.7 KM of Line Cable (upto 11kb) &13 Nos of Pole	1.87	-	-	1.87
Total						

Chapter- 16 Recovery

An insight

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

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

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

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

ASSESSMENT AND PRIORITIZATION

Comprehensive District Plan, 2016 prepared by District Planning and Management Unit, Balangir made a detail SWOT analysis of the district and suggested few priority area from which three areas are directly linked with Disaster Management. In this background, DDMP, 2022-23 chalked out a recovery plan in compliance with the existing plan of the various departments especially for **DROUGHT (IRRIGATION), LIVELIHOOD and HEAT WAVE (DRINKING WATER)** which are the priority of the district.

DDMP Prioritization

1. Drought Mitigation Measures with Irrigation Potential
2. Livelihood Restoration
 - a) *Agri Based Livelihood*
 - b) *Skill Development*
3. Management Of Heat Wave (Drinking Water)

TARGETING

During recovery phase targeting is crucial for optimum utilization of resources. It also helps to reach the most vulnerable household/person who needs special care of the vulnerable. Hence, priority shall be given to the following vulnerable categories of households/person during recovery stage.

1. Households without shelter
2. Destitute/living on alms
3. Manual scavengers
4. Primitive Tribal groups
5. Legally released bonded labourers
6. Only one room with Kucha walls and Kucha roof
7. No adult member between age 16 to 59
8. Female headed households with no adult male member between age 16 to 59
9. Disabled member and no able bodied adult member
10. SC/ST households
11. Pregnant women and Lactating mother
12. Widow/Orphan
13. No literate adult above 25 years
14. Landless households deriving major part of their income from manual casual labour
15. Small and marginal farmers
16. BPL/IAY/FRA beneficiaries.

16.1 PART-I: DROUGHT RECOVERY PLAN

Total Water Demand of the district for various sector

Estimation of Domestic water demand is one of the important analyses for Balangir district. The following table portrays the block wise water demand status in the district. This table Gives the present (2017) population and projected population (2022-23) and gross water demand in all aspect.

Blocks wise water demand are mentioned in the below table

SI	Block Name	Population in 2015	Gross Water Demand (BCM)2015	Projected population in 2022-23	Projected Gross Water Demand (BCM)2022-23
1	Balangir	115306	0.004209	141826	0.005176649
2	Agalpur	107903	0.003938	118500	0.00432525
3	Belpara	144385	0.00527	158566	0.005787659
4	Patangarh	37394	0.001365	41067	0.001498946
5	Titlagarh	136361	0.004977	149753	0.005465985
6	Saintala	134630	0.004914	147853	0.005396635
7	Tureikela	92714	0.003384	101820	0.00371643
8	Bangomunda	131139	0.004787	144019	0.005256694
9	MuriBahal	128619	0.004695	141251	0.005155662
10	Deogoan	109362	0.003992	120103	0.00438376
11	Puintala	125031	0.004564	137311	0.005011852
12	Gudvella	69696	0.002544	76541	0.002793747
13	Loisingha	107444	0.003922	117997	0.004306891
14	Khaprakhol	104783	0.003825	115075	0.004200238
	TOTAL	1846402	0.05635965	2027746	0.062476393

Source: DIP, Balangir

Following table describes the Total water demand for various sectors in Balangir District, Water Demand and Water Gap of Balangir district. The domestic water demand of the district is **0.0563597** BCM, the crop demand is **0.0563597** BCM. Besides, the district has the water demand for industries and livestock are **0.473015** BMC and **0.0049355** BCM respectively. Hence, total Water demand for various sectors in the balangir district is

6.6496502 BCM . Following table shows block sector wise water requirement in various blocks of the district.

Sl. No.	Block	Components(BCM)				Total, BCM
		Domestic	Crop	Industrial	Livestock	
1	Agalpur	0.004209	0.396248		0.0049355	0.400457
2	Belpara	0.003938	0.387436	0.0000062		0.3913802
3	Balangir	0.00527	0.30844			0.31371
4	Bangomunda	0.001365	0.400181			0.401546
5	Deogaon	0.004977	0.344256			0.349233
6	Gudvella	0.004914	0.397487			0.4073365
7	Khaprakhol	0.003384	0.647452			0.650836
8	Loisingha	0.004787	0.595759			0.600546
9	Muribahal	0.004695	0.484432			0.489127
10	Patnagarh	0.003992	0.440037			0.444029
11	Puintala	0.004564	0.407325			0.411889
12	Saintala	0.002544	0.455594			0.458138
13	Titilagarh	0.003922	0.44376	0.4730085		0.9206905
14	Tureikela	0.003825	0.406907			0.410732
15	Total	0.0563597	6.115312	0.473015		0.0049355

Source: DIP, Balangir

Crop water demand in Balangir district is summarised in the following table. The table explains the crop details, area sown in Kharif & Rabi season, irrigated area of Kharif & Rabi season and crop water demand, water potential required, Existing Water Potential and water potential to be created. The major crops in Balangir District is Rice, Maize, Jowar, Millets, Pulses, Oil Seeds, Fibre, Vegetables, Cereals, pulses, oil seeds, chilly, garlic, Coriander, and Sugar Cane. The crop water demand is measured as millimetre, meter and the water potential measured as BCM.

SI	Block	Area sown (ha)	Irrigated area (ha)	Crop water demand (mm)	Water potential required (BCM)	Existing Water potential (BCM)	Water potential to be created (BCM)	Water Potential required 2022-23(BCM)
1	Bolangir	29596	7400	24280	0.39624	0.11371	0.28253	0.321096
2	Deogoan	29351	6700	24180	0.38743	0.10164	0.28578	0.324797
3	Gudvella	22462	5588	24180	0.30844	0.08915	0.21928	0.249215
4	Puintala	31137	5383	24180	0.40018	0.07840	0.32177	0.365696
5	Loisingha	27369	5294	24180	0.34425	0.07755	0.26670	0.30311
6	Agalpur	30389	11960	24180	0.39748	0.16275	0.23473	0.266774
7	Patnagarh	50766	8554	24180	0.64745	0.11394	0.53350	0.606332
8	Belpada	45238	7761	24180	0.59575	0.10081	0.49494	0.562508
9	Khaprakhol	37066	7112	24180	0.48443	0.09484	0.38959	0.44277
10	Titilagarh	34506	6477	24180	0.44003	0.10022	0.33981	0.386194
11	Saintala	31118	5507	24180	0.40732	0.08717	0.32014	0.363846
12	Muribahal	35184	4642	24180	0.45559	0.07772	0.37786	0.429445
13	Bangomunda	32288	5818	24180	0.44376	0.09758	0.34618	0.393433
14	Tureikela	31040	4115	24180	0.40690	0.05979	0.34710	0.39449
	Total	467510	92311	338620	6.11531	1.35534	4.75997	5.409707

Source: DIP, Balangir

Water Budget

The water budget for the district and the blocks includes the existing water availability, which is in turn divided as Surface and Ground water. The present and projected water demand is calculated, similarly the water gap also

SI	Name of Blocks	Existing water availability (BCM)		Total (BCM)
		Surface Water	Ground Water	
1	Agalpur	0.134	0.0447	0.1787
2	Belpara	0.232	0.0601	0.2921
3	Balangir	0.203	0.0544	0.2574
4	Bangomunda	0.137	0.0428	0.1798
5	Deogaon	0.202	0.0497	0.2517
6	Gudvella	0.101	0.0305	0.1315
7	Khaprakhol	0.26	0.055	0.315
8	Loisingha	0.141	0.0502	0.1912
9	Muribahal	0.204	0.0529	0.2569
10	Patnagarh	0.273	0.0678	0.3408
11	Puintala	0.141	0.0437	0.1847
12	Saintala	0.259	0.0617	0.3207
13	Titilagarh	0.193	0.046	0.239
14	Tureikela	0.219	0.0486	0.2676

Source: DIP, Balangir

The water demand and water supply of Balangir district is given as present and projected. The present water demand is 6.6496502 BCM; the projected water demand is 7.012526 BCM. The present water gap is -3.2425502 BCM; the projected water gap in 2022-23 is -4.08331. Thus, management of water demand will be the biggest challenges to the district in near futures.

SI	Name of Blocks	Water Demand (BCM)		Water Gap (BCM)	
		Status during 2015	Projected by 2022-23	Status during 2015	Projected by 2022-23
1	Agalpur	0.400457	0.455503	-0.221757	-0.2768
2	Belpara	0.3913802	0.444646	-0.0992802	-0.15255
3	Balangir	0.31371	0.35633	-0.05631	-0.09893
4	Bangomunda	0.401546	0.456304	-0.221746	-0.2765
5	Deogaon	0.349233	0.396706	-0.097533	-0.14501
6	Gudvella	0.4073365	0.462068	-0.2758365	-0.33057
7	Khaprakhol	0.650836	0.739543	-0.335836	-0.42454
8	Loisingha	0.600546	0.682327	-0.409346	-0.49113
9	Muribahal	0.489127	0.55571	-0.232227	-0.29881
10	Patnagarh	0.444029	0.504478	-0.103229	-0.16368
11	Puintala	0.411889	0.467931	-0.227189	-0.28323
12	Saintala	0.458138	0.520572	-0.137438	-0.19987
13	Titilagarh	0.9206905	0.981649	-0.6816905	-0.74265
14	Tureikela	0.410732	0.466642	-0.143132	-0.19904
	Total	6.6496502	7.012526	-3.2425502	-4.08331

Source: DIP, Balangir

16.2 PART-II: LIVELIHOOD RECOVERY PLAN

Considering the poverty profile of Odisha, convergence of different flagship schemes holds great significance in addressing poverty and unemployment. All the major anti-poverty Schemes envisage convergence of some kind. But two of them, critical in the context of poverty reduction, are NRLM and MGNREGS. NRLM needs MGNREGS because of better inclusion of the poorest, strengthening organizations of poor, enhanced livelihood opportunities and bringing the right perspective into intervention. Economic activities taken up by the SHGs often require certain backward linkage. If basic assets for taking up of NRLM can be created under MGNREGS, it might be of help to the groups and their members. In the other side, MGNREGS needs NRLM for stronger access to entitlements, participation of poor women, more effective decentralized planning and execution. The assets created under MGNREGS can be better utilized when there is value addition done by other schemes of Line Departments.

Agri based Livelihood

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

1.1. Agriculture

Study shows that wherever MGNREGS works are being implemented effectively it is generating multiple environmental benefits, leading to improve water availability, soil fertility and increased crop production. The works are also helping reduce soil erosion and increase area under plantations. Hence it is the top most agenda of the State to devise strategy to improve the agriculture production and productivity. To take up agriculture based livelihoods following processes have to be adhered to;

1. Map the cultivable and the potentially cultivable land in the area through social and resource mapping (through GPDP using IPPE exercise). This exercise will help in identifying the type of lands available in the area like waste land, fallow land etc. These lands may lands owned by individual households or regularised under Forest Rights Act (FRA).
2. The lands need to be shaped and treated under a scientific plan to ensure that there is no waterlogging and there is optimum utilization of available water. This will be done through MGNREGS. This will not only ensure that the beneficiaries get wages but also enables them to develop their own assets, thus triggering further sources of employment.
3. Required topographical survey may be carried out before planning and executing land development works. Land development work should be planned and carried out on watershed approach i.e. ridge to valley approach. In construction of bunds and earthen check dams, earth should be taken from upstream side and at least 3-4 feet away from foot of the bund. If common land is not used for crop then the best way to develop is by constructing contour bunds to conserve rain water and soil which is economical, productive and durable.
4. Without provisioning water sources, the lands will become again unproductive. Hence through MGNREGS percolation tanks, canals, check dam, diversion wire etc. could be taken up in the area. Minor Irrigation department can take up irrigation works. Lift Irrigation can also be taken up by Odisha Lift Irrigation Corporation.
5. The next step is optimum utilization of water by encouraging the use of sprinklers, drip irrigation, plastics mulching for horticulture water conservation etc. which can be provided by Agriculture Department.
6. The individual households whose lands are developed under MGNREGS or other schemes could take up farming practices in the developed lands. The SHGs promoted by NRLM can take up collective farming through taking the land on lease basis. The working capital for farming could come up from NRLM.

7. Loans are available to farmers through several institutions and programmes, such as cooperative banks, lead bank district credit plan, Kisan credit cards (introduced by Gol to provide affordable credit to farmers), Primary Agriculture Credit Societies (PACS) and Large Area Multipurpose Cooperative Societies (LAMPS) for SC/ST farmers. However, there is a need to rationalize their borrowing, both in terms of the extent of finance required and the cost of that loan.
8. Agriculture department has provisions of providing seeds (maize, paddy, black gram etc) to the farmers on subsidy. Agriculture/Cooperation department gives subsidy on fertilizers to the poor farmers. Besides, MGNREGS has recently focussed more on taking up vermi compost and NADEP compost as bio fertilizers. These can also be planned in the area.
9. Activities and funds of several Departments can be converged to ensure good storage facilities. MGNREGS could provide storage centres and food grain storage can also be constructed by Food Supplies and Consumer Welfare Department/ Cooperation Department.
10. NRLM has to take a lead role in providing market related information to the farming communities. The thrust activity of increase in production and crop selection has to include the component of marketing and an investment in building the capacity of farmers to market effectively.

