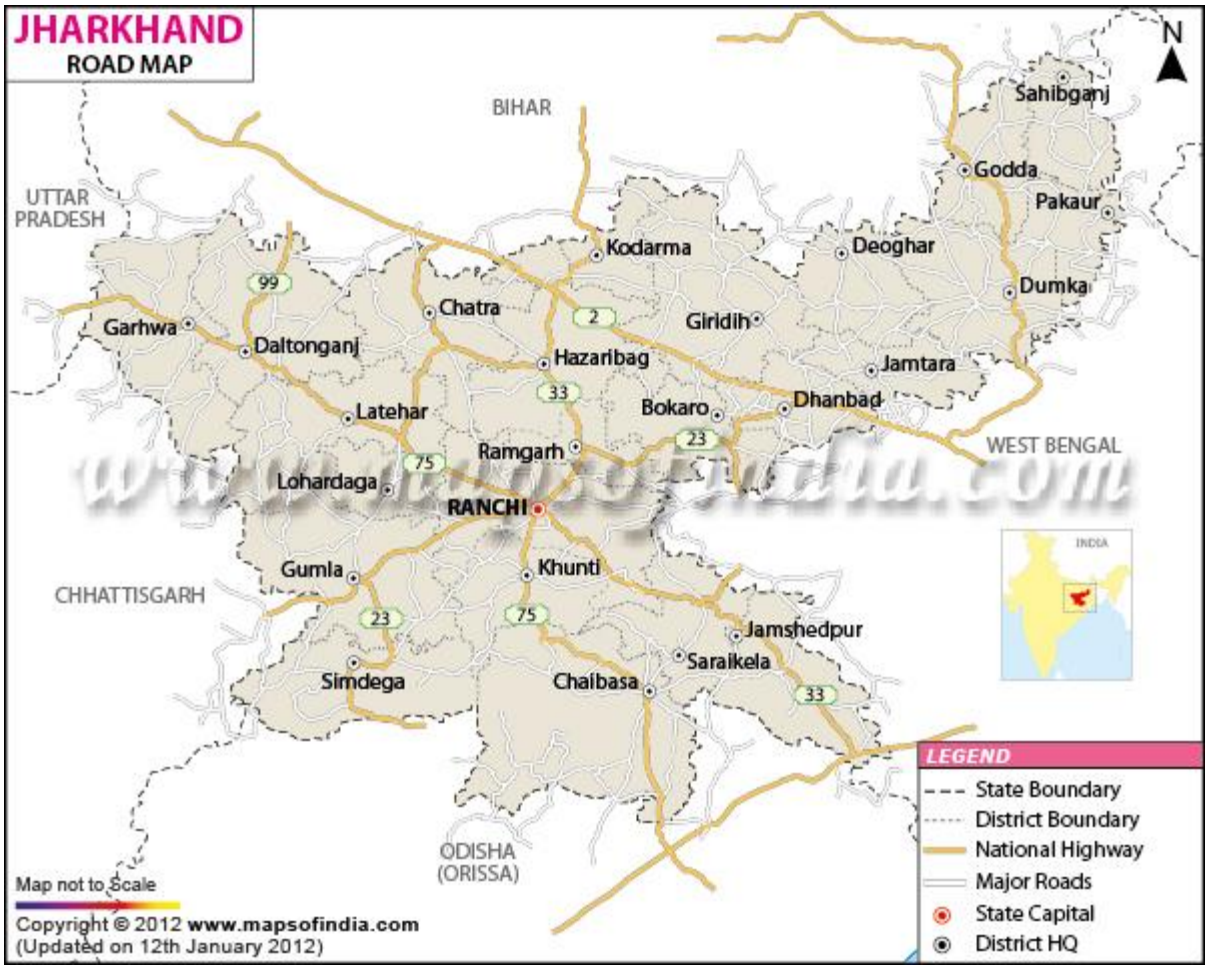
NIDM

Jharkhand

National Disaster Risk Reduction Portal



Map showing the boundary and road network

(Source: http://www.mapsofindia.com/maps/jharkhand/jharkhandroads.htm)

1. STATE PROFILE[1]

1.1 General[1]

The state of Jharkhand was created as 28th state of the Indian Union by the Bihar Re-organization Act on 15th November 2000. The state covers 7.970 million hectare area with a population of 26.9 million (as per census 2001). The state has sizable tribal population (26.3%). Jharkhand is historically affected by different types of Natural and Human Disasters. Govt. of Jharkhand has taken proactive steps to strengthen its mitigation, preparedness, response, recovery and rehabilitation strategies to reduce the risk of disasters in the state by creating State Disaster Management Authority at State level, District Disaster Management Authority in all the 24 Districts. Apart from this State Executive Committee is proactively strategizing and functioning for the Disaster Management of the state. State Steering Committee has also been formed at the

department level to govern the Govt. of India and UNDP sponsored Disaster risk reduction program in the state.

Disaster management department under the aegis of State Executive Committee is facilitating the mainstreaming of Flagship development program to reduce the risk of Disaster in the state. The Department has taken several initiatives to strengthen the convergence between different line departments and institutions of excellence in state to develop sustainable strategy for various disasters in the state. Government of Jharkhand is well aware of the need to integrate flagship programs for enhancing the coping capacity of community up to village level in the state.

1.2 Physiography [1]

The spatial extent of Jharkhand State is approximately 21° 55' to 25° 35' North Latitude and 83° 20' to 88° 02' East Longitude. The state is land locked and it shares its boundary with Orissa on the southeast, Chattisgarh on the southwest, Bihar on the north, West Bengal on the east and Uttar Pradesh on the northwest. It comprises of the Chotanagpur Plateau, which forms a part of Deccan bio-geographic province. It is a hilly undulating plateau characterized by predominantly tropical forests and tribal settlements. The State is endowed with natural resources that need to be conserved and utilized in a sustainable manner for all-round development of the state in general and the marginalized tribal population in particular. The total geographical area of the State is 79.70 lakh hectares, out of which 23.22 lakh hectares (29.33%) are under forests; 5.66 lakh hectares (7.12%) are barren lands; 7.24 lakh hectares (9.10%) are put to non-agricultural use; 0.90 lakh hectares (1.15%) are under pastures & other grazing lands; 3.07 lakh hectares (3.86%) are cultivable wastelands; 0.88 lakh hectares (1.11%) are under miscellaneous trees and groves; 12.04 lakh hectares (15.14%) are current fallows; 8.45 lakh hectares (10.63%) are under other fallows; and 17.95 lakh hectares (22.58%) are the net sown area. The number of electrified villages is 14667 (45.0 per cent of the total villages). 26.0 per cent (8484) per cent of the total villages are connected by roads. The lengths of the National Highways and the State Highways are 1006 and 4662 kms respectively.

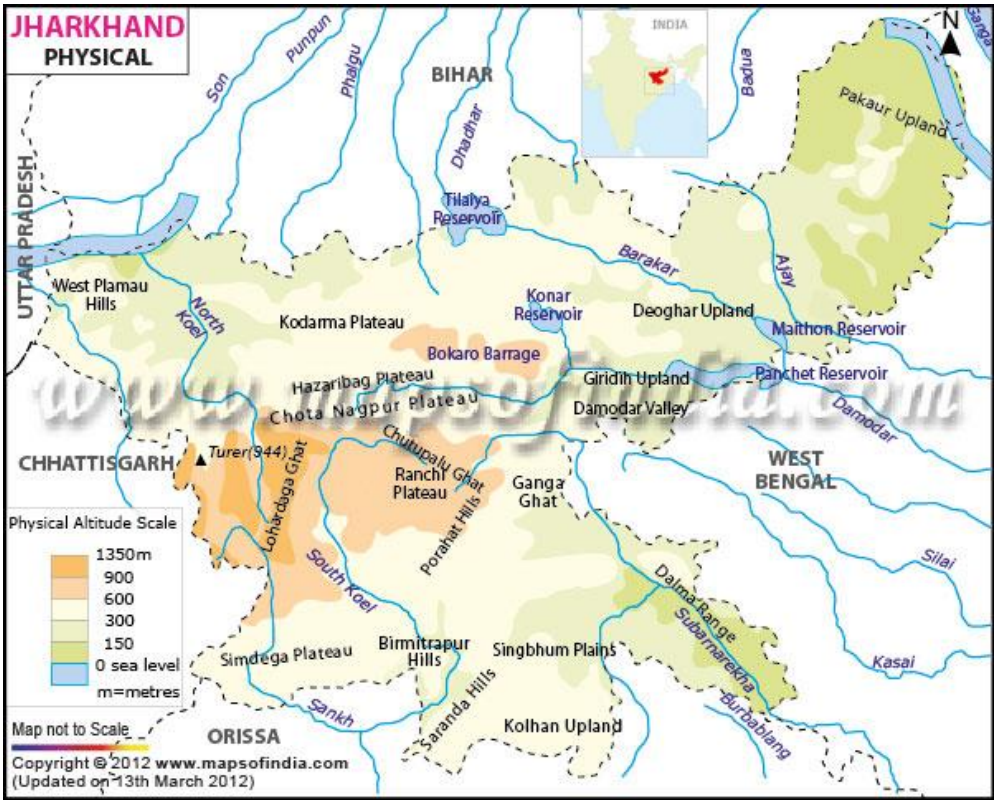
The state has different relief because of its physiography as it consists of four series of plateaus of having different heights. The highest plateau lies in the west known as Western or Higher Ranchi Plateau or locally known as the Pat region located at 2500 to 3600 feet above sea level covering northern part of the old Ranchi district and the southern edge of the old Palamu district. The term Pat represents a feature similar to a table with steep edges around and a flat top. It is full of dissected hills having a hill station, Netarhat, at the top.