S I	Scheme	Department	Activities	Cost Norms
1	MGNREGS	PRD	1. Construction of dry fish yard 2. Provision for wage labour for construction of <i>MatsyajibiBasagraha Yojana</i>	1. Rs. 35,000 (Unskilled labour: material cost ratio of 25:75) 2. 90/95 person days per beneficiary
2	MatsyajibiBasagraha Yojana	PRD	Construction of Pucca House	• Pucca house of Rs 70,000/ Rs 75000
3	Infrastructure Support and Marketing Schemes	F & ARD	Godown, ice plant, cold storage, processing centre, water and electricity facilities etc.	• As per norms of the scheme
4	MGNREGS	PRD	Excavation of Multipurpose Farm Ponds	• Rs. 2,50,000 (Unskilled labour: material as per Estimate). The households shall be from the categories specified in Para 5 of the Schedule I of the Act.
5	National Mission for Protein Supplement (NMPS) National Fisheries Development Board assistance (NFDB)	F & ARD	Renovation of Tank, Subsidy assistance to fish farmers on Pisciculture promotion (Feeding, gardening of embankment etc.)	• As per provisions of the schemes
6	Short Term Credit Scheme	F & ARD	Input Loan (SHG)	• As per provisions of the schemes
7	Medhabruti Scheme	F & ARD	Scholarship to the children of Matsyajibi who have passed Matriculation	• As per provisions of the schemes

8	OLM	PRD	Promotion of Producers Groups, Forward and Backward Linkages, bank linkage	As per the approved proposal of OLM
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16.3 SKILL DEVELOPMENT PROGRAMME

Without doubt training provides increased employment opportunities. Today, even entry level roles in many industries require base level skill. By completing a training course, employment opportunities become wider. Thus, there is a need for a clear focus on improving the employability of rural youth of the district as agriculture failed to observe the educated youth which constitutes a major proportion of the district workforce. In view of this, DDMP, 2019-20 identified the following Skill Development Programme which will increase the employability of the district to sustain the livelihood of the rural population.

Sl	Department	Implementing Agency / Directorate	Skill Development Programmes
1	Skill Development & Technical Education (SD&TE)	Odisha State Employment Mission Society (OSEMS)	Placement Linked Skill Training Programme (PLTP)
		Directorate of Technical Education & Training (DTE&T)	MES / Apprenticeship / Craftsmanship
2	Panchayati Raj	Odisha Rural Marketing Society (ORMAS)	DeenDayal Upadhyaya Grameen Kaushalya Yojana (DDU-GKY)
			Rural Self Employment Training Institute (RSETI)
3	ST & SC Development	Odisha Scheduled Caste and Scheduled Tribe Development Finance Co-Operative Corporation Ltd. (OSFDC) / ITDA	Skill Development Training Programme (SDTP)
			Placement Linked Employability Training Programme (PLETP)
4	Housing & Urban Development (H&UD)	State Urban Development Agency (SUDA) / National Urban Livelihoods Mission (NULM)	Employment through Skill Training and Placement (ESTP) under NLUM
5	Agriculture	Directorate of Institute on Management of Agricultural Extension (IMAGE)	Skill Development Training Programme (SDTP) for the Youth of watershed area
		National Horticulture Mission (NHM)	Skill Development Training Programme (SDTP) under Modular Employable Skill
			Skill Development Training Programme (SDTP) in Horticulture Sector

6	Handlooms, Textiles & Handicrafts (HT&H)	Directorate of Textiles & Handlooms (DT&H)	Integrated Skill Development Scheme (ISDS)
			Skill Upgradation Training (SUT)
		Directorate of Handicrafts	Crafts Village Programme (CVP)
			Master Craftsman Training (MCT)
	Crafts Design, Development Training (CDDT)		
7	Transport	Government Driving Training School (GDTS)	Light Motor Vehicle Training
8	Fisheries & Animal Resources Development (FARD)	Directorate of Fisheries	Training on Fresh Water, Marine Fishery & Brackish Waters
9	Tourism	Tourism Department	Hunar Se Rozgar Tak (HSRT)
		Indian Institute of Tourism and Travel Management (IITM)	Skill Development Training Programme (SDTP)
		State Institute of Hotel Management (SIHM)	Skill Development Training Programme (SDTP)
10	Electronics & Information Technology (E & IT)	Information and Technology Department (ITD)	Skill Development in ESDM for Digital India
11	MSME	Development Commissioner MSME	Entrepreneurship Development Programme (EDP)
		Development Commissioner MSME	Entrepreneurship Skill Development Programme (ESDP)

16.4 LONG TERM HEAT WAVE MANAGEMENT PLAN

Balangir District has a history of extreme heat conditions and the District Administration has taken various preparatory and preparedness measures over the years to reduce the fatalities due to Heat Waves. The District has been witnessing an increasing trend of Heat Wave for the past few years due to rapid climate change and global warming. In the current year temperatures are soaring above 40 degrees in several parts of the District with high humidity which is making life difficult for the people. Advisories have been issued to take precautionary measures in addition to several preparedness measures by the Government for the vulnerable communities. These measures will need to be updated regularly in the coming days, if the estimates of Indian Meteorological Department (IMD) are to be believed which predict that, heat related fatalities will double in less than 20 years. Considering steady increase in temperature and frequent and prolonged occurrences of Heat Wave in the District, it was decided to include preventive and precautionary measures in the Heat Action Plan (HAP) 2023 to build resilience of the people in line with the local and livelihood needs. The HAP-2023 has been prepared and updated through a consultative process with inputs from the Line Departments. It is a fluid document which would be updated at regular intervals based on the changing climatic conditions

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 13th Finance Commission. NDRF has been constituted by replacing the National Calamity Contingency Fund (NCCF). It is administered by the National Executive Committee (NEC).

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

- An Inter-Ministerial Central Team is constituted and deputed for an on the spot assessment of damage and requirement of funds for relief operations, as per the extant items ad norms.
- The report of the Central Team is considered by the Inter-Ministerial Group (IMG) / A Sub-committee NEC constituted under section 8 of DM act, 2005, headed by the Home Secretary.
- Thereafter, the High Level Committee (HLC) comprising of the Finance Minister, the Agriculture Minister, the Home Minister and the Deputy Chairman, Niti Ayog considers the request of the State Government based on the report of the Central Team recommendation of the IMG thereon, extant norms of assistance and approves the quantum of assistance from NDRF.
- This is, however, subject to the adjustment of 75% 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 13th Finance Commission, the Government of Odisha has constituted the State Disaster Response Fund (SDRF) replacing the Calamity Relief Fund (CRF). The amount of corpus of the SDRF determined by the 13th Finance Commission for each year the Finance Commission period 2010-15 has been approved by the Central Government. The Central Government contributes 75% of the said fund. The balance 25% matching share of contribution is given by the State Government. The share of the Central Government in SDRF is released to the State in 2 installments in June and December respectively in each financial year. Likewise, the State Government transfers its contribution of 25% to the SDRF in two installments in June and December of the same year.

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

(Please refer annexure 21 for SDRF and NDRF Items and Norms)

17.3 Chief Minister Relief Fund (CMRF)

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

Cases Eligible for Assistance under CMRF

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

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.

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.

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

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

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.

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 Odisha 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 Odisha Relief Code.

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.

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.

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.

Table __: Different State and Central Government Schemes and Programms

SI No.	Name of the Scheme	Sector	Nodal Department	Objective of the Scheme
1	National Agriculture Insurance Scheme (NAIS)/ Rastriya Krishi BimaYojna (RKBY)	Crop Insurance	Agriculture Insurance Company of India (AICI)	To protect the farmers against the losses suffered by them due to crop failures on account of natural calamities, such as droughts, floods, hailstorm, storms, animal depredation, etc.

2	JanashreeVimaYojna	Life Insurance	Life Insurance Corporation Of India	The objective of the scheme is to provide life insurance protection to the rural and urban poor persons below poverty line and marginally above the poverty line.
3	Pradhan Mantri Jeevan Jyoti BimaYojna	Life Insurance		life insurance cover for death due to any reason
4	Pradhan Mantri SurkhyaBimaYojna	Life Insurance		Accidental insurance for death/full disability or partial disability
5	Postal Life Insurance (PLI) and Rural Postal Life Insurance (RPLI)	Life Insurance	Postal	life insurance under a number of schemes for employees in government, public sector banks and government-aided education institutions
6	Pradhan Mantri FasalBima Yojana (PMFBY)	Crop Insurance	Agriculture	Insurance coverage and financial support to the farmers in the event of failure of any of the notified crop as a result of natural calamities, pests and diseases.
7	Rashtriya Krishi Bima Yojana	Health Insurance	Agriculture	Crop insurance
8	Biju Krushaka Kalyan Yojana (BKKY)	Health Insurance	Health	financial support through health and accident insurance
9	Mahatma Gandhi BunakarBima Yojana	Accidental Insurance	Handloom and Textile	Insurance for accidental death and disabilities
10	Accident Insurance Scheme	Accident Insurance	Fishery	Assistant to fishermen towards hospitalization expenses during serious disease
11	Disease Control Programmes			Protective vaccination for various diseases to livestock and treatment of animals
12	Mahatma Gandhi National Employment Guarantee scheme	Mitigation measures	PR Dept., Govt. of India	Utilisation of MGNREGS funds to reduce the vulnerability of Panchayat vis a vis natural hazards such as drought, forest fire, cloud floods, etc

13	Pradhan Mantri Gram Sadak Yojana	Roads	Rural Works	To ensure that in case of disasters these roads get provision for restoration to ensure all weather connectivity
14	Indira Awas Yojana	Housing	Rural Development/ Panchayati Raj	To promote measures like application of Hazard resistant design in construction of IAY houses, appropriate sitting of IAY housing. Besides, fire proof houses to fire victim for special allocation quota.
15	SSA/RMSA/RUSA	Education	Human Resource Development	To induce institutional safety plan and development of Policy paper of institutional safety at various level of education.
16	National Rural Health Mission	Health	Health and Family Welfare	To ensure that the village Health Plan and the District health plan explicitly address the disaster risk reduction concerns in the vulnerable habitations and the vulnerable districts and the disaster management plan as per DM Act 2005 takes links itself to the District and village Health plans.
17	Finance Commission Grant	Infrastructure Development	PR Dept.	10% of the fund will be dedicated to disaster related projects

17.4 Roles of District Planning Committee on financial outlay on mainstreaming Disaster Risk Reduction (DRR) in development programmes.

The 73rd and 74th amendments of the Constitution provided an impetus to the process of decentralized planning having mandated devolution of powers to Panchayati Raj Institutions (PRIs) at village, block and district levels. Article 243ZD of the Constitution mandated the setting up of District Planning Committees (DPCs) for consolidating plans prepared by Panchayats and Municipalities in the district into District Plans. In view of this, Government of Odisha has ensured the formation of DPCs through the Odisha District Planning Committee Act, 1998 and subsequent Odisha District Planning Committee Rules, 2000 which have been enacted for effective planning process at the district level. Subsequently, DPMU, Balangir have been set up in the district for preparing the Comprehensive District Plans as per the Department Letter No.12774/dated.03.11.2015 of Planning and Coordination Department, Govt. of Odisha. The vision documents 2022-23 of Balangir stressed upon interventions to mitigate the critical risks. Further, under Section 38 (2) (e) of the DM Act, the State Government is to ensure that the integration of measures for prevention of disaster or mitigation have been incorporated by the departments of the Government of the State in their development plans and projects.

In this backdrop, the DDMP, 2022-23 focused on mainstreaming Disaster Risk Reduction (DRR) in development programmes.

Fund provision for Disaster Preparedness & Capacity Building

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

Chapter 18 Preparation and Implementation of DDMP

18.1 Methodology

Balangir District followed the following process in preparation of DDMP, 2023-24

Steps	What has done	Who were involved	Methodology
I	Review of DDMP and District Gazetteer	<ul style="list-style-type: none"> • Collector, ADM, Emergency Officer • DRRRC • District level officials 	<ul style="list-style-type: none"> • Past history of disasters to be discussed and documented • Extent of severity and damage to be recorded • The nature of the Warning issued to be analysed • The nature and extent of the rescue and restoration done, to be revisited
II	Situation Analysis	District and Block level officials	<ul style="list-style-type: none"> • Mapping the geography and topography of the risk prone areas, block-wise, GP-wise and village-wise • Demographic details to be recorded • Mapping of the habitation in the concerned areas • The natural resources to be marked on the maps • Listing all the livelihoods and properties • The existing risk prone/ safe infrastructure to be marked on the map
III	Hazard Analysis	District and Block level officials	<ul style="list-style-type: none"> • Identification of all possible hazards in the area based on past experience and available records • Identification of the most vulnerable areas with relation to threat to life, livelihoods and property
IV	Vulnerability Assessment	District and Block level officials	<ul style="list-style-type: none"> • Locations of the vulnerable areas are to be mapped separately • Identification of the vulnerable people such as, the elderly, the disabled, children and pregnant women, families living in thatched houses, fishermen at sea (if any), ailing people, etc. • Identification of property or assets which are likely to be affected, such as, cattle and other livestock, kachcha

			<p>houses, weak structures, pump sets, tube wells and other installations, crops, horticulture and plantations, boats, nets, etc.</p> <ul style="list-style-type: none"> • Identification of weak points on embankments (if any) • Marking the drainage system in the concerned area
V	Opportunity Analysis	District and Block level officials	<ul style="list-style-type: none"> • Identification of the existing resources which may help to reduce risks to life and property • Identification of the safe houses and buildings for shelter and storage • Listing the existing flood/cyclone shelters, if any • Identification of the elevated and up-lands which can act as natural barriers to protect livestock • Listing of the existing health and sanitation facilities • Identification of safe routes for evacuation • Identification of the sources of funds to carry out the preparedness activities

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

1	Collector/ADM	Issue of necessary directives to the line department. Provided critical inputs to the DDMP compilation team
2	DEO/DRRC	Desk Review of DDMPs, decisions of DDMA, DLNCC of previous years, District gazetteer, Contingency Plan of the departments Coordinated line department officials to provide information in time Consulted head of the departments for improvisation of DDMP, 2017.
3	Heads of Line Departments	Hazard, Vulnerability and capacity analysis of the district Provided necessary information and data. Review the proposed DDMP, 2017 Extended necessary supports and feedback for improvisation of DDMP, 2017.