The second plateau is known as Ranchi Plateau having a height of 2000 feet composed of gneisses and granites. It is separated by the Damodar trough from the Hazaribagh Plateau. The next plateau is Lower Chotanagpur Plateau consisting mainly of gneisses and granite and partly of schists and other Dharwar rocks.

The other plateaus are the Rajmahal Hills and the Kaimur Plateau. These plateaus are separated by the narrow and steep slopes known as scarps. It is believed that before the Chotanagpur Peneplain was successfully uplifted thrice by the side effect of the three violent Himalayan movements in Tertiary times continued till Pleistocene times resulting in well-known waterfalls like Hundru, Jonha, etc. on the scarps. The first upliftment took place during the Eocene to Oligocene period creating Pat region, the second one during Miocene forming the Ranchi and Hazaribagh Plateau and the third one during Pliocene and Pleistocene period uplifting the outer Chotanagpur Plateau. All plateaus are the parts of the same plain successively uplifted during Tertiary and Pliestocene times. Marvelous eye catching rare geological/geomorphological features like rejuvenated meandering and deep cutting young rivers like Damodar are the uniqueness in the State. It is rate because of combination of senility with the character of young rivers.

The state has the luxuriant forests and lush green rolling seasonal meadows. Magnificent undulating hills and valleys are the special attraction. The golden river 'Swarnarekha' adds melody in the pristine environment along the course. A combination of table-top flat lands and the peneplain with dome shaped exfoliating hillocks resembling like inverted Nagara (drum) are spread over the state. Further, the Tors or the balanced diamond shaped rocks are also present wonderful nature of the state.

The state is one of the largest producers of the mineral resources of the country spreading over majority of the districts with a paradox to be among the bottom lying states in terms of development. An area of 24.4 lakh hectares (30.61%) is under agricultural wastelands that have to be beneficially utilized for rural development.



Showing Physical map of Jharkhand (Source: http://www.mapsofindia.com/maps/jharkhand/jharkhandphysical.htm)

1.3 Administrative Setup[1, 2]

The State of Jharkhand consists of 24 districts, 33 subdivisions, 211 blocks and 3759 panchayats and 32620 villages.

No of Districts	24
No of Commissionaires	5
No of Developmental Blocks	260
No of Towns	152
No. of Sub divisions	38
No of Corporation	2
No of Nagar Parishad /Panchayat	37
No of Panchayat	4562
No of Village	32,620
Total Geographic Area	79.70 Lakh Ha

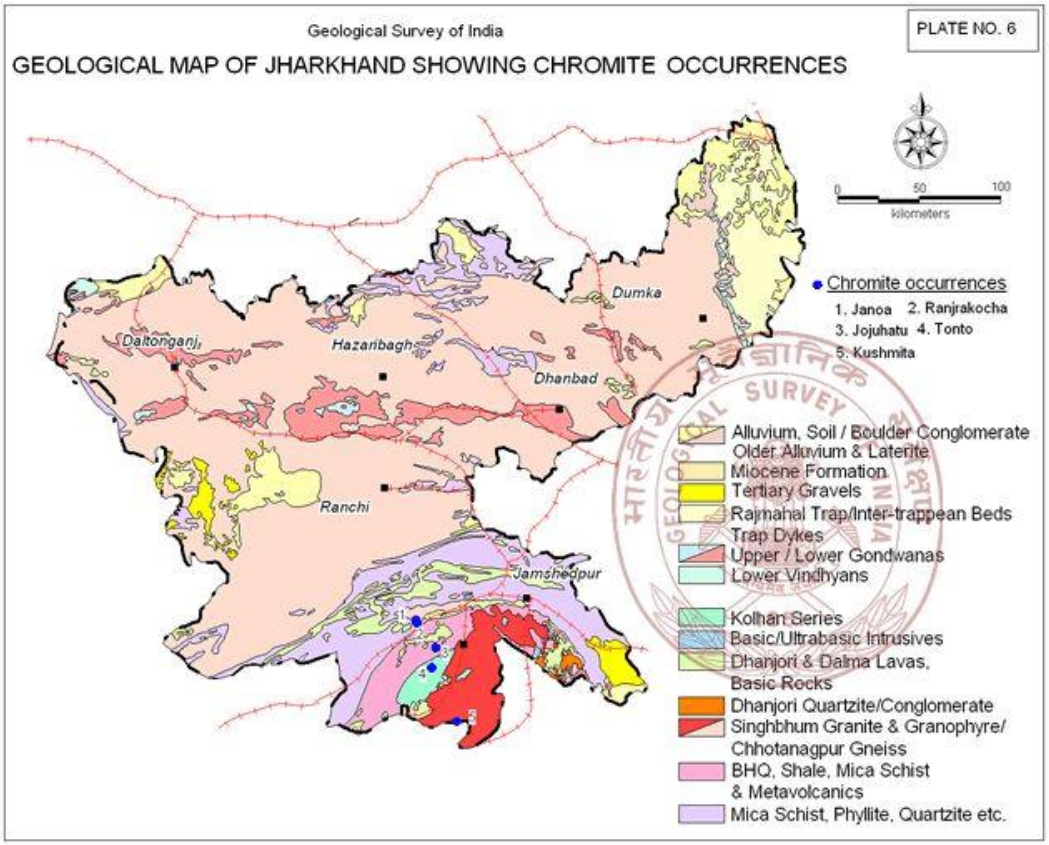
1.4 Climate, temperature and Rainfall[1]

The state falls under the Tropical Monsoon climatic region. The Tropic of Cancer cuts across the state passing through the middle of the Ranchi City. The average temperature of the state is 25° C, which varies greatly because of varying heights of different plateaus mentioned above. The average temperature of the Pat region is below 23° C while rest of the state records average annual temperature between 23 and 26° C except the eastern part of Santhal Pargana region, East Singhbhum, Garhwa, Palamu and the northern part of Chatra districts where it is above 26° C. There are extremities in climate in the state in two seasons- summer and winter. The hottest areas are found towards the north western part of the state (Daltonganj), around Jamshedpur and Dhanbad cities having more than 40° C temperatures. Similarly, the state gets affected by the cold waves with less than 5° C temperature and reeling cold.

The average annual rainfall in the state is 1400 mm with more than 4/5th rainfall between June to September. It also gets rainfall from the branch of monsoon from the Arabian Sea. There are also variations in rainfall varying from below 1200 mm to 1800 mm. There are five climatic regions in the state. One, North Eastern and North Central Plateau Region (Western part of Santhal Pargana region, Giridih, Kodarma and Northern Hazaribagh); two, Upper Chotanagpur region (Pat region, Ranchi Plateau, Gumla and the plateau region of outer Chotanagpur spread in Simdega); three, South Eastern Region (East Singhbhum, Saraikela and West Singhbhum); four , Eastern Region (Sahibganj, Pakur, eastern Deoghar, eastern Jamtara and north eastern part of Saraikela); and five, North Western Lower Plateau Region (Garhwa and Palamu).