18.3 Time lines for updating DDMP

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

18.4 Details of number of consultation and meetings, discussion with stakeholders

Rounds of discussion were held with the heads of the departments to prepare the DDMP for 2019-20. Inputs received from all quarters were taken care and a draft plan was prepared. The drafted plan was shared with the departments for review and provides their critical input for improvisation of the DDMP, 2022-23.

18.5 Implementation of DDMP, 2023-24

Efforts have been made to make the DDMP, 2023-24 useful and practicable which can be used by various departments to tackle the various types of disasters effectively to minimise the potential loss. Implementation of the DDMP, 2023-24 will govern by the SoP of the concerned departments and instructions issued by the Government from time to time.

Chapter – 19

Lessons learnt and Documentation

There have been multiple damaging events in the past, as shown in the database, but drought and heat waves are two important region specific disasters and most of the population is aware of the existence of past events. The following section described the past experiences of the district in managing drought and heat waves in the district.

19.1 HEAT WAVE, 1998

In the year 1998 the District faced an unprecedented heat wave situation, as a result of which 85 persons lost their lives. Though extensive awareness campaigns have largely reduced the number of casualties during post 1998 period, still a good number of casualties are being reported each year which have put the administration in very difficult situation. Insufficient preparedness in taking adequate ameliorative measures was the major reasons of high rate of causality during 1998.

19.2 FLOOD, 2006

Five Blocks namely Guduvella, Saintala, Deogaon, Titilagarh, Puintala were severely affected by flood during 2016. About 2.23 lakhs people were affected. To manage the flood situation people of 10 villages had been evacuated to temporary shelter places. Relief was being administered among the 6200 nos. of affected people. 19 free kitchen centres opened in 3 blocks and cooked food supplied to 5087 persons. 8 persons of Sasanpali village are rescued. 13 people comprising of 9 boatmen, 3 villagers and 1 girl have been safely rescued in village Turla of Guduvella block. Traffic in Adagaon- Bolangir road had been disrupted due to overflow of flood water at Kurala cause way. ODRAF unit from Jharsuguda had been deputed for rescue operation and they are back to Jharsuguda.

19.3. DROUGHT, 2015

The district has experienced 13 major droughts during the last 50 years. The 2015 drought, one of the severest in the district that affected 56 per cent of its geographical area, 36% of the total cultivable land and the livelihoods of 16 lakhs people and 5 lakhs cattle in the district. The district took proactive steps by forming teams comprising of field level officials of Revenue, Agriculture, Cooperation and Water Resources Departments and conducted sensitization and counselling camps at Gram Panchayat and village level in areas experiencing moisture stress. The district has created large water tanks through MGNREGA in every affected Gram Panchayat, wherever feasible. Large scale development of private lands of the affected farmers were taken up as a component under MGNREGS as an additional relief measure. Strict mechanism was established to monitor the money lending activities in rain deficit areas. Moreover, collective efforts were made to ensure assistance to the farmers as per the announcement made in the Drought Package declared by the Government on 15.10.2015.

FLOOD @ BALANGIR -2019: AN UNPRECEDENTED OCCURANCE....A DISASTER TACKLE SUCCESSFULLY... WITH THE MISSION OF “ZERO CASUALITY”

Balangir District is situated in the western part of Odisha, in India. The territory comprising the district of Balangir was part of the erstwhile Patna State. The district extends from 29°9" and 21°05" North Latitude and 82° 41 to 83°42" East Latitude. In 2011, Balangir had population of 1,648,997 of which male and female were 830,097 and 818,900 respectively. A majority of 88.03 percent of population lives in rural areas where as it is only 11.97 percent lives in urban regions of district.

The climatic condition of the district is generally hot (7°C to 48°C) with high humidity (79%) during March to June and cold during November to February. The monsoon generally breaks during the month of June. Balangir District generally affected by Drought like situation almost every year. During the year 2019, there was a drought like situation but due to sudden cloud burst and incessant rain for the period from 12th to 14th of August there was a flood situation in Balangir District.

In August, 2019 Balangir District received a total of 9708.4 mm of rainfall whereas on the 12th, 13th, 14th of August, Balangir District received 5662.10 mm of rainfall. In the intervening period of 24 hours i.e. 8.00 AM of 13.08.19 to 08.00 AM of 14.08.19 Balangir&Puintala received 555 mm and 333 mm of rainfall respectively. Due to this heavy downpour, Balangir District experienced flood, which marooned many areas damaging infrastructure (Roads & Bridges) and properties. Many roads (Urban/Rural/NH), Bridges, Electric Pole, Water Pipelines, Vehicles etc.were washed away and damaged.



Rescue & Relief



District Administration including line department swung into action and were kept in high alert. The Emergency Team headed by the Collector, Balangir was prepared with adequate stock of relief materials and was with constant communication with both field and line officials to prevent any casualties. The Emergency Team in a very limited time widely publicized the rainfall forecast through Mike

Announcement, Media, including Social Media, communicated to local Citizen Groups, thus creating awareness among the local population and relocating vulnerable people to safer locations. The prime objective of the District Administration was to prevent any casualties and with the leadership of Collector, Balangir, the District Administration prevented the same.

Balangir Municipality being an urban place with a sizeable population was affected the most due to the cloudburst and had to face severe urban flash flood. Due to sudden rise in water level, rescue & relief operations were undertaken at many places with the support of local Police Personnel (including ODRAF), Fire Service Personnel, Dist. Emergency Staff along with Volunteers from Biju Juba Bahini& willing volunteers of the society. They were the first to take active steps in evacuating and sheltering



of the affected people. Immediate relief assistance like Polythene Sheets, Dry Food along with Cooked Food were provided. Cooked Food was provided in the relief camps of Balangir Municipality for the next 7 days to the flood affected people, thus supporting them in rebuilding their life.

During the entire course of this deluge, Govt. of Odisha along with Special



Relief Commissioner, Odisha were in constant touch with the District Administration and had provided all necessary support and relief materials to prevent any eventuality and with timely action, proactive steps and well coordinated effort of the District Administration,

prevented any major casualty during the disaster. On 13th August, 2019 Hon'ble Chief Minister of Odisha along with Senior Officers of Lok Seva Bhawan held Video Conference with Dist. Officials of Balangir District and were apprised of the prevailing situation and assured all

necessary support to mitigate loss of life and property during the disaster.

This natural disaster took many by surprise and had a tremendous impact on the life and minds of the people of Balangir District. But the grit and resilience of the District Administration, the People Representatives, People of Balangir with adequate support from Govt. of Odisha, the District has withstand from this horrifying natural disaster and is on the path of restoring infrastructure and rebuilding the lives of people.



**A Case Study on:
Acceleration of COVID-19 Vaccination drive
by GO-NGO Coordination.**

Introduction:

The still unfolding devastation of COVID-19 pandemic extorted a heavy toll of death rates in India during its second wave. It is clear that the pandemic has left thousands of women as newly widowed, thousands of children as susceptible orphans and old aged senior citizen as helpless and vulnerable by losing the sole breadwinner of their families. They are now struggling to manage the double burden of grief and making a living with dignity. Due to the distressing social & economic impact and migrant crisis to the startling death toll, there were chances that, the COVID-19 pandemic in India would have unfurled number of other crisis. But in that crucial period the intellectuals, dignified scientists & researchers became able to successfully develop the “ COVID- 19 Vaccines”, which proved as a **Sanjewani or a Boon to the mankind** by breaking the chain of fatality.



The challenging fact is that, no entity can operate in isolation, be it the government, the private sector, or civil society. During the time of crisis, the government must ensure that all cogs in the wheel continue to work effectively by proper coordination, networking and convergence among themselves.

The Civil societies, local communities and non-profits making organizations must work and put effort together to enable the delivery of public services up till the last mile. While the rapid development of vaccines against COVID-19 is an extraordinary achievement, but at the same time successfully vaccinating the targeted population also offered many challenges. In Odisha the COVID vaccination drive for above 45 years aged population started from February 2021. But as per the base line report collected from the reliable sources as on 1st week of December 2021, the achievement of Muribhal block was limited to 70.01% of First dose and 28.9% of Second dose for the age group of 18 years and above. In this crucial period the interventions of JanamuktiAnusthan a leading Non-government Organisation working in Balangir District exhibited a positive change towards the COVID vaccination drive. With the hand holding support from Azim Premji Foundation, District Administration Balangir, Health & Family welfare Department-



Balangirand Block administration Muribahal, the organisation achieved significant success in this regard and demonstrated a visible impact.



Factors associated with low achievement rate of Covid vaccination:

During its field level survey, the organisation find out the following factors associated with low achievement rate of COVID Vaccination.

1. Non availability of vaccination team at the PHC level as provision for the same was only up to the CHC level, due to some technical issues and lack of sufficient manpower.

2. Although Mass awareness campaigning was carried on by the district & Block administration with the help of Health & Family Welfare deptt. in a mission mode but due to some blind belief and rumours spread in same villages regarding the side effect of post COVID Vaccination, people became reluctant to take Vaccine and consequently anti-COVID vaccination behaviours developed among them.

Implementation process



JanamuktiAnusthan, as a civil society organization came forward to address these problems to undertake the historic task of motivating and vaccinating the eligible targeted populations of Muribahal block by technical & man power support. During first and second weaves, the organisation had also successfully responded to covid-19 pandemic through relief services for critically affected people in the block with the support of Bharat Rural Livelihoods foundation

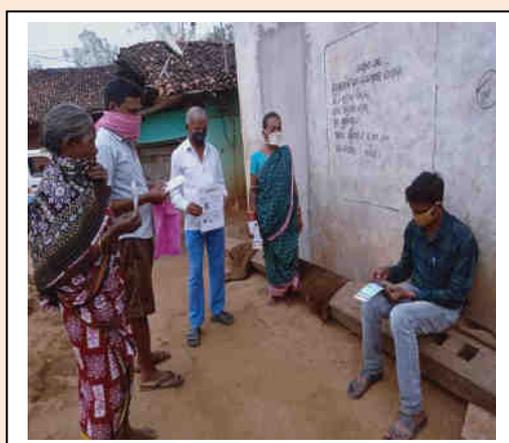
(BRLF) and Azim Premji Foundation. Based on these experiences, JanamuktiAnusthan sent a proposal to Azim Premji Foundation to extend their possible support for accelerating vaccination drive in the block. The project was finally approved and executed from 9th December 2021 in the Muribahal Block of Balangir District.

Objective: The key objective of the Project was to support the block administration to ensure 100 percent vaccination of eligible population within the period of 6 months.



Strategy of Implementation

- Deployment of Tika Sathi (Vaccine Volunteers), additional DEO, additional vaccinator, PHC supervisors and block supervisors with the project assistance.
- Training of Tika sathi (Vaccine volunteers) and vaccination team.
- Each Tika Sathi(Vaccine volunteer) was assigned for 4 to 5 villages under the PHC. They were ensuring all activities in daily basis related to community mobilization, micro planning, organisation of vaccination camp and other ground level activities in coordination with the local health care providers and PRI members.
- Execution of vaccination activities at the field level.
- Provision of separate vehicle facility and refreshment for additional vaccination team



- Assessment and mitigation of main reasons for vaccine hesitancy through community outreach
- Publicity through Miking and Awareness Rath
- Provision of vehicle facility for disabled and elderly people to reach the camp site.
- Organising vaccination camps fortnightly.
- Door to door vaccination activity by the team
- The good practices, challenges are being shared through social media i.e. what's

- app group to the key stakeholders
- The Supervision and monitoring procedure carried on from the PHC level. The supervisors were deployed and they reviewed the Tikasathi regarding the progress in a weekly basis.
- Similarly at the CHC level, the Block coordinator cum programme manager reviewed the day to day progress from the PHC supervisors.
- The GO-NGO coordination and networking expedited the entire process.

Outcome: As on 26th February 2022, the block has achieved 79.16% and 68.52% of 1st and 2nd dose of vaccination targets respectively.

SI No	Dose	Target	Cumulative achievement	Percent
1	1 st dose (18 years and above)	92877	74058	79.7
2	2 nd does (18 years and above)	74058	52770	56.08

Conclusion:

The positive attitude of the community to take vaccine without further query and panic, indicates the success of the Drive and the need to replicate it at other places where the vaccination ratio is very poor. In order to mitigate the fatality of COVID- 19 pandemic the only weapon with the mankind for survival is the “ COVID-19 Vaccines”. Thus it's high time to pledge for achievement of 100% Vaccination to provide a safety shield to the mankind for a sustainable survival. The greatest threat for the planet is the belief that someone else will save it, But the fact is that, now it's our responsibility to make it liveable and filled with lives, prosperity & Positive vibes by our constructive efforts and strong will power.

Chapter – 20

Drought

Drought is a recurring and single most insidious phenomenon in Bolangir District of Odisha. The recurrent drought in the district is mostly responsible for its 'chronic backwardness'. Since a significant proportion of cultivated land in Bolangir is under rain fed agriculture, the variability in date of onset of effective monsoon, higher initial and conditional probability of dry weeks are crucial factors for increasing drought vulnerability and risk in the region. The long-term normal rainfall in the district is also gradually declining. On the other hand, the increasing frequency of occurrence of the hazard is one of the major factors behind the rising level of drought vulnerability in the region, which is mainly due to "wide variability of rainfall from season to season", not as a result of deficiency of annual rainfall. Moreover, one of the prime reasons for increasing drought frequency and vulnerability in the study region is the neglect of the traditional water harvesting structures and poor development of irrigation facilities. Numbers of villages affected due to drought are 332, 358, 1783, 1765 and 1724 in 2009, 2010, 2011, 2015, 2017 & 2018 respectively. More than 50% villages of each block have been affected from 2009 to 2018. Drought hits to its maximum (36% of the cultivable area) extend during 2015, in which Patnagarh, Puintala and Belpada Blocks severely affected.

Bolangir District is primarily an agrarian economy where technological adoption is at a very low level. Due to lack of suitable irrigation facilities in many places, the success of harvest depends heavily on the monsoon arriving at the appropriate time and in adequate quantity. Perhaps, this remains as the main reason for the lack of application of new biochemical technology in the district. As a consequence, the occurrence of low yields and crop failures has become a common phenomenon. The growth of non-farm employment is also at a low level in this district. High level of illiteracy has aggravated the vulnerability of the people.

Drought Monitoring Cell, Balangir

The District Drought Monitoring Cell is headed by the Collector and District Magistrate, Balangir and Deputy Director of Agriculture is the Member Convener. The District Emergency Officer is the Coordinator. The District Collector shall constitute the cell by inducting all the stakeholders as is done in case of District Disaster Management Authority and the line Department officers like, District Head of Horticulture, Soil Conservation, Animal Resource and Development and KVK shall be added in the committee as per the Drought Manual. The Cell will function as per the Drought Manual and report regularly about its functioning and activities to the State Drought Monitoring Cell, OSDMA, Special Relief Commissioner, Odisha and Agriculture and Farmers Empowerment Department and Water Resources Department, Bhubaneswar.

Accordingly, the DMC has constituted in the District to close watch on Drought. And a SoPs has prepared.

Standard Operation Procedures (Sops) for Agriculture Department

- Daily Rainfall Recording Data will be monitored by the Departments.
- Drought delayed by onset monsoon must be closed watch and cropping pattern change will be advised to the farmers.
- Drought Assessment will be done on priority basis.
- Irrigation facilities will make available to farmers in drought prone areas.
- Sufficient stocks of seed will be available with Agriculture Department.
- Lift Irrigation and farm pond or water will be supply from deep bore wells.
- Use of drought tolerance rice varieties

- Cultivation of less water demand crop.

Preparedness before Monsoon by Irrigation Department

- Improvement of storage capacity of Tank through desilting Tanks.
- Construction of bunds across nallah to harvest rainwater by using sand bagging or cement plugs (bag filled with clay).
- Construction of Aquifer for ground water recharge.
- Construction of swales or trench in farm land for ground water recharge and for use of ponded water in shortage period.
- Construction of swamp (under surface tank)

During or after Monsoon period

- Monitoring of storage position of Reservoir (medium irrigation project, Minor Irrigation Project)
- Series of temporary bunds across river to meet water demand to make lift irrigation points operational.

Panchayat level Disaster Preparedness and Drought Management Workshop will be conducted at GP Level.

In order to evolve a long-term strategy and develop a community based coping mechanism for the disasters, especially for slow-onset disasters like drought, a Community Based Disaster Preparedness and Drought Management training programme may be organized in collaboration with all line Departments of the District. Farmers will be aware on the basic concepts, terminology and models of Disaster Risk Management and also on planning and developing effective strategies and systems for Disaster Risk Reduction (DRR) especially for disasters like drought. Further to this the need and ways of developing effective processes for preparedness planning in order to improve disaster response and recovery program will be discussed. The capacity building programme also highlighted existing creative practices and coping mechanisms which are being used by the communities, during the time of drought. The intent was also to spell out possible ways by which Community members could use the WHSs and the local available resources to address the problems of drought.

Training of Water Users Group on post maintenance of community assets

To build community resilience against future droughts, awareness will be conducted in drought affected areas to facilitate formation of water and asset user groups. This group capacity has been built to understand the need for conservation and maintenance of the water structures and promotion of equitable and judicious water usage. Water User Association and Disasters Management Teams (DMTs) have been formed in the villages. The Role and responsibilities of WUAs and DMTs were clearly discussed with them. The WUA members are mutually agreed to take care of the constructed WHS and also agreed to leverage funds for its maintenance through MGNREGA work. Irrigation and Agriculture Department will organize training program in different villages for Water User Groups on group dynamic, equal representations, role and responsibilities in operating and managing community assets especially WHS constructed and renovated. Farmers came together and planned for sharing the water resources in equitable manner. This would create a balance in use of the water resource, which would sustain the demand of the groups. The group has set an indicator of local capacity enhancement.

Drought Vulnerability

Agriculture Areas						
Sl. No.	Name of the Block	Total Area (in Hectares.)	Cultivable Area	Net Sown Area (2021-22)	Irrigated Area (2021-22)	Areas affected by Drought
1	Bolangir	54263	20135	19259	7088	12171
2	Deogaon	60361	20175	19055	9518	9537
3	Gudvella	30740	13115	12655	12346	309
4	Puintala	38076	21995	21847	5770	16077
5	Loisingha	35991	21215	20123	7101	13022
6	Agalpur	32683	21675	21257	12683	8574
	DAO,Bgr	252114	118310	114196	54506	59690
7	Patanagarh	72998	41120	38817	8963	29854
8	Belpara	54174	35810	34799	7152	27647
9	Khaprakhol	60342	29000	27102	10067	17035
	DAO, Ptg	187514	105930	100718	26182	74536
10	Titilagarh	40017	25825	25358	11959	13399
11	Saintala	63440	21650	20296	9040	11256
12	Muribahal	43572	27140	26398	6610	19788
13	Bangomunda	34777	23310	23310	19213	4097
14	Tureikela	36066	23310	23060	4919	18141
	DAO, Ttg.	217872	121235	118422	51741	66681
	Bolangir Dist.	657500	345475	333336	132429	200907

Cultivable Areas of the Balangir District

Sl. No.	Name of the Block	Average Annual Rain Fall (in MM)	Ground Water Level (mbgl)		Cultivated Area (In Hectares)				
			(based on 61 sample wells)		Paddy		Non- Paddy		Total
					Rain fed Area	Irrigated area	Rain fed Area	Irrigated area	
			April	August					
1	Agalpur	1289.8	8.72	3.58	6749	7286	6497	1113	21645
2	Bangomunda	1338.6	6.83	4.45	9941	2349	9706	234	22230
3	Belapara	1289.8	4.94	3.59	12306	4639	15178	595	32718
4	Bolangir	1327.5	4.35	4.30	6685	2795	9528	1077	20085
5	Deogaon	1365.7	3.75	2.00	7382	2148	9538	1072	20140
6	Gudvella	1291.0	5.55	2.82	3684	2796	5748	853	13081
7	Khaprakhol	1289.8	6.51	3.86	9380	3750	13014	786	26930

8	Loisingha	1287.0	5.22	3.05	7750	2520	10041	864	21175
9	Muribahal	1323.5	4.05	3.40	13817	1852	10843	204	26716
10	Patanagarh	1289.8	5.50	3.00	18659	3055	17112	537	39363
11	Puintala	1183.2	3.51	2.37	11888	2444	6679	562	21573
12	Saintala	1204.2	4.50	2.35	8139	2976	9477	220	20812
13	Titilagarh	1379.1	7.05	4.45	12415	3883	8445	267	25010
14	Tureikela	1186.1	5.61	4.00	8144	2530	12058	266	22998
Total		1288.9	5.44	3.37	136939	45023	143864	8650	334476

Irrigation Potential for Kharif - 2021

Sl. No.	Block	Large and Medium Irrigation Projects		Minor Irrigation Project		Lift Irrigation Point(River)		LI points (Deep bore wells)	
		Units	Ayacut Area in Ha.	Units	Ayacut Area in Ha.	No.	Ayacut Area Ha.	No.	Aayacut area
1	Bolangir			16	2052	47	1032	821	1642
2	Deogaon			19	1329	71	1500	603	1206
3	Gudvella			3	156	117	2532	248	496
4	Puintala			21	1880	38	844	271	542
5	Loisingha		58	17	1466	47	1048	1189	2378
6	Agalpur		5391	10	500	143	3308	825	1650
	DAO, Bgr	0	5449	86	7383	463	10264	3957	7914
7	Patanagarh			17	2305	82	1800	1373	2746
8	Belpara		558	11	2549	39	836	543	1086
9	Khaprakhhol		757	15	1991	86	1870	882	1764
	DAO, Ptg	0	1315	43	6845	207	4506	2798	5596
10	Titilagarh		3547	7	1614	111	2396	51	102
11	Saintala			11	622	75	1732	469	938
12	Muribahal		2175	6	1118	24	532	487	974
13	Bangomunda		13255	6	822	57	1208	489	978
14	Tureikela			6	1207	25	532	322	644
	DAO, Ttg.	0	18977	36	5383	292	6400	1818	3636
	Bolangir Dist.	0	25741	165	19611	962	21170	8573	17146

Chapter – 21

Road Accidents

Balangir District have 20 nos. and 15 nos. of Traffic Congestion Areas Accident Prone Areas respectively in various stretches of State and National highways. Caution points and villages/habitations adjoining to such accident prone areas are summarized below.

Habitations adjacent to accident prone areas

Sl. No.	Stretch of Road (From - to)	Length in Kms.	No. of Traffic Congestion Areas	No. of Accident Prone Areas	No. of villages/ habitations adjacent to accident prone areas
1	56/00 to 58/00 Km (NH-26)	2.00	1	NA	Loisingha
2	73/00 to 78/00 Km (NH-26)	5.00	1	NA	Bolangir
3	96/0 to 97/500 Km (NH-26)	1.50	1	1	Deogaon
4	98/0 to 100/00 Km (NH-26)	2.00	1	1	Deogaon
5	105/600 to 107/0 Km (NH-26)	1.40		2	Kareldhua Village
6	109/0 to 111/0 Km (NH-26)	2.00	2	1	Saintala
7	117/0 to 118/0 Km (NH-26)	1.00	NA	1	Luhurapali village
8	125/0 to 126/0 Km (NH-26)	1.00	1	1	Belgaon village
9	0/0 to 01/690 Km (NH-57)	1.69	1	NA	Bolangir
10	6/0 to 7/0 Km (NH-57)	1.00		1	Malamunda
11	22/800 to 23/800 Km (NH-59)	1.00	1	1	Bhoipada village
12	58/200 to 59/200 Km (NH-59)	1.00	1	1	Near Rigdol village
13	0/500 to 0/700 Km (SH-42)	0.20	1	1	Adarshapada, Kandpali
14	6/00 to 112/00 Km (SH-42)	106.00	6	4	Ulba, Chatuanka to Alishan , KV College to Dhamandanga, Punjipathar Temple
15	0/00 to 2/500 Km (SH-16)	2.50	2	NA	Bargaon Chowk & Kalahandi Chowk
15	0/00 to 0/500 Km (SH-16)	0.50	1	NA	Titilagarh town

Again 7 nos. of Black spots has identified in the Balangir District by RTA.

Sl. No	Name of the Black Spot	Length in KMs	Police Station
1	Tanla Chowk (SH-42)	1 KMs	Belpada
2	Dhublapada (SH-42)	1 KMs	Patnagarh
3	Shantipada Chowk (SH-42)	1 KMs	Town PS, Balangir
4	Puintala Chowk (NH-57)	1 KMs	Puintala
5	Matkhai Temple (NH-26)	1 KMs	Sadar PS, Balangir
6	RTO Chowk (NH-26)	1 KMs	Town PS, Balangir
7	Bhainsa Chowk (SH-42)	1 KMs	Patnagarh

Safety Precautions for (Two Wheelers and Four Wheelers)

- Awareness creation among public on Transport Rules (Driving Regulations)
- Driving within the prescribed speed limit.
- Put on Helmet and other safety measures.
- Avoid Alcohol (Don't Drink and Drive) and reckless driving.
- Never use Cell Phones while Driving.
- Know your Traffic Signals, Lights, Safety rules before ply on the Roads.

Bus/ Two Wheelers Accident

- Police/RTO/Volunteers/Public will inform the Ambulance Services (112) within the Golden Hours i.e. within one hour of casualties.
- Police is the first stakeholders under RTA to take up the case for preliminary investigation.
- Police will upload the photographs/videos of Accidents in i-RAD Apps.
- RTO will investigate the vehicles details and identify the causes of accident and upload the same in i-RAD Apps.
- After details investigation report upload in i-RAD, the Road Authorities will take necessary measures deemed to be fit.
- Injured persons should be shifted to Hospitals by Ambulance.

Explosive /LPG Carrying Vehicles

- Fire Department near the accident spots will be informed immediately.
- Police will be informed and upload necessary reports in i-RAD Apps.
- If, LPG/Explosives is leaking then, entire accident spot will be sealed.
- Road blockage should be cleared by the SH/NH Authorities to avoid any Traffic congregation.
- Scientific Team from Industrial Unit shall be deployed to the accident spots for quick remedial measures.

Chapter-22

Train Accident

CLASSIFICATION OF A RAILWAY ACCIDENT AS A DISASTER.

Disaster in the Railway context is defined as a major train accident leading to serious casualties, long duration of interruption to traffic and cannot be tackled with own resources but requires help from other non-Railway resources. In case of a serious accident the Administration would take a conscious decision whether the situation is to be classified as a Disaster or not.

DISASTER PREPAREDNESS - AVAILABILITY OF RESOURCES.

Railways are generally self-reliant in carrying out rescue and relief operations as a result of having a well organized set up. However, major accidents, involving heavy casualties in remote areas or in difficult terrain or under adverse weather conditions are possible to be managed efficiently by mobilizing non-Railway resources also. Disaster Management mechanism in Railways can be maintained at a high level of preparedness and efficiency by keeping all resources readily available and in good fettle. Resource simply both Railway and non-Railway men and material including medical personnel, transport, volunteers, Police and fire services. Details of these resources, their location, contact numbers and other details have been identified, compiled and placed in a "Data Bank". This Data Bank is available in the Divisional DM Plans of Sambalpur Divisions. These have also been available in the website of East Coast Railway (www.eastcoastrailway.gov.in) for ready access. Resources available in case of a major accident depending on the time frame within which these can be made available after an accident.

Following Resources are available for Trains carrying Passengers.

- First Aid Box available with the Guard.
- Fire Extinguishers are available in Brake Van, AC coaches, pantry cars and Locomotives.
- Portable Telephones, available in Locomotives and with Guard
- Walkie-Talkie and CUG mobile phones with Guard and Loco Pilot.
- Cell Phones/Mobile communications with Railway employees and passengers
- Emergency lighting box available with the Guard.