1.5 Geology[1]

Jharkhand is endowed with heterogeneous landscape, huge natural resources, dominance of aboriginals habitat and their culture. Heterogeneity is observed in geological formations, physical appearance and patterns of development. Jharkhand the 'Land of Forests' is geographically and geologically one of the oldest landmasses, and culturally, one of the oldest regions with vibrant color. This is an integral portion of the Peninsular highland, part of ancient Gondwanaland, portrays areas formed of rock formations ranging from Archeans to Post-tertiary period.



Showing geological map of Jharkhand State

1.6 Soil [3]

Soil content of Jharkhand state mainly consist of soil formed from disintegration of rocks and stones, and soil composition is further divided into:

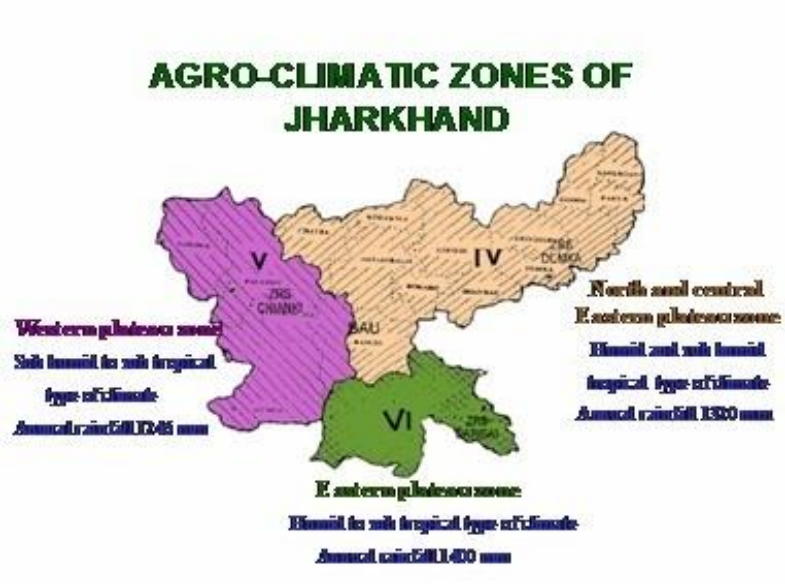
- Red soil, found mostly in the Damodar valley, and Rajmahal area
- Micacious soil (containing particles of mica), found in Koderma, Jhumri Telaiya, Barkagaon, and areas around the Mandar hil
- Sandy soil, generally found in Hazaribagh and Dhanbad
- Black soil, found in Rajmahal area
- Laterite soil, found in western part of Ranchi, Palamu, and parts of Santhal Parganas and Singhbhum

1.7 Agro-climatic zone [4]

The state has been divided into 3 agro-climatic sub zones viz., Central and North eastern plateau sub zone (Zone-IV), Western plateau sub zone (Zone-V) and South eastern Plateau sub zone (Zone-VI).

Name of Zone	Name of the districts

Sub Zone IV	Dumka, Deoghar, Godda, Sahebganj, Pakur, Hazaribage, Koderma, Jamtara, Chatra, Giridih, Dhanbad, Bokaro and two-third of Ranchi
Sub Zone V	Palamu, Latehar, Lohardaga, Garhwa, Gumla, Simdega and one-third of Ranchi
Sub Zone VI	East Singhbhum, West Singhbhum and Saraikela Kharsawan



Map showing agro-climatic zones of Jharkhand

1.8 Socio-economic profile [1]

According to the Census of India 2001, total population of the state is 2,69,09,428 with a sex ratio of 941 and density of population is 338 persons per sq. km. The state of Jharkhand has 14 parliamentary constituencies and 81 assembly constituencies. It has an intermingling population from various ethnic, linguistic and religious backgrounds. According to the 2001 Census, the percentage of the ST population is 26.30 per cent. Total workforce in the state is 31.24 per cent. The literacy rate, according to the 2001 Census, is 54.15 per cent, where Male and Female Literacy are 67.94 and 39.38 per cent respectively. The total number of the Panchayat members is 44209 out of which the percentages of SC, ST and women members are 10.0, 29.0 and 41.1 respectively. The Census of 2001 showed that Jharkhand had 32,615 villages, of which, 29,354 were inhabited. The point is that several of these have population sizes less than 200 and this does not make the provision of physical or social infrastructure viable.

Jharkhand is a newly carved state from Bihar in the year 2000. Vulnerability in the state is primarily associated with limited use full potential of natural resource, common property resources, human resources and lack of effective micro – macro institutional presence. Jharkhand has total population of 2.69 crore as census 2001 having total geographical area of 7.9 million hectare. Among this 39% of population is consisting of ST & SCs. Literacy level is 54%. Almost 50% of its total population is Below Poverty line. Almost 80% of the population is dependent upon rain fed based Agriculture and productivity is very low i.e. below 1 ton / hectare. This generates a very low level of coping capacity among the communities of Jharkhand for Disasters. As per the findings of last NSS having large sample in 2004-05. On the basis of this, 46.3% of rural Jharkhand (10.3 million people) was below the poverty line in 2004-05, with a figure of 20.2% for urban Jharkhand (1.3 million people). Overall, 40.3% of Jharkhand was below the poverty line (BPL).

Agriculture is the main stay for the 80% of rural population of the state. Agriculture is their employment and primary income generating activity. The agricultural economy of the Jharkhand state is characterized by dependence on nature, low investment, low productivity, mono-cropping with paddy as the dominant crop, inadequate irrigation facilities and small and marginal holdings. The dependence of agriculture on the vagaries of the rain-god can be gauged from the fact that as much as 92% of the total cultivated area is un-irrigated." Not only is productivity low, it varies considerably among districts.

The rural population in Jharkhand is probably around 26 million now. This means that 80% of rural Jharkhand is BPL. UNDP's recent Human Development Report (HDR) for 2010 uses a Multidimensional Poverty Index (MPI) that has been devised by the Oxford Poverty and Human Development Initiative (OPHDI) and uses variables that are based on access to education, health, electricity, sanitation, drinking water, cooking fuel and assets. This shows that 77% of Jharkhand's population is poor. Since the Millennium Development Goals (MDGs) are also focused on human development and removal of human deprivation, a similar picture emerges from those too.

Socio economic data at a glance[2]

Sl_No	Socio-Economic-Demographic Indicators	Census, 2011
1.	Population size	3,29,88,134
2.	Population size (Males)	1,69,30,315
3.	Population size (Females)	1,60,57,819
4.	Population size (Rural)	2,50,55,073
5.	Population size (Urban)	79,33,061
6.	Population size (Rural Males)	1,27,76,486
7.	Population size (Rural Females)	1,22,78,587
8.	Population size (Urban Males)	41,53,829
9.	Population size (Urban Females)	37,79,232
10.	Population density (Total, Persons per sq km)	414

11.	Sex ratio (Females per 1000 males)	948
12.	Sex ratio (Rural)	961
13.	Sex ratio (Urban)	910
14.	Literacy Rate, 7+ (persons, percent)	66.4%
15.	Literacy rate, 7+ yrs (Males, Per cent)	76.8%
16.	Literacy rate, 7+ yrs (Females, Per cent)	55.4%