Quick Responders after any Railway Accident.

- The Guards/Drivers of the Train will inform the Station Master of nearby Railway Station.
- The Station Master will inform the Railway Protection Force (RPF), General Railway Police (GRP), Railway Hospitals and Accident Relief Medical Van.
- The Station Master will inform the Railway Division, Sambalpur.
- Then the DM, Railway division will inform the Local District Administration, Police, Fire, Medical (Ambulance) Services, NGOs, and Volunteers for quick response.
- The Station Master will take help of local villagers and other resources like Tractors/JCB.
- First aid treatment will be provided to the injured person and severe injured will be referred to the nearest Hospitals.
- Help Line number will be function for providing information to the relatives of the injured person.

OSDMA MAPS OF BALANGIR DISTRICT

BOLANGIR DISTRICT



Legend	
●	District Headquarter
■	Block Headquarter
	District Boundary
	Block Boundary
	Railways
	National Highways
	Major Roads
	Other Roads
	Rivers/Waterbody



**MULTIHAZARD MAP OF
BOLANGIR DISTRICT**



BOLANGIR

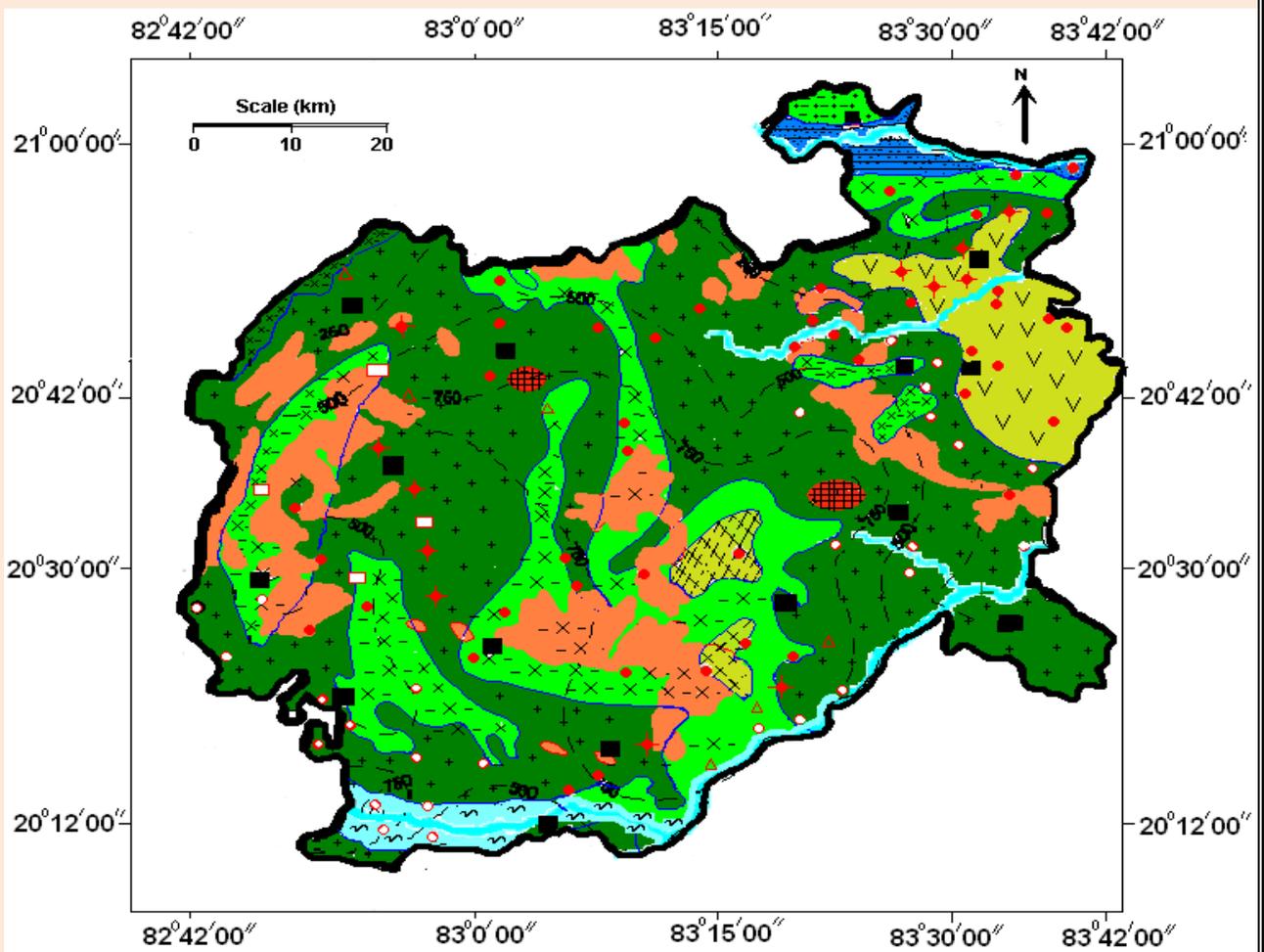


ODISHA

- DISTRICT HEADQUARTER
- DISTRICT BOUNDARY
- W & C_HEQ_LNFZ
- W & C_M(A)EQ_LFLZ
- W & C_M(A)EQ_LNFZ
- W & C_M(A)EQ_MNFZ
- W & C_M(B)EQ_LNFZ
- W & C_M(B)EQ_MNFZ
- W & C_VH(B)EQ_LFLZ
- W & C_VH(B)EQ_LNFZ
- W & C_VH(B)EQ_MFLZ
- W & C_VH(B)EQ_MNFZ

W & C_VH(B) = Wind and Cyclone Very High damage risk Zone B (50 m/s)
 W & C_H = Wind and Cyclone High damage risk Zone (47 m/s)
 W & C_M(A) = Wind and Cyclone Moderate damage risk Zone A (44 m/s)
 W & C_M(B) = Wind and Cyclone Moderate damage risk Zone B (39 m/s)
 EQ_M = Earthquake Moderate damage risk Zone III
 EQ_L = Earthquake Low damage risk Zone II
 FLZ = Flood Zone
 NFLZ = No Flood Zone

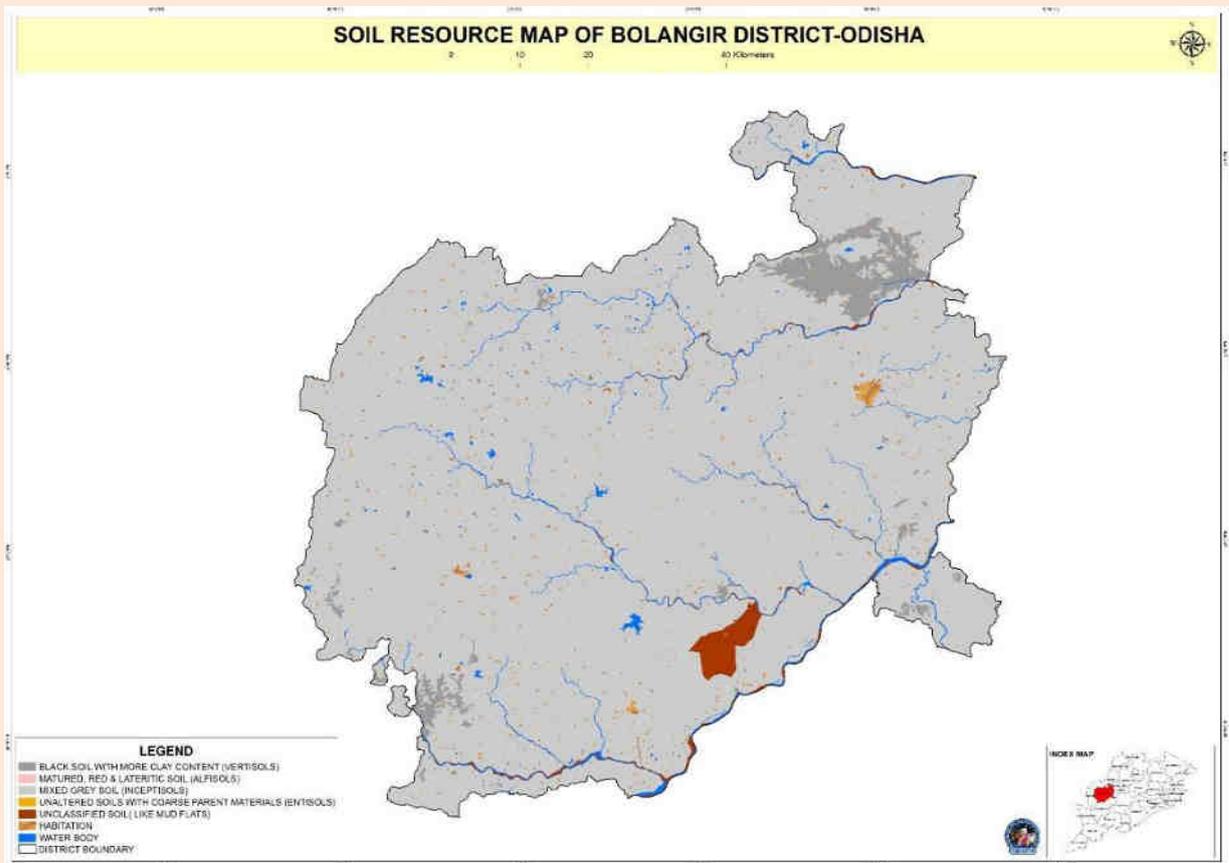
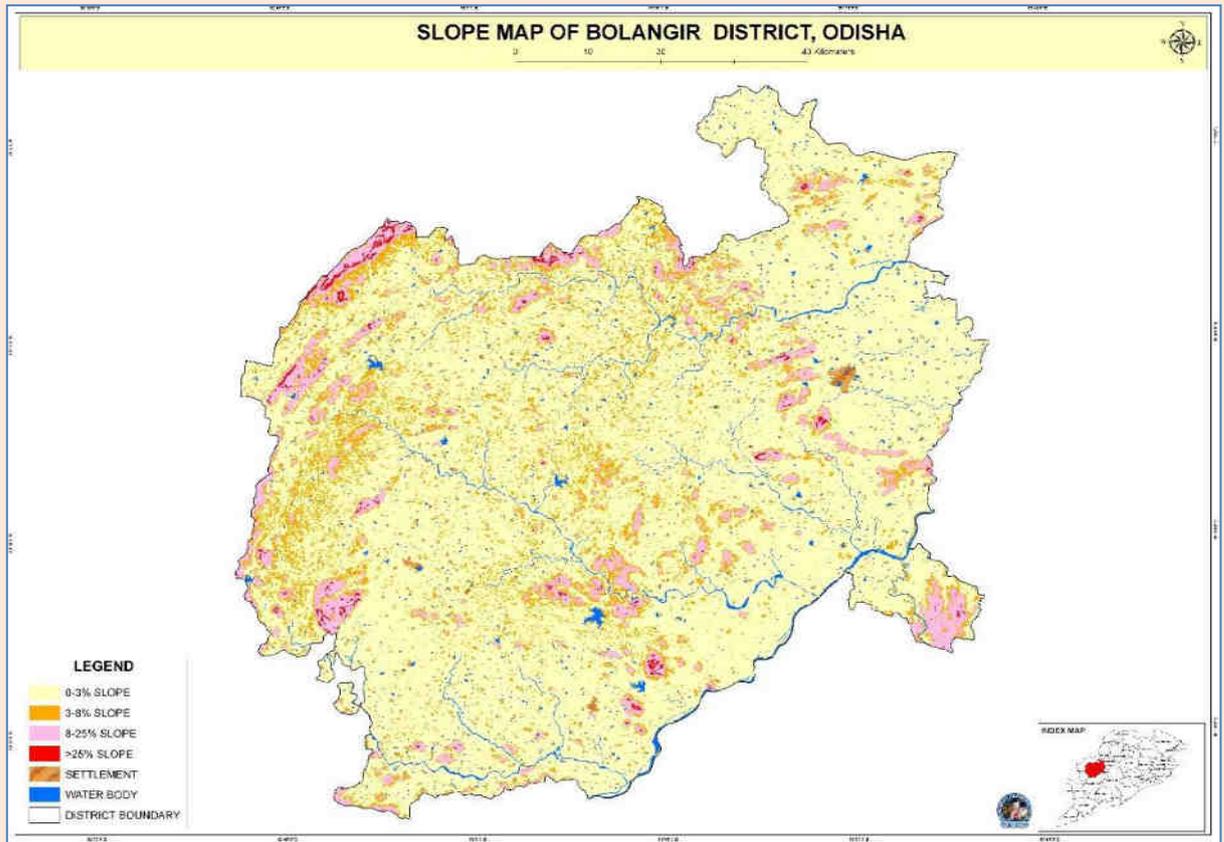
Source : Vulnerability Atlas, published by BMTPC
Government of India



LEGEND

Age Group	Lithology	Index	Hydrogeological Conditions
Recent to Sub Recent Lower Gondwana	Alluvium		Flood plain, Unconfined aquifer, Yield 5 lps
	Sandstone, Shale Conglomerate		Moderately Thick, Discontinuous Confined to semi confined aquifer, Yield less than 5 lps
Pre-cambrian	Anorthosite/ Gabbro		Ground water is restricted to weathered residuum and fracture zones, low to moderate yield within 3 lps
	Charnockite		
	Bonai Granite / Quartzite		Ground water is restricted to weathered and fractured horizon. Yield upto 10 lps
	Khondalite & Calc silicate		
	Granite & Granite Gneiss		Most pervasive crystalline aquifer ground water occurs in weathered and fractured horizon. Yield upto 25 lps.
			Hilly Areas without Productive Aquifer except in pockets. Yield less than 1 lps
			Fluoride Contaminated Area
			EC Contour

Discharge range of Bore holes	
	<1 lps
	1-3 lps
	3-5 lps
	5-10 lps
	>10 lps



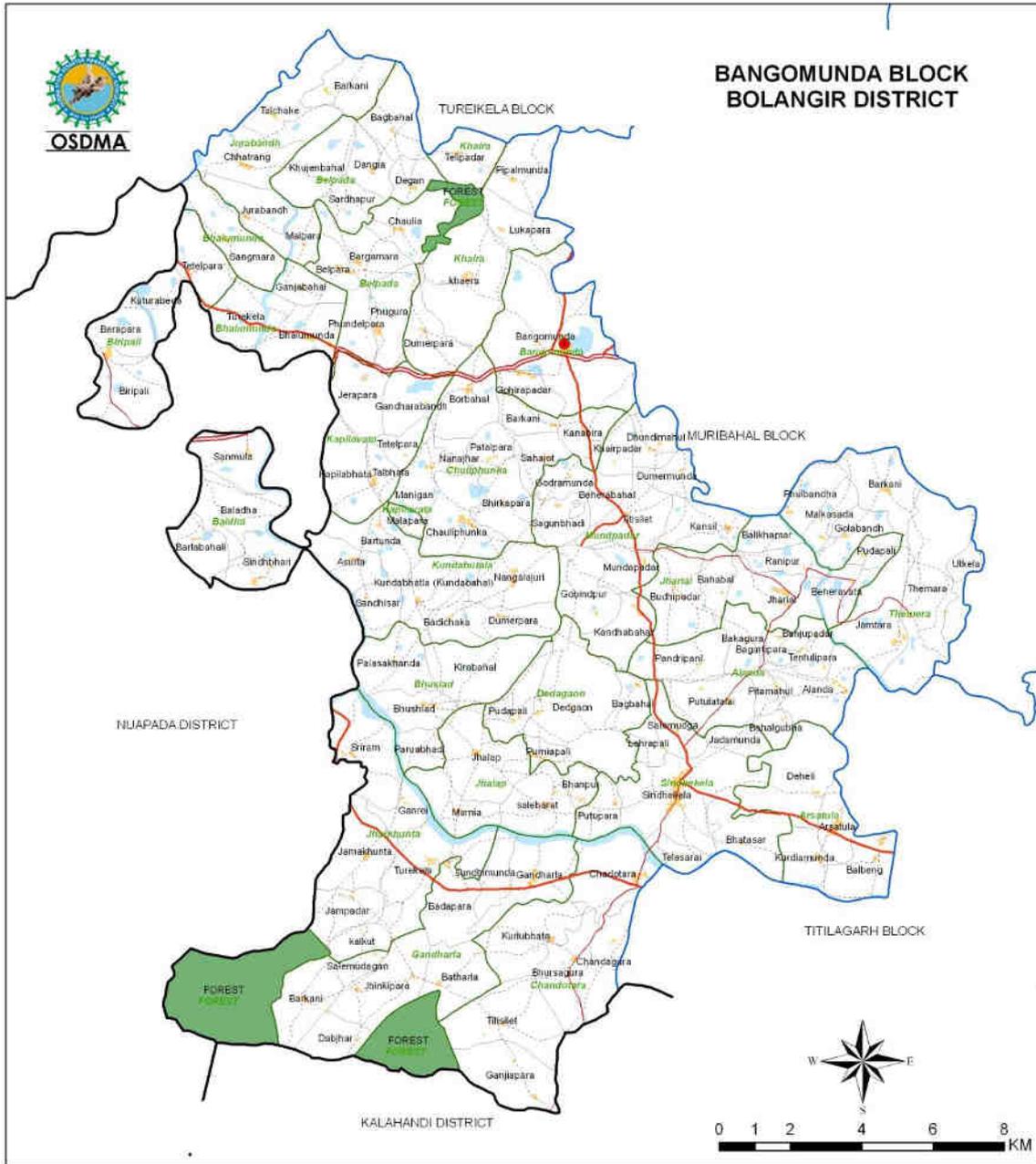
AGALPUR BLOCK BOLANGIR DISTRICT



Legend	
●	Block Headquarter
	Railways
	National Highways
	Major Roads
	Other Roads
	District Boundary
	Block Boundary
	GP Boundary
	Village Boundary
	Rivers/ Waterbody
	Settlements
	Forests

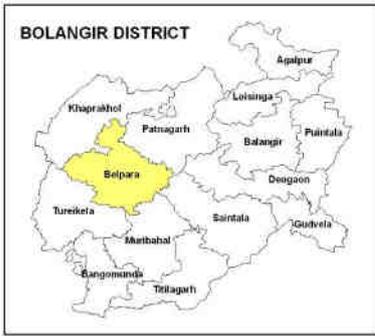


BANGOMUNDA BLOCK BOLANGIR DISTRICT



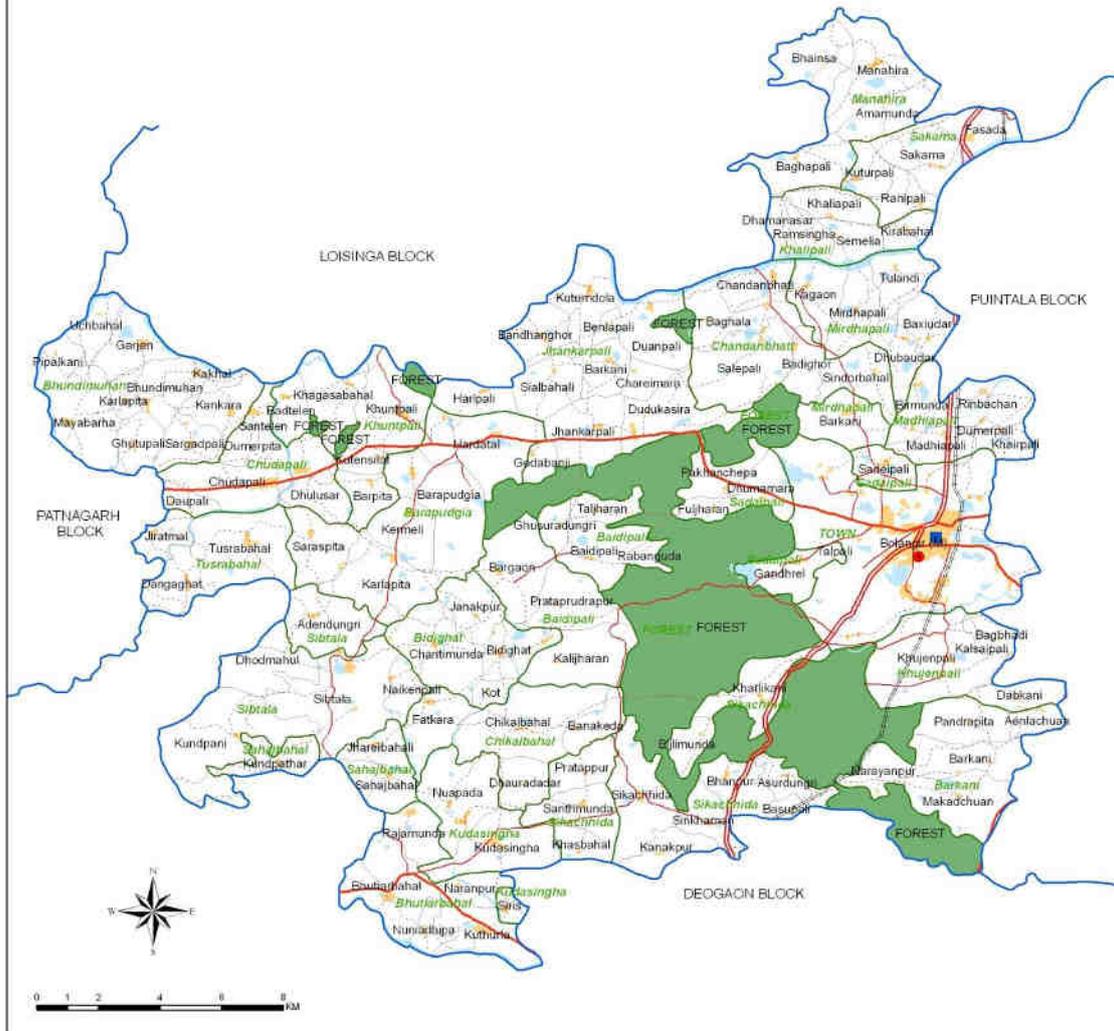
Legend	
●	Block Headquarter
	Railways
	National Highways
	Major Roads
	Other Roads
	District Boundary
	Block Boundary
	GP Boundary
	Village Boundary
	Rivers/ Waterbody
	Settlements
	Forests

BELPARA BLOCK BOLANGIR DISTRICT



Legend	
●	Block Headquarter
	Railways
	National Highways
	Major Roads
	Other Roads
	District Boundary
	Block Boundary
	GP Boundary
	Village Boundary
	Rivers/ Waterbody
	Settlements
	Forests