2. DISASTER RISK PROFILE [1]

2.1 Vulnerability of the State[1]

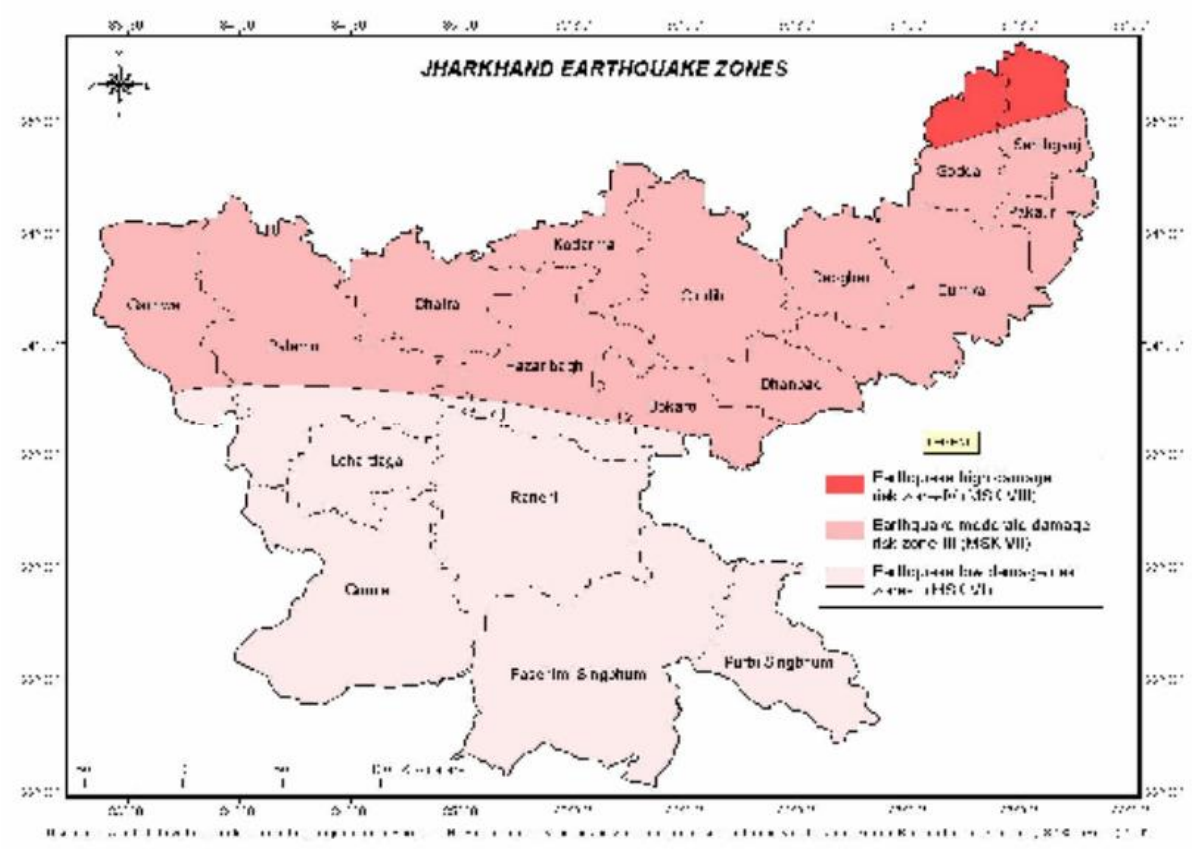
Almost all the 24 districts are affected by different kind of Disaster. There is great need to strengthen the capacity of State, District, Block and newly formed Panchayat level of departments, institutions and functionaries to respond to the Disaster at their own level in participation of community. Jharkhand is vulnerable to following kind of Hazards:-

- Drought,
- Mining Accidents,
- Chemical and Industrial Hazards,
- Lightning,
- Bird Flu,
- Flood, Earthquake,
- Fire / Forest Fire,
- Elephant Attacks,
- Climate Change, Biodiversity loss,
- Naxalism/Landmine Blasts etc.

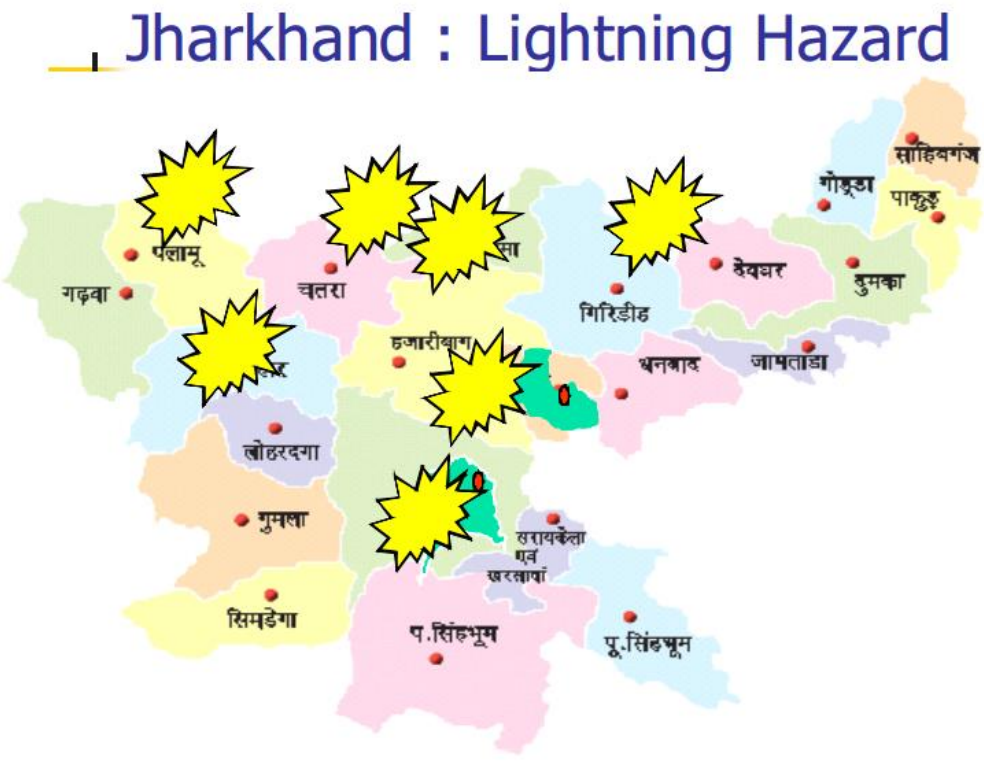
Major Hazards affected districts[1]

Sl No	Name of Hazards	No. of districts affected	Name of the district
1.	Drought	All the 24 Districts (2010)	All districts affected
2.	Flood	01	(Sahibgunj)
3.	Flash Flood	03	(Jamshedpur , Saraikela , Ranchi)
4.	Forest Fire	09	(Garhwa, Palamau, Latehar, Chatra, Hazaribagh, E. & W. Singhbhum, Simdega,Gumla)
5.	Lightening	09	(Palamau, Chatra, Latehar, Koderma, Ranchi, Giridih, 9 Hazaribagh,Lohardagga,Dumka)
6.	Mining	09	(Latehar, Ramgarh, Dhanbad,

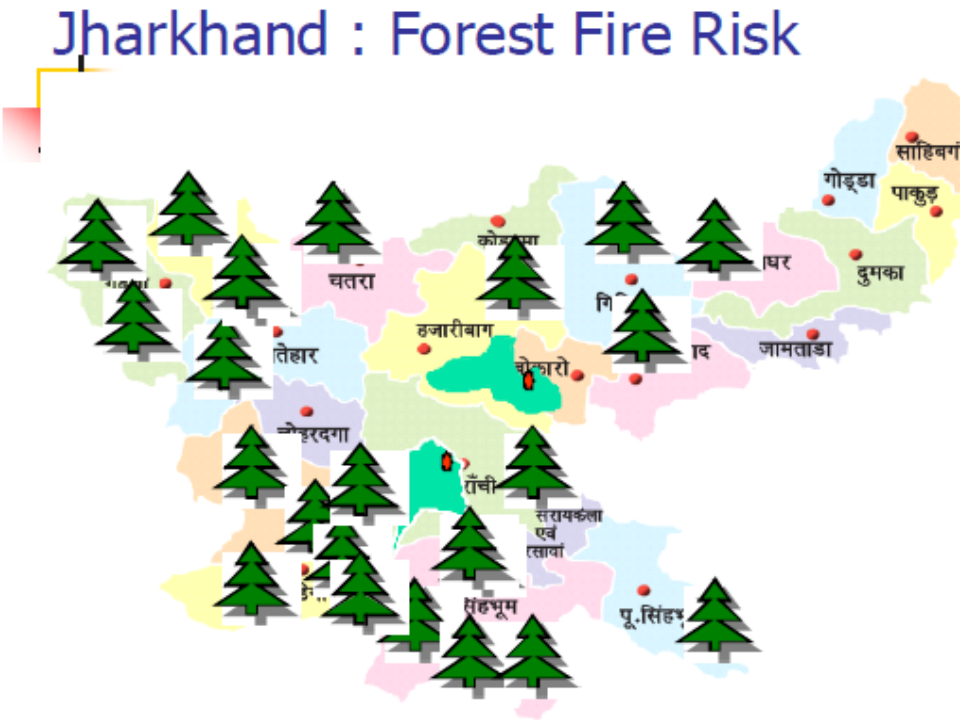
	Hazards		Lohardagga, Giridih, E. & W. Singhbhum,Koderma)
7.	Earthquake Hazard – Zone –IV Zone –III Zone – II	02 Districts 15 Districts 7 Districts	(Godda & Sahibgunj - Partially) (Godda , Sahibgunj, Garhwa, Palamau, Chatra, Hazaribagh, Koderma, Giridih, Bokaro, Dhanbad, Deoghar, Dumka, Godda, Pakur, Jamtara) (Lohardagga, Ranchi, Ramgarh, Khunti, Gumla, E. & W. Singhbhum)



Map showing Earthquake zones in the State



Map showing areas prone to lightning hazard



Map showing areas prone to forest fire hazard

2.2 Mining Hazards

The State has 38% of India's mineral reserves in general. Some of the units such as Iron & Steel, copper etc have the potential of generating even gaseous emission viz. SO2, NOX etc. Emission of fugitive dust in huge quantities due to mining, transportation and coal burning activities deteriorates the ambient air quality. Apart from the air pollution the other environmental impact of the mineral based Industries is water pollution.