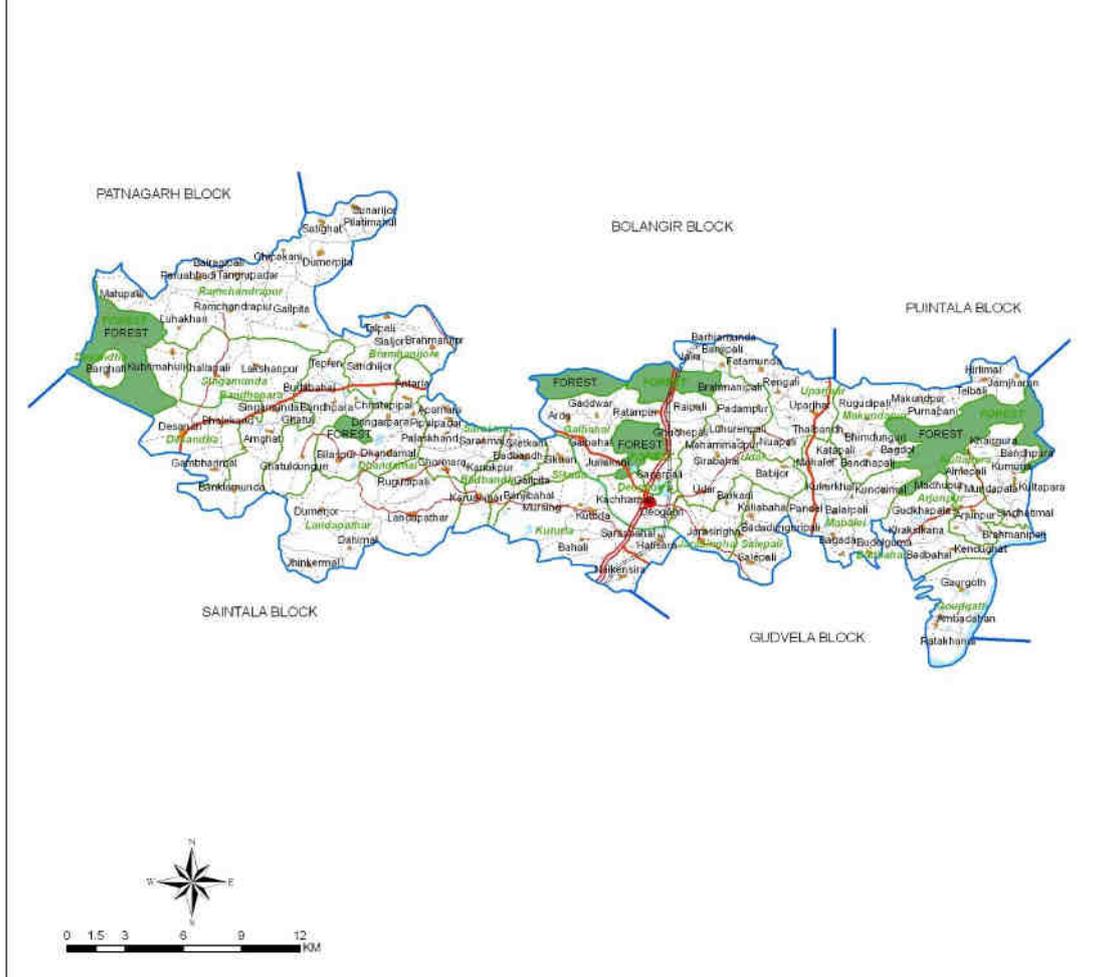
BOLANGIR BLOCK BOLANGIR DISTRICT



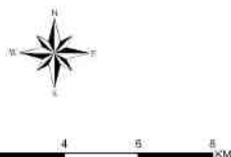
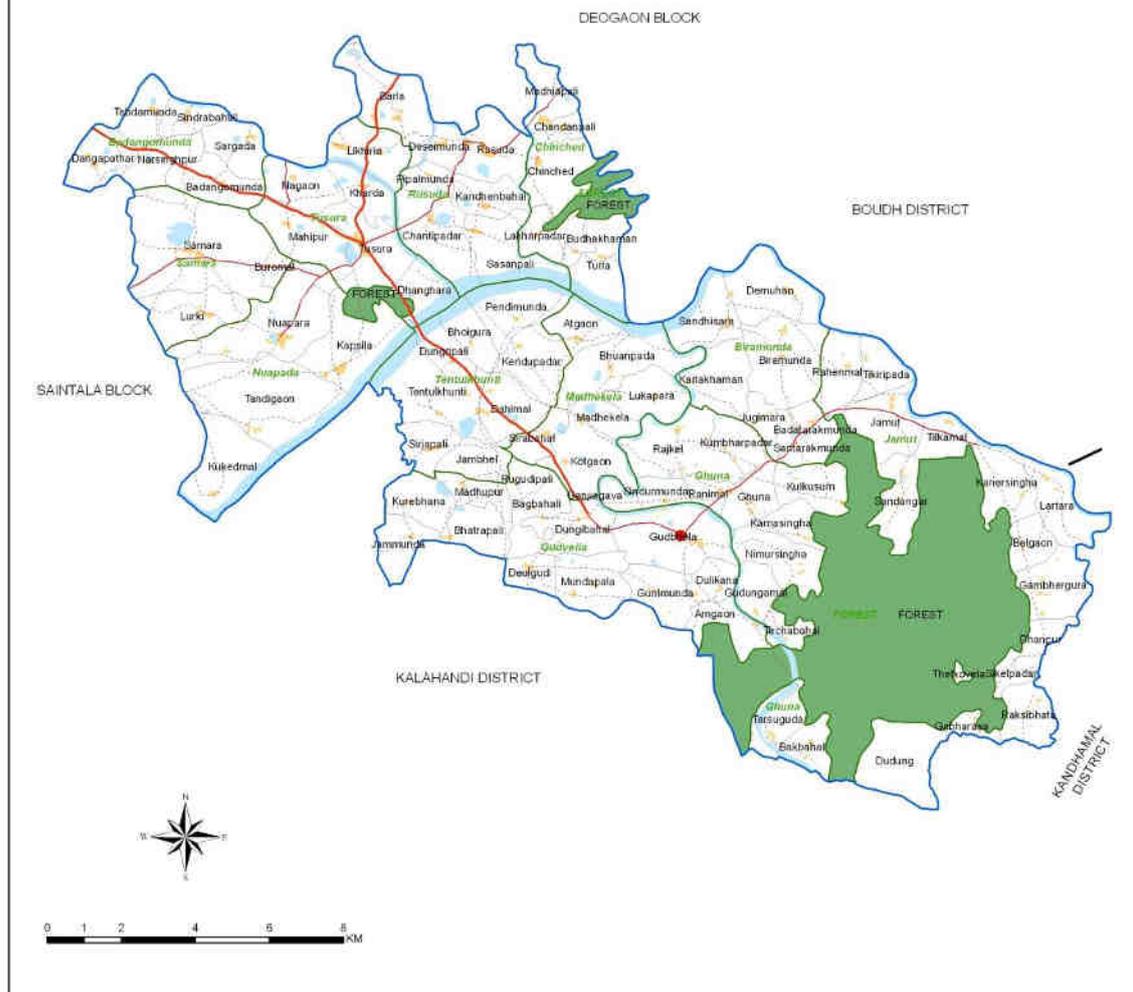
Legend

- Block Headquarter
- Railways
- National Highways
- Major Roads
- Other Roads
- District Boundary
- Block Boundary
- GP Boundary
- Village Boundary
- Rivers/ Waterbody
- Settlements
- Forests

DEOGAON BLOCK BOLANGIR DISTRICT

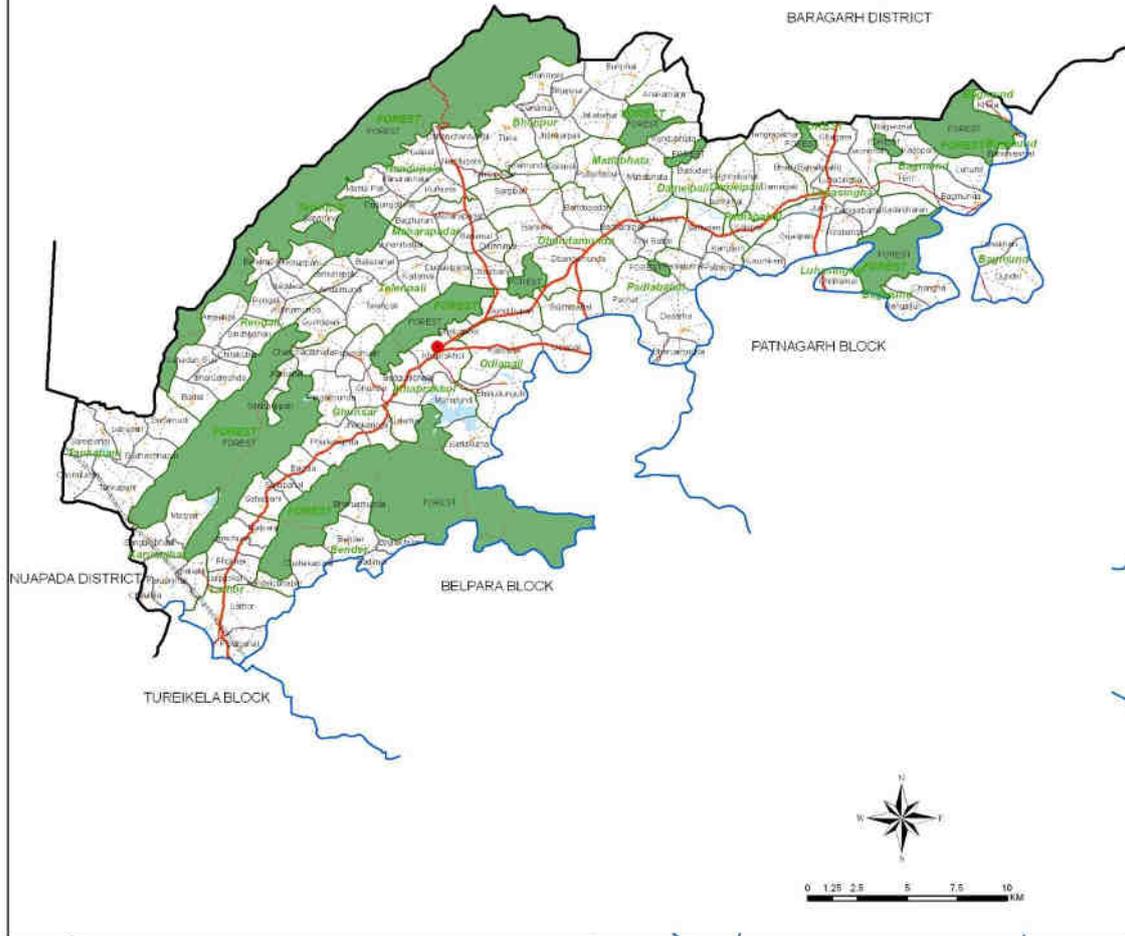


GUDVELA BLOCK BOLANGIR DISTRICT



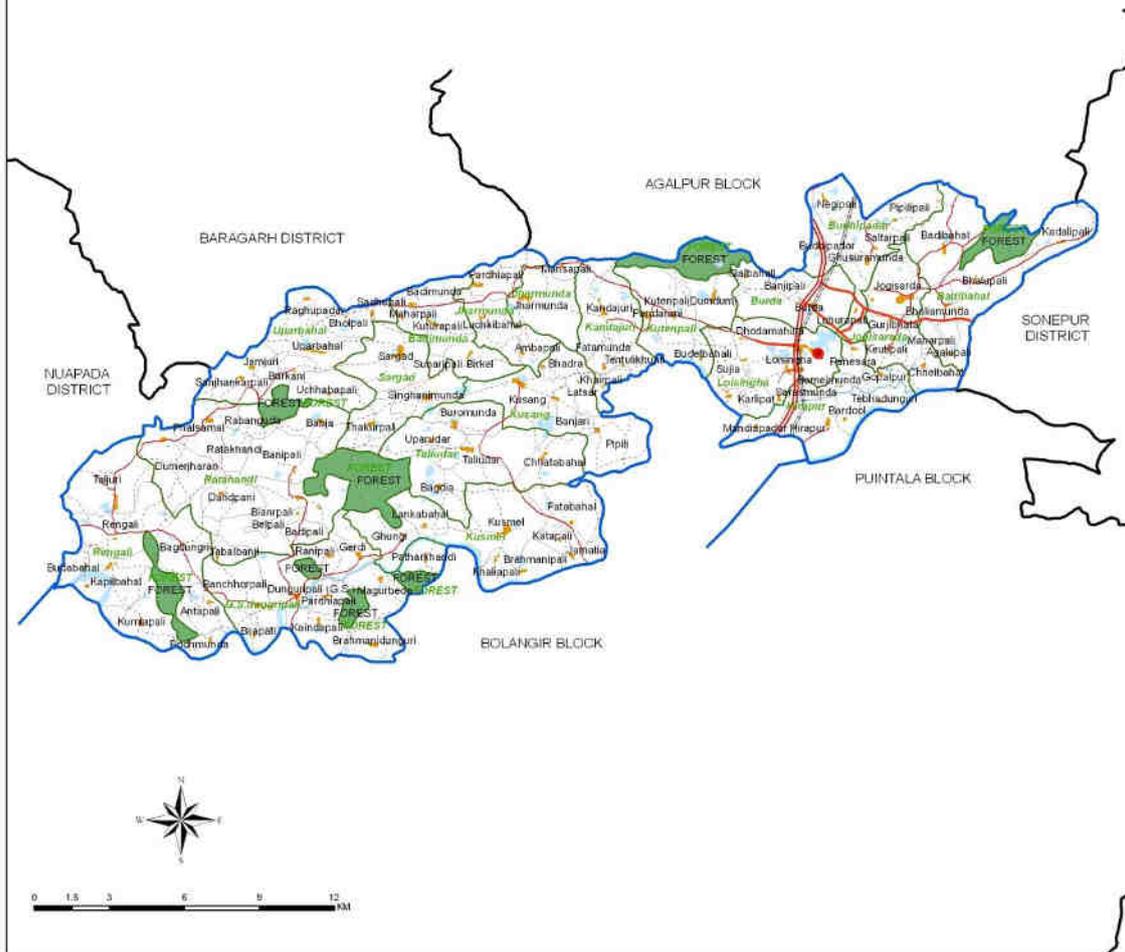
Legend	
●	Block Headquarter
	Railways
	National Highways
	Major Roads
	Other Roads
	District Boundary
	Block Boundary
	GP Boundary
	Village Boundary
	Rivers/ Waterbody
	Settlements
	Forests

KHAPRAKHOL BLOCK BOLANGIR DISTRICT



Legend	
●	Block Headquarter
	Railways
	National Highways
	Major Roads
	Other Roads
	District Boundary
	Block Boundary
	GP Boundary
	Village Boundary
	Rivers/ Waterbody
	Settlements
	Forests

LOISINGA BLOCK BOLANGIR DISTRICT



Legend	
●	Block Headquarter
	Railways
	National Highways
	Major Roads
	Other Roads
	District Boundary
	Block Boundary
	GP Boundary
	Village Boundary
	Rivers/ Waterbody
	Settlements
	Forests

MURIBAHAL BLOCK BOLANGIR DISTRICT



Legend	
●	Block Headquarter
	Railways
	National Highways
	Major Roads
	Other Roads
	District Boundary
	Block Boundary
	GP Boundary
	Village Boundary
	Rivers/ Waterbody
	Settlements
	Forests