2.3 Accident

The figures of road accidents indicate rising trend in Jharkhand. The figures are however not complete since each and every accident case is not reported at the police stations. Thus, the actual number or road accident cases may be still higher. Except for the observance of the Traffic Week in the first week of January every year in the State, there is very little regular and sustained campaigns to prevent and reduce the road accidents.

2.4 Biological

Jharkhand is prone to many water and vector borne communicable diseases, which get compounded by poor health knowledge, poor sanitation and scarcity of drinking water.

Ecological changes and regular impact of different kinds of natural disasters like floods, cyclones, droughts and climatic disorders like heat wave create a favourable climate for emergence of new types of pathogenic agents.

The Malaria upsurge in non-endemic areas and drug resistance to malaria in endemic areas is a matter of increasing concern to the State. There is always the potential threat of outbreak of enzoonotic diseases in rural and tribal areas. Food poisoning from eating inedible roots and tubers. It is quite common in tribal areas.

2.5 Major Disaster Events

a) **Droughts**

The last decade has shown the increasing severity of Drought situation in Jharkhand. The total food production has decreased in the year 2010 by half. The state has faced deficit of rainfall in the year 2010 by 47%, 10 lakh hectare of area could not have plantation of paddy. Palamau district of Jharkhand has shown decreasing rainfall in last 22 years. Decreasing trend in the rainfall in Jharkhand during the last Monsoon season. Severe heat wave conditions are noticed in the years 2004, 2005 & 2010.

The floods have occurred in the following 11 districts of the state, Dumka, Godda, Deogarh, Sahebganj, Pakur, Dhanbad, East and West Singhbhum, Saraikela-Karsawan, Gumla and Hazaribagh during the years 2000-2004.

b) Floods

Flash flood has caused severe damages to houses, roads, bridges and culvert. Sahibgunj district was hit by massive Flood in the year 2008. Many villages on the right bank of river Ganga have been threatened due to erosion of the bank of the river Ganga. The Ganga is also endangering NH-80 in Jharkhand. The river Sone is engulfing agricultural land in Palamau district. Flash flood in Ranchi and Jamshedpur are mainly caused due to blockade in drainage pattern of these cities and settlement of unauthorized colonies in low line areas.

c) Forest fires

Forest fires constitute a major threat, as the forests of the State are mostly dry deciduous and are prone to forest fires in the summer season. The longer the interval between two successive fires, the more is the damage due to the higher fuel build up. Therefore, it is essential that a proper disaster management system be put in place. Most of the fires are associated with the activities of mahua and sal seed collection and the desire to promote better grass growth after the rains. The fires caused by mahua collectors are common in March and April and are the cause of wide spread fire damage to the forest growth.

d) Mine disaster

The major mines hazard Jharkhand is Coal Mine Fire in Jharkhand. A number of coal mines in the state are affected by fires leading to steady destruction of precious energy resource. The reason for mine fires presumably involves the phenomenon of spontaneous heating through two interrelated processes viz., the oxygen coal interaction or oxidative process and the thermal process. It is estimated that about 10% of total national coal resources are in the fire-affected areas. Although underground mining has considerably less impact than opencast mining on land, it causes enough damage through subsidence as observed in Jharia and Raniganj coalfields.

The Chasnala mining disaster happened on 27 December 1975 in a coal mine near Dhanbad caused by an explosion in the mine followed by flooding which killed 372 miners[7].

The Dhanbad coal mine disaster occurred on May 28, 1965, in a coal mine near Dhanbad. On the fateful day, there was an explosion in Ghori Dhori colliery near Dhanbad, which led to fire in the mines which killed 375 miners[8].

3. INSTITUTIONAL SETUP[1]

3.1 Introduction [1]

State Disaster Management Authority (SDMA) has been constituted in Jharkhand vide Notification # 425 ,dated 28/5/2010 in exercise of the powers conferred by sub section (1) of section 14 of DM Act 2005 (Act no. 53 of 2005) by His Excellency , Governor of Jharkhand. The JSDMA has two distinct objectives viz. (a) Development and updating of Plans and Strategies to handle any type of disaster at various levels and (b) Undertake projects for restoration and strengthening of infrastructure damaged by disasters.

State level Disaster management plan is step towards developing common understanding and perspective on holistic situation of hazard, risk and vulnerability of state at different level and prepares the state, district, block and Panchayat to cope up with the situation of Disaster with a organized and collective way. The plan also envisages strengthening of Institutions in the state as State Disaster Management Authority (SDMA) and District Disaster Management Authority (DDMA) to develop a sustainable mechanism for updating the hazard , risk and vulnerability status of the state as well as of the district and develop a dynamic, contextual and quality plan for this. A detail survey of primary and secondary data has been done to identify the status of incumbent hazard, risk and vulnerability for the state. A series of consultative meeting, seminar and workshop has been conducted to develop a common perspective and functioning awareness among several line departments, institutes, civil societies and media of the state on State Disaster Management Plan. An action plan is developed to update the Sate disaster management plan as per the need from the inputs of Line departments, District and Block administration, PRI, SDMA, DDMA, SEC, SPSC, Media, Experts and Civil societies of Jharkhand.

State Disaster Management Plan focuses on the realistic assessment of the hazard risk and vulnerability status , capacity of the line departments , institutions, need for strengthening the disaster specific strategies for the state, developing roadmap for the state to develop collective response plan for the different disasters based on emergency support functions , standard operating procedure , skilled human resources , infrastructure and time bound integration plan for integrating disaster risk reduction strategies with flagship development program. The state plan will be disseminated with all kind of stakeholders. A follow plan will be developed with all the stakeholders to abide this plan in terms of their departmental plan as guiding plan to reduce the risk of Disaster in the state. The main vision of this document is to initiate coordinated efforts in between all the line departments of Govt. of Jharkhand to have an effective disaster management strategy for the State, which will reduce the risk of disasters. The other main focus area of this document is to have an extremely quick, efficient and coordinated response and recovery plans in place from the Panchayat to the State level (village being the unit of planning) with a mechanism that will ensure increasing community participation in all disaster preparedness activities.

3.2 The Jharkhand State Disaster Management Authority (JSDMA)

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JSDMA is mandated to develop disaster preparedness plans for the State to meet any eventuality arising out of all kinds of disasters such as cyclone, flood, drought, chemical explosion, etc.

Responsible for:-

- Development of Multi-hazard response plan,
- Establish and maintain a failsafe communication network interconnecting the State, district, block and GP Headquarters for dissemination and collection of information relating to disaster management.
- Institutional capacity building
- Capacity building of the communities and Community Based Organisations to handle emergencies.
- Preparation of Geographic Information System (GIS) for disaster mitigation and development planning.
- Design and development of training programme for decision makers, elected representatives and the Civil Society groups.
- Coordination of NGO efforts

At the State level, the Chairperson and the CM there of is the Vice Chairperson, the state authority (SDMA) headed by the respective CMs as chairperson will lay down policies and plans for DM in the State. It will, inter alia, approve the State Plan in accordance with the Guidelines laid down by the NDMA, coordinate the implementation of the State Plan, recommend provision of funds for mitigation and preparedness measures and review the developmental plans of the different departments of the State to ensure integration of prevention, preparedness and mitigation measures. Each State Government will constitute a State Executive Committee (SEC) to assist the SDMA in the performance of its functions. The SEC will be headed by the Chief Secretary (CS) to the State Government and coordinate and monitor the implementation of the National Policy, the National Plan and the State Plan. The SEC will also provide information to the NDMA relating to different aspects of DM.

The other mandate of JSDMA is to undertake comprehensive restoration and reconstruction of public infrastructure damaged due to various calamities. The primary role of JSDMA is to coordinate between the executing agencies i.e. the various line departments and the various funding agencies, such as Govt. of India, the World Bank, the DFID, etc. JSDMA is expected to review and approve the technical proposals received form the executing agencies, process the procurement packages, manage the disbursement of funds and monitor the implementation.

The role of JSDMA is critical in preparedness and mitigation capacity building initiative in the State through designing, developing and implementing effective public policies to reduce risk and vulnerabilities associated with various disasters.

A multidisciplinary group in JSDMA will be set up to strengthen the Disaster Management Unit. The group will include technical experts with experience in managing various disasters, IT and GIS personnel, social scientist, Geologist, Medical officer with specialization in Preventive and Social medicines and Communication specialist. The officials of JSDMA will participate in professional training programmes on various aspects of disaster management for their capacity building in Disaster Management.

3.3 Emergency Operation Centre (EOC) [1]

At present Emergency operating centre's are operational at the State and in all the 24 districts of Jharkhand under the aegis of Home Department of Govt. of Jharkhand, Department of Disaster Management has a plan to upgrade all the existing Emergency operation centre as per the guideline laid down in NDMA Act -2005. The Emergency operation centre (EOC) will have to act as nerve centre for coordination and management of disasters of all kind and magnitude. EOC will be a central command and control facility provider, responsible for carrying out the principles of disaster preparedness, response and management functions at a strategic level in emergency situation in their notified area. The EOCs should function at full scale round the clock after the receipt of the first information about the occurrence of natural disaster or for a period specified by the concerned nodal ministry for dealing effectively with the crisis arising out of disaster.

Objectives of the EOCs:-

- First spontaneous and optimal responder to the disaster / incident
- Receive and process disaster alerts and warnings from nodal agencies and other sources and communicate the same to all designated authorities.
- Respond and monitor emergency operations
- Requisitioning additional resources during the disaster as per the need
- Issuing disaster /incident specific information and instructions specific to all concerned
- Consolidation, analysis, and dissemination of damage , loss and needs assessment data
- Forwarding of consolidated reports to all the designated authorities
- Establishing fail proof communication network (24 x 7)
- Need based First Spontaneous and Optimum Responder Competency (24 x7)
- Standard operating procedure (SOPs) and Protocol for activation of State & District EOCs during the onset of Disaster / Incidence
- EOC will work as state of the art Facility Centre (24 x 7)
- EOC will be state of art Emergency information centre (24 x 7)
- EOC will work with skilled human resources (24 x 7)

Functions of EOCs

- To Ensure all warning and communication systems, instruments are in working condition
- Information collection on a routine basis from the district departments on the vulnerability of areas to disasters
- Liaison with SDMA, DDMA and DDMC
- Develop status reports of preparedness and mitigation activities in the district
- Ensure appropriate implementation of State and District Disaster Management Plan
- Maintenance of data bank with regular updating
- Ensure Evaluation & updating of State and District Disaster Management Plan
- Collection and compilation of information from the affected area
- Documentation of information flow
- Decision making regarding resource management
- Allocation of task to different resource organizations
- Supply of information to the State Government
- First optimal responder to the disaster

3.4 District Disaster Management Authority (DDMA) [1]

Each DDMA will be headed by the respective District Magistrate, District Collector (DC), Dy. Commissioner as the case may be, with the elected representative of the Local Authority as the Co-Chairperson. DDMA will act as the planning, coordinating and implementing body for DM at District level and take all necessary measures for the purposes of DM in accordance with the Guidelines laid down by the NDMA and SDMA. It will, inter alia, prepare the District DM plan for the District and monitor the implementation of the National Policy, the State Policy, the National Plan, the State Plan concerning its own District and prepare the District Plan. The DDMA will also ensure that the Guidelines for prevention, mitigation, preparedness and response measures laid down by NDMA and SDMA are followed by all Departments of the State Government, at the District level and the Local Authorities in the District.

3.5 Local Authorities[1]

Local Authorities would include Panchayati Raj Institutions (PRIs), Municipal Corporations, Municipalities, District and Cantonment Boards and Town Planning Authorities which control and manage civic services. These bodies will prepare DM Plans in consonance with the Guidelines of NDMA, SDMAs and DDMAs and will ensure capacity building of their officers and employees for managing disasters, carry out relief, rehabilitation and reconstruction activities in the affected areas.

3.6 State Police Forces, Fire Services and Home Guards[1]

The State Police Forces, the Fire and Emergency Services and Home Guards are crucial and most immediate responders to disasters. The Police will be trained and the Fire and Emergency

Services upgraded to acquire multi-hazard rescue capability. Home Guards volunteers will be trained in disaster preparedness, emergency response, community mobilisation, etc. The State Governments may take the help of NDMA for capacity building and sensitisation of their forces.

3.7 Civil Defence (CD) and Home Guards[1]

The mandate of the Civil Defence (CD) and the Home Guards will be redefined to assign an effective role in the field of disaster management. They will be deployed for community preparedness and public awareness. A culture of voluntary reporting to duty stations in the event of any disaster will be promoted. A proper CD set up in every District will be a boon for disaster response as the neighbourhood community is always the first responder in any disaster. The proposal to make CD District centric and be involved in disaster response has already been approved by the GoI. Its phase wise implementation has also begun. The Districts have been taken up for revamping Civil Defence.

3.8 National Cadet Corps (NCC), National Service Scheme (NSS) and Nehru Yuva Kendra Sangathan (NYKS) [1]

Potential of these youth based organisations will be optimised to support all community based initiatives and DM training would be included in their programmes.

3.9 Shri Krishna Institute of Public Administration [1]

The Shri Krishna Institute of Public Administration (SKIPA) was set up with the prime aim of providing Institutional Training for officers of the State Administrative Service and Induction Training to the Officers of the Indian Administrative Service. It also conducts in-service trainings, refresher trainings programmes, short duration training programmes for various senior and middle level officers of the State Government. It coordinates training activities of more than 100 training institutes of the Government of Jharkhand and facilitates seminars, symposia, conferences and special studies. The Institute has a Faculty on Disaster Management, which was established in 2007 under the Central Non Plan Scheme funded by Government of India, Ministry of Home Affairs, in order to build up the training capability of the Institute in different aspects of disaster management. It has organised a series of training programmes on different aspects of disaster management and conducted special studies and documentation following the Mining Disasters, Drought etc.

3.10 State Institute of Rural Development (SIRD) [1]

The State Institute of Rural Development located at Ranchi is the apex Training institute under the Panchayti Raj Department, Government of Jharkhand for imparting training to government officials, elected Panchayat and Zilla Parishad representatives and voluntary agency activists in tribal and community development. It also develops necessary training curriculum for different training programmes and provides leadership and guidance to other Training Institutes in the

State in respect of training techniques and other related subjects. It conducts research studies and assists in organizing off-campus programmes, seminars, workshops and conferences in collaboration with the Government and other organisations.

3.11 Jharkhand Space Applications Centre (JSAC) [1]

The Jharkhand Space Applications Centre is a specialised Government agency in the area of remote sensing, cartography and space application. JSAC has the potential of providing very critical knowledge management support to JSDMA and other organisations by providing inputs like remote sensing, geographic information system and management information system support in critical disaster management related parameters. Institutional linkages between JSAC and JSDMA can provide a synergy of disaster management efforts in the State.

3.12 Jharkhand Agency for Promotion of Information Technology (JAPIT) [1]

Jharkhand Agency for Promotion of Information Technology (JAP-IT) was conceptualized to accelerate the growth of Information Technology in Jharkhand and implement the policies of the State Govt. in the area of IT.

3.13 Jharkhand State Information & Communication Network(JHARNET)[1]

Jharkhand State Information & Communication Network (JharNet) is the state-ofthe-art communication network built exclusively for the use of the Government of Jharkhand and its various departments. It will revolutionize the way Government functions by providing easier, faster and transparent governance. It will improve Government-Citizen and Government-Business interaction by providing easier accessibility of various Departmental Services to Citizens and Business. JharNet is a transport network on which the user Departments can build their exclusive Intranets.