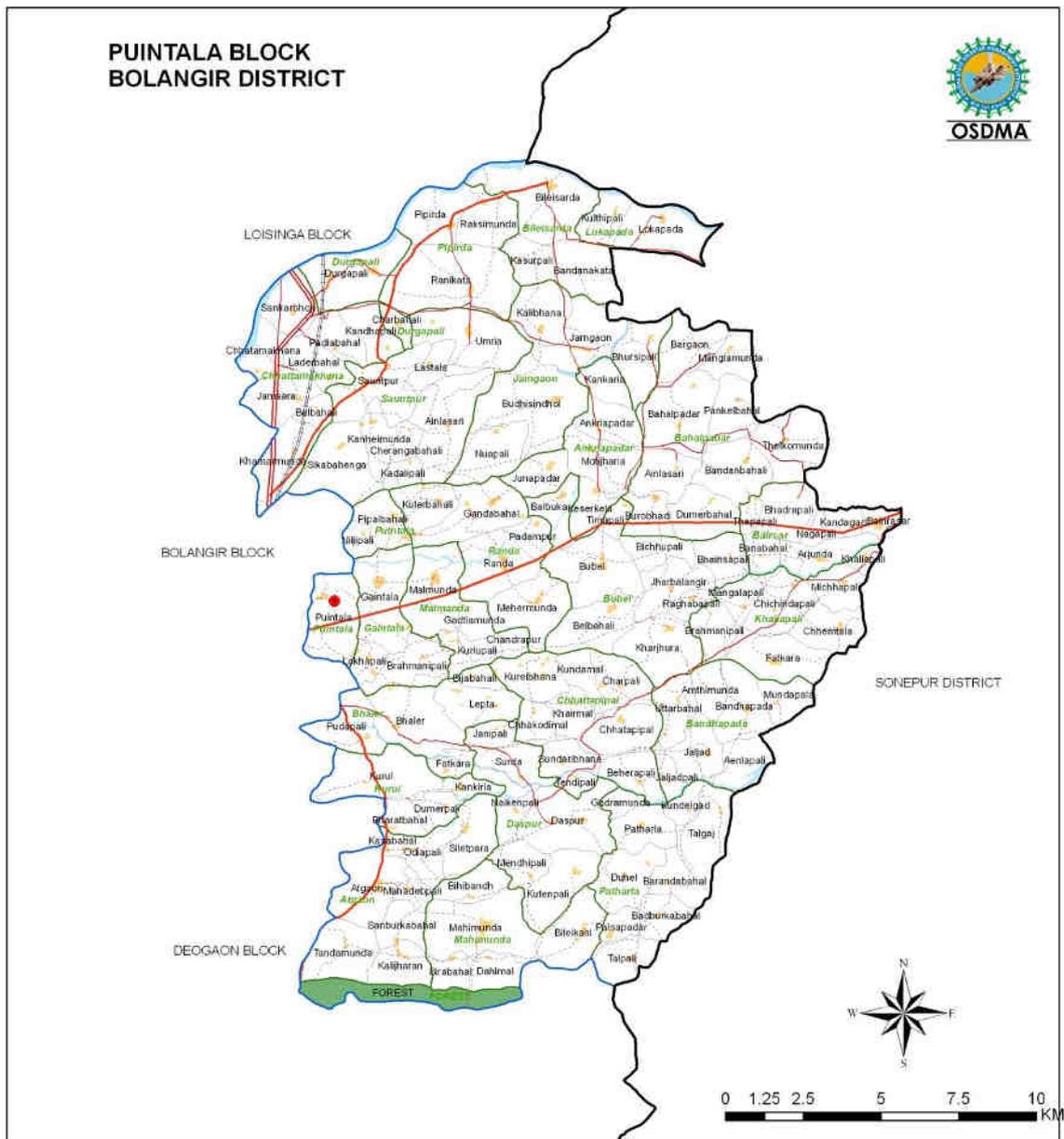
PATNAGARH BLOCK BOLANGIR DISTRICT



OSDMA



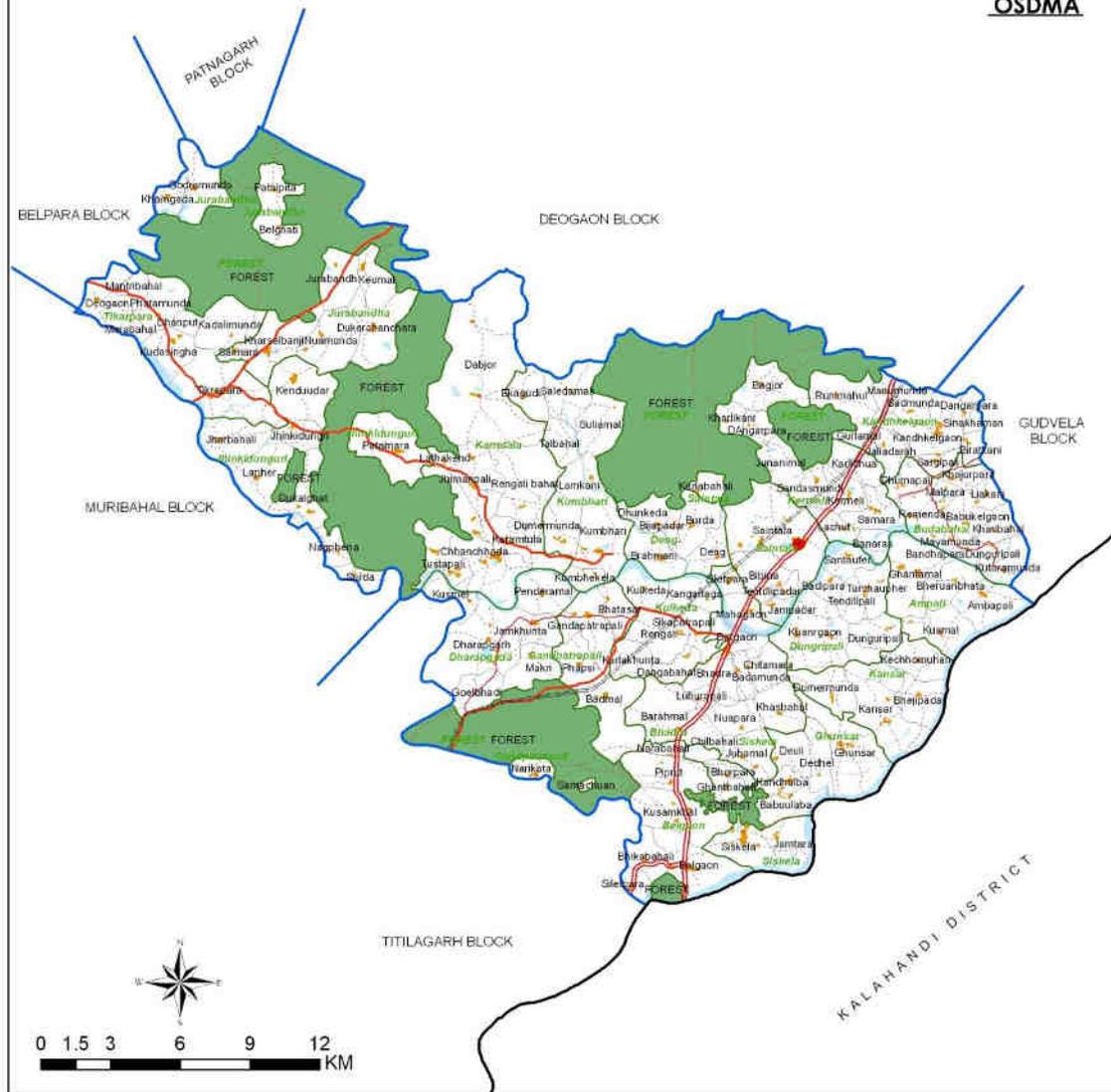
**PUINTALA BLOCK
BOLANGIR DISTRICT**



Legend

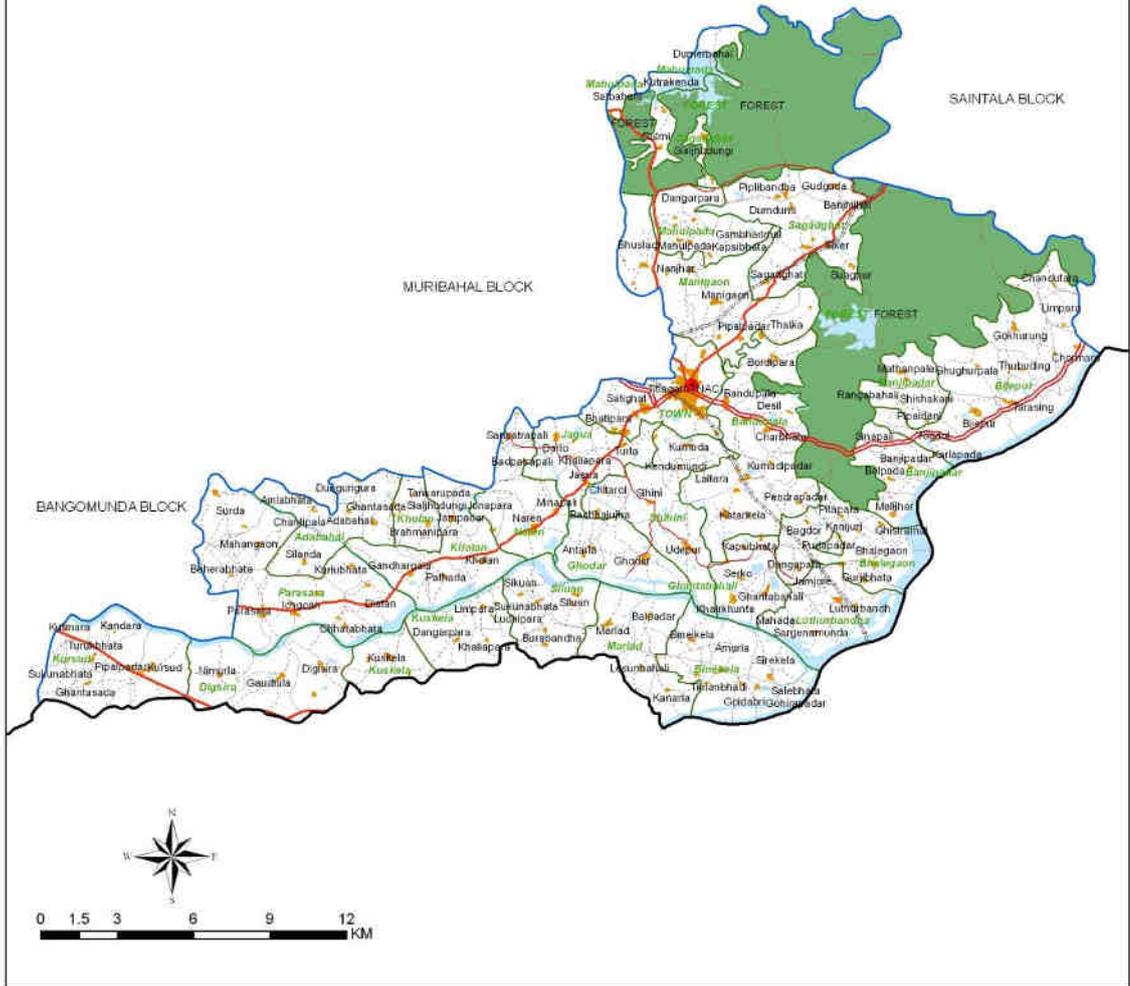
- Block Headquarter
- Railways
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- Other Roads
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- Block Boundary
- GP Boundary
- Village Boundary
- Rivers/ Waterbody
- Settlements
- Forests

SAINTALA BLOCK BOLANGIR DISTRICT



Legend	
●	Block Headquarter
	Railways
	National Highways
	Major Roads
	Other Roads
	District Boundary
	Block Boundary
	GP Boundary
	Village Boundary
	Rivers/ Waterbody
	Settlements
	Forests

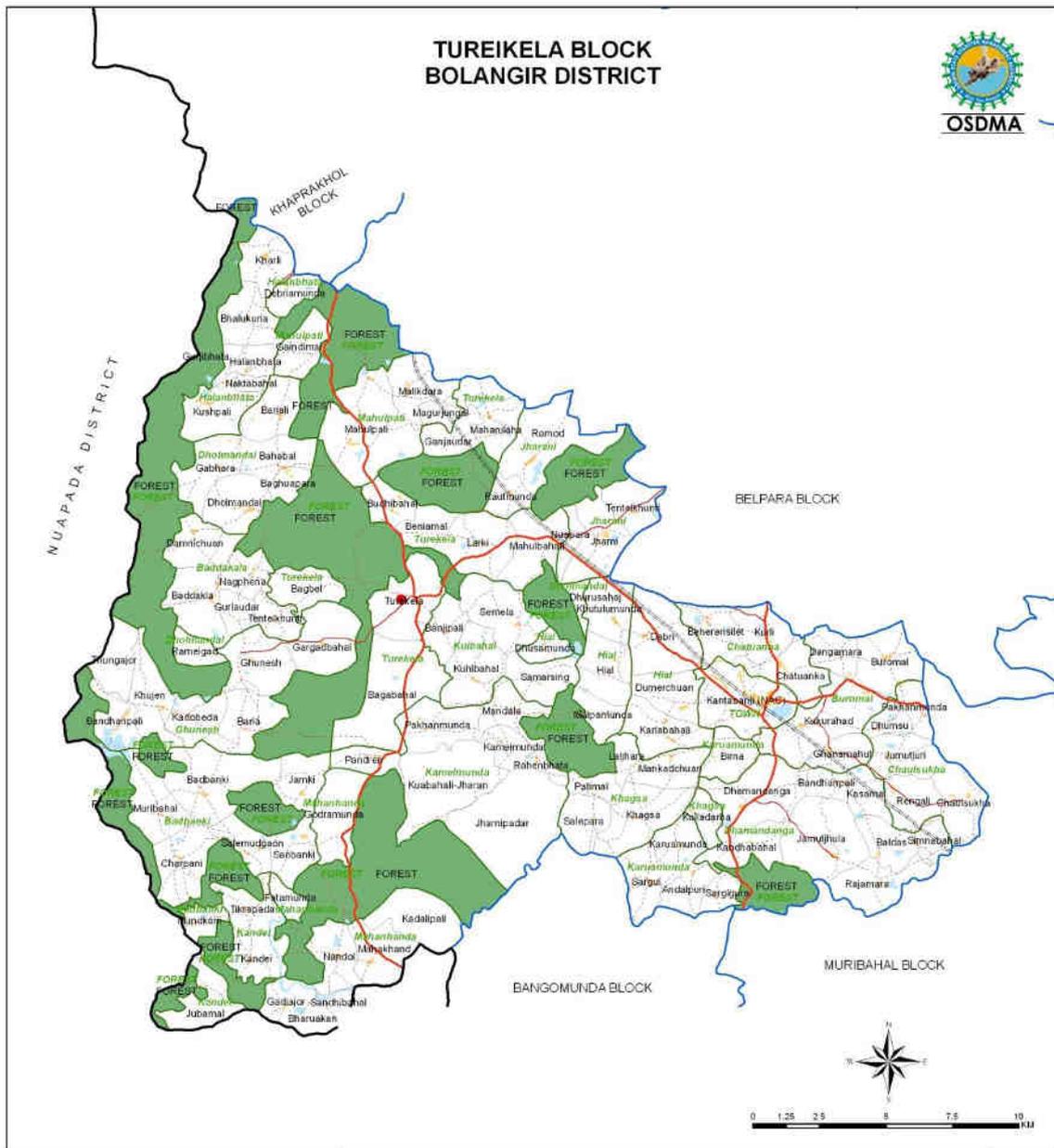
TITILAGARH BLOCK BOLANGIR DISTRICT



Legend

- Block Headquarter
- Railways
- National Highways
- Major Roads
- Other Roads
- District Boundary
- Block Boundary
- GP Boundary
- Village Boundary
- Rivers/ Waterbody
- Settlements
- Forests

TUREIKELA BLOCK BOLANGIR DISTRICT



Legend	
	Block Headquarter
	Railways
	National Highways
	Major Roads
	Other Roads
	District Boundary
	Block Boundary
	GP Boundary
	Village Boundary
	Rivers/ Waterbody
	Settlements
	Forests

Control Room No at Block/ULB Level in Balangir District.		
Sl. No.	Name of the Block	Control Room Contact Numbers
1	Agalpur	7847062985
2	Balangir	9437572049
3	Belpada	7008093122
4	Bangomunda	8763800230/9437143363
5	Deogaon	8249454438
6	Gudvella	8328884952
7	Khaprakhol	8763478985
8	Loisingha	8327779174
9	Muribahal	8144738397
10	Patnagarh	9348597913
11	Puintala	8895003604
12	Saintala	9937829818/7008651628
13	Titilagarh	9437892972/9348011020
14	Turekela	8249873053
15	Balangir (M)	6652232790
16	Titilagarh (M)	8908004337
17	Patnagarh(NAC)	9178143536
18	Kantabanji(NAC)	9853363417
19	Tusra(NAC)	7978330685
Control Room No of DEOC, Collectorate, Balangir		
1	DEOC, Balangir	`06652230969
2		`06652232452
3		9438776394