3.14 National Informatics Centre (NIC) [1]

The National Informatics Centre has facilities like VSAT-based video conferencing, Internet connections from JHARNET centre, Pentium servers running GIS applications etc. The NIC State Secretariat Centre also has VSAT and Internet facility and Pentium server and systems. It has district centers functional at headquarters of 24 districts, with Pentium servers, VSAT facility. It also has district informatics attached to district collectors. The services of NIC will be harnessed to strengthen the communication and information database systems related to disaster management at the State and district levels.

3.15 Development of Disaster Management Knowledge cum Demonstration Centre (SRIJAN) [1]

Department proposes Knowledge cum Demonstration centers to be created for making aware the community and the common people about various types of probable disasters and their vulnerability to that, through technologies and tools and various ways to mitigate and cope up with the incumbent disaster. These centers will be developed and design for specific disaster like drought, Mining disaster, flood, forest fire and fires etc. These centers will work as centre for providing local need based information, communication, dissemination methodologies, and tools for spreading awareness and inculcating behavioural changes among all the stakeholders.

The competence of existing institutions of excellence like Birsa Agriculture University (BAU – Ranchi) for drought , Indian School of Mines (ISM-Dhanbad) for mining hazards , Birla Institute of Technology (BIT – Mesra, Ranchi) for earthquake structural safety norms in the housing sector, Jharkhand Space Application Centre (JSAC – Ranchi) for Flood, Forest Fire and Drought will be enhanced to develop Standard operating procedures and protocols , hazard risk and vulnerability analysis for the specific disasters , training need assessment , development of state and district Management plan and development of master trainers on designated aspects of disaster in Jharkhand. Department also proposes to develop State institute for disaster management in Jharkhand. Space application based MIS Knowledge will be utilized for planning and management of the onslaught disasters of various kinds. These centers will be popularly nomenclatured as SRIJAN.

a) Birsa Agriculture University, Ranchi

One of the premier Agricultural research and training university of India has been identified as specialized institute for the Agriculture Drought Management activities for the State.

b) Indian School of Mines, Dhanbad

One of the premier Mining Technical institution of India has been identified as specialized institute for the Mining Disaster risk management activities for the State.

c) Birla Institute of Technology Ranchi

One of the premier Technical institution of India has been identified as specialized institute for the Urban earthquake risk management activities for the State.

3.16 MECON Ranchi[1]

One of the premier Public Sector Unit of India has been identified as specialized agencies for the Industrial Disaster risk management activities for the State.

3.17 Incident Site Operation Centre (SOC) [1]

An Incident Site Operation Centre (SOC) is also proposed as a complimentary unit to EOC, especially during Disasters, which will operate close to the disaster site and will be linked

directly with the State and District Emergency Operations Centre. The concerned Additional Collectors at District as Nodal Officer and CEO of DDMA will be the nodal officer from the district administration at this Centre. All information would be conveyed to the Collector from the ACs through the administrative officer appointed at SOC. The DM unit of the respective vital departments would be responsible to execute activities at disaster site; however the tasks would be controlled and coordinated from EOC through nodal desk officers.

3.18 Incident Response System (IRS) [1]

The standardized on-scene emergency management is an integrated organizational structure comprising staff members from the state Chief Secretary and district Deputy Commissioners to meet the complexity and demands of IRS without being hindered by jurisdictional boundaries. IRS is the combination of facilities, equipment, personnel, procedures, and communications operating within a common organizational structure, with responsibility for the management of resources to effectively accomplish stated objectives pertinent to an incident.

3.19 State Disaster Response Force (SDRF) [5]

JSDMA is committed to constitute State Disaster Response Force (SDRF) at the state as an independent specialized force with the support from NDMA and NDRF. JSDMA has already adapted a resolution in this line and Disaster management department has already submitted the proposal to the home as nodal department for SDRF.

4. INITIATIVES[1]

4.1 State Disaster Management Policy [6]

A holistic and integrated approach will be evolved toward disaster management with emphasis on building strategic partnerships at various levels. The themes underpinning the policy are:

- Community based DM, including last mile integration of the policy, plans and execution.
- Capacity development in all spheres.
- Consolidation of past initiatives and best practices.
- Cooperation with agencies at national and international levels.
- Multi-Sectoral synergy.

The objectives of the policy on disaster management are:-

- Promoting a culture of prevention, preparedness and resilience at all levels through knowledge, innovation and education.

- Encouraging mitigation measures based on technology, traditional wisdom and environmental sustainability.
- Mainstreaming disaster management into the developmental planning process.
- Establishing institutional and techno-legal frameworks to create an enabling regulatory environment and a compliance regime.
- Ensuring efficient mechanism for identification, assessment and monitoring of disaster risks.
- Developing contemporary forecasting and early warning systems backed by responsive and failsafe communication with information technology support.
- Promoting a productive partnership with the media to create awareness and contributing towards capacity development.
- Ensuring efficient response and relief with a caring approach towards the needs of the vulnerable sections of the society.
- Undertaking reconstruction as an opportunity to build disaster resilient structures and habitat for ensuring safer living.
- Promoting productive and proactive partnership with media in disaster management.

4.2 State Disaster Management Plan[1]

The approach adopted in the preparation of the Sate Disaster Management Plan is holistic and will address the multi-hazards the State is vulnerable to. It takes into account past lessons and experiences and is built on what exists at different levels, streamlining bottlenecks in systems and operational management procedures.

Multi-Hazard Disaster Management Plan is the first attempt to bring out a common plan for the State for 9 category of possible disasters identified by the 5 sub-groups to which is the State is vulnerable to. The Plan has a 'multi-hazard approach' and incorporates various action which will promote a 'Culture of Preparedness.' Extensive consultations, referring to various Disaster Management Plans globally and as suggested by the HPC have led to the incorporation of various concepts. Those are:

The Trigger Mechanism has been envisaged as a preparedness plan whereby the receipts of a signal of an impending disaster or on the occurrence of sudden disaster would simultaneously energies and activate all response and mitigation mechanism without loss of crucial time. The Trigger Mechanism is, in essence, Standard Operating Procedure (SOP), which lays down in a scientific and comprehensive manner the implementation plans on receipt of a warning of impending disaster or plans to respond quickly to disasters that give no warning. Activities such as evacuation, search and rescue, temporary shelter, food, drinking water, clothing, health and sanitation, communication, accessibility and public information are important components of disaster management, which would follow on the activation of Trigger mechanism. These activities are common to all types of disasters and will require the preparation of sub-action plans by each specified authority.

L concept has been developed to define different levels of disasters in order to facilitate the responses and assistances to States and Districts.

L0 level denotes normal times which will be utilized for close monitoring, documentation, prevention and preparatory activities. Training on search and rescue, rehearsals, evacuation and inventory updation for response activities will be carried out during this time.

L1 level specifies disaster that can be managed at the District level, however, the State and Centre will remain in readiness to provide assistance if needed.

L2 level disaster situations are those, which require assistance and active participation of the State, mobilisation of its Resources for management of disasters.

L3 level disaster situation is in case of large scale disaster where the State and District authorities have been overwhelmed and require assistance from the Central Government for reinstating the State and District machinery as well as for rescue, relief, other response and recovery measures.

The objectives of the Disaster Management Plan are to ensure that the following components of disaster management are organized to facilitate planning, preparedness, operational coordination and community participation.

Prevention: the elimination or reduction of the incidence or severity of disasters and the mitigation of their effects.

Response: the combating of emergencies and the provision of immediate rescue and relief services;

Recovery: the assisting of people and communities affected by disasters to achieve a proper and effective level of functioning.

The roles of the State Government as envisaged in the Plan are:-

- Planning, Monitoring and Evaluation
- Knowledge Networking and transfer, spread and adoption of improved and appropriate technology for disaster prevention, response and recovery
- Review, modification and adoption of appropriate laws, rules, codes and other measures to increase disaster management at all levels
- Incorporating disaster management aspects in normal developmental activities
- Financial Matters
- Building of Inventories
- Initiating Community Awareness Programme
- Training of department officials from the State Headquarters and districts, members from the community and other stakeholders through a participatory approach

- Generating awareness through media and other IEC strategies and workshops for students, teachers and other stakeholders.
- Documentation

4.3 STANDARD OPERATING PROCEDURES (SOPs)

Disasters lead to loss of human lives on a large scale. If a formalized and timely response does not take place, the death toll can increase immensely. Therefore, each district in coordination with the State formulated a District Response Plan consisting of 12 Emergency Support Functions (ESFs) related to Communication, Search and Rescue, evacuation, law and order, medical response and Trauma Counseling, water supply, electricity, warning, bomb disposal, transport, etc. All of these emergency functions consist of emergency plans that would be activated at the time of emergency.

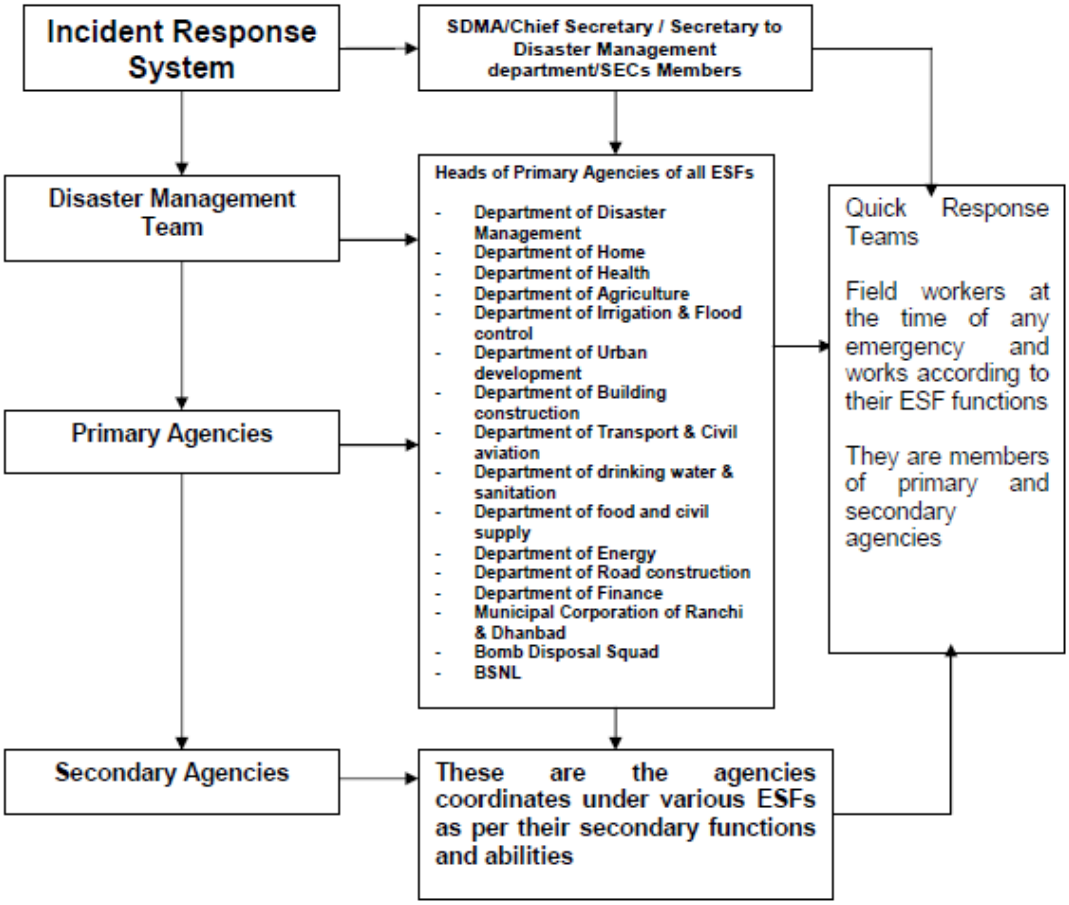
The ESFs document outlines the purpose, scope, organization setup and Standard Operating Procedures (SOPs) for each function of operation that is to be followed by the respective ESF agencies when the Incident commander activates the response plan. Standard Operation Procedures (SOPs) provides a basic concept of the operations and responsibilities of Disaster Management Team, Nodal and Secondary agencies.

4.4 ESF Response Actions, Organizational Setup and Inter-relationships

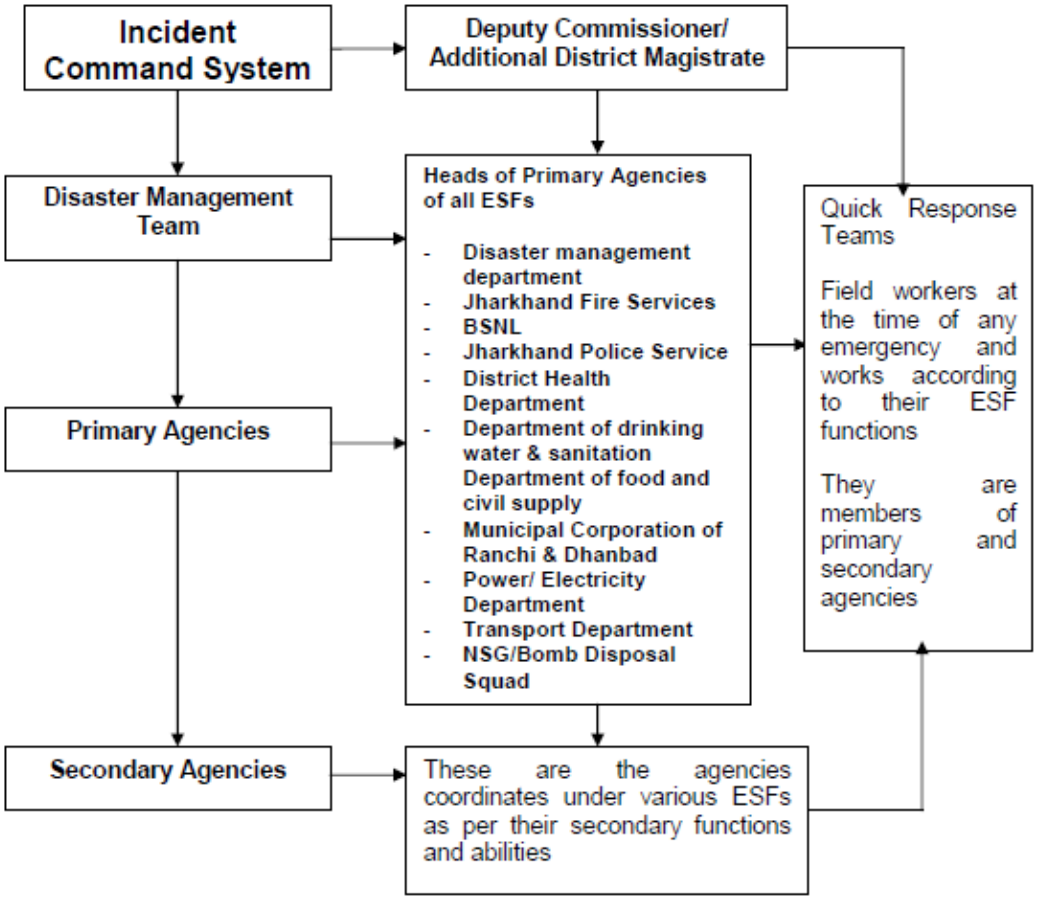
The Response plan establishes an organized setup to conduct ESF operations for any of the Natural and Man-made Disasters. It outlines an implementing framework of sharing resources as per the requirement within National and State level department will be engaged to support during an emergency situation. The Response Plan has structured the response of all line department i.e. primary and supporting departments to be organized and function together with grouping capabilities, skills, resources, and authorities across the State and district Government with the ESF plan. The plan unifies the efforts of State Departments and supporting agencies to be involved in emergency management for a comprehensive effort to reduce the effects of any emergency or disaster within the state.

The ESF activates under the guidance of Incident Commander (Deputy Commissioner/ Additional District Magistrate) who is also a head of Incident Commander System (ICS). Under the ICS a team of 12 ESFs' nodal officers works together also called as Disaster Management Team (DMT). The members of Disaster Management team will also head primary agency and simultaneously coordinate with the secondary agencies. Each of the primary and secondary agencies will also comprise of quick response team trained to carry out their functions at the response site. The success of ESF will be of critical importance and would reflect in the lives saved in the golden hour.

Organisational Set-up of the ESF at State Level



Organisational Set-up of the ESF at District Level



4.3 Publications

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