

District Disaster Management Plan Sagar

Prepared by

RAKHI S KUMAR

Intern

In Consultation with

School of Good Governance & Policy Analysis, Bhopal

Seeds Technical Services

District Administration, Sagar

*TOMORROW BELONGS TO THE
PEOPLE WHO PREPARE FOR IT
TODAY*



ACKNOWLEDGEMENT

I use this space to extend my heartiest gratitude towards Sagar *District Collector, Dr. Ramesh Kumar, IAS*, for his valuable feedback and timely reviews of the progress of my work which helped the Disaster Management Plan of the District to take shape in the most effective fashion.

The accolade of completion of the Plan then goes to Sagar District Joint Collector, **Shri Dilip Mandavi**, the Nodal officer for giving me the right kind of aid and meticulous guidance to proceed through the Project. But for his timely assistance even amidst his busy schedule, to make my appointments with government officials at all cadres, for gathering the right kind of information, this project report would not have evolved.

This acknowledgement would be incomplete without the mention of Sagar District Commandant, Homeguard, **Shri Shailendra Sehgal**, who made necessary arrangements for my accommodation, ensuring absolute safety and made my two months of stay in Sagar, peaceful. He made it a point to give me clear-cut information regarding the functionaries of each of the government departments of the District Administration and extended every possible help required for the task of data collection and assimilation. The role which **Sehgal Saahab** played to accustom me to such unfamiliar working conditions in M.P requires a special mention.

Next, I extend my heartiest gratitude to **Dr. Haider Rizwi**, Director SGPA for having made this project possible and for all the administrative help. His occasional feedback and reflection on my work, made it possible to furnish the thesis report as well as possible.

I thank **Mr. Amit Tuteja, Mr. Sunish Jose** and **Ms. Shivangi Chavda** of SEEDS, Delhi for the template and the provision of all technical assistance. Their guidance helped me evolve through every single aspect of data collection. This report would never have been realized in its letter and spirit, but for their timely and effective guidance regarding the format and precise analysis of the data.

I am thankful to **Shri. Gaurav Khare**, Project Officer, SGPA, firstly for recognizing me as being capable of doing this project, and secondly for all the arrangements of projectors and presentation halls for the Review Meetings held in Bhopal. The effective coordination that he imparted, whole throughout the project made it possible for the smooth execution of the task and attainment of the desired results.

Next, I thank all officials and staff at various cadres, Health, Revenue, Industries, Land Use, Police, Weather, Education, Electricity etc. for the kind cooperation which made this paper a

reality. It would be ungrateful on my part if I don't acknowledge the pain taken by **Shri. H. G Agnihotri**, Revenue Inspector, Land Records and member of Disaster Management Control Room, for his patience to search the records and make available all minute information possible, every time I approached him.

I would extend my special thanks to the soldiers and workers of Homeguard including **Shri Devi Prasad**, Platoon Commander **Shri. Rajesh Sharma**, **Shri. Dharmendra Kumar Rajput** and **Shri A B. Siddiqui** for their helpful approach, which made my stay enjoyable, even amidst the scorching heat in the month of May.

As always, I would not fail to mention the gratitude towards my **parents** who have helped me through every single hurdle in life. They have always helped me overcome my initial pessimism and emerge successful in all endeavours. Their love and affection have been my mightiest weapons for every battle and their confidence in me my greatest strength on earth.

Last, but never the least, I would thank the **Almighty God** for the strength and patience from within to complete my research report to the best of my capability and in the most sincere manner possible. Thank you Lord.

TABLE OF CONTENTS OF DISTRICT DISASTER MANAGEMENT PLAN

A . GENERAL

1. District Disaster Management Plan

1.1 District Profile

- 1.1.1 Location and Administrative divisions
- 1.1.2 Geography and Topography
- 1.1.3 Demography and Socio Economics
- 1.1.4 Climate and Weather
- 1.1.5 Health (Medical)
- 1.1.6 Education
- 1.1.7 Agriculture and Land use
- 1.1.8 Housing patterns
- 1.1.9 Industrial set ups
- 1.1.10 Transport and Communication Network
- 1.1.11 Power stations and Electricity installations
- 1.1.12 Major historical, religious places, tourist spots
- 1.2 Scope and Ownership of District Disaster Management Plan
 - 1.2.1 Authority of the Plan
 - 1.2.2 Responsibility & Accountability of the Plan
- 1.3 Purpose of the Plan
- 1.4 Objectives
- 1.5 Approach

2. Institutional Arrangements

- 2.1 District Disaster Management Authority
- 2.2 District Disaster Management Committee
- 2.3 District Emergency Operations Centre
- 2.4 District Disaster Information Management System
- 2.5 Urban Area Disaster Management Committee
- 2.6 Block Level Disaster Management Committee
- 2.7 Gram Panchayat / Village Disaster Management Committee

B. HAZARD, VULNERABILITY ASSESSMENT AND RISK PROFILING

- 1. Hazards Assessment
 - 1.1 Major applicable hazards
 - 1.2 History of past disasters
 - 1.3 Seasonality of hazards

2. Vulnerability Analysis – [Physical , Social , Economic ,Natural and Institutional]
3. Capacity Analysis - [Physical , Social , Economic , Institutional, Natural, Resources]
4. Risk Analysis
 - 4.1 Potential Impacts of applicable hazards and existing vulnerabilities
 - 4.2 Risk Profiling of the district

C. DISTRICT DISASTER MANAGEMENT PLAN

1. District Action Plans

1.1 Risk Mitigation Plan

- 1.1.1 Scope of Integrating Risk Reduction in Development Schemes
- 1.1.2 Training & Capacity Building
- 1.1.3 Community Initiatives

1.1.4 Risk Management Funding

1.2 Preparedness Plan

- 1.2.1 Preparedness against response
- 1.2.2 Pre-disaster Warning, Alerts
- 1.2.3 Evacuation stage

1.3 Response Plan

- 1.3.1 Incident Command System
- 1.3.2 Operational direction and coordination
- 1.3.3 Rapid damage assessment and reporting
- 1.3.4 Search and rescue
- 1.3.5 Medical response
- 1.3.6 Logistic arrangements
- 1.3.7 Communications
- 1.3.8 Temporary shelter management
- 1.3.9 Law & order
- 1.3.10 Public grievances/ media management
- 1.3.11 Animal care
- 1.3.12 Management of deceased
- 1.3.13 NGOs and Voluntary organizations
- 1.3.14 Relief management planning
- 1.3.15 Media management

1.4 Recovery and Rehabilitation Plan

- 1.4.1 Restoration of basic infrastructure
- 1.4.2 Reconstruction of damaged buildings/ social infrastructure
- 1.4.3 Restoration of livelihood
- 1.4.4 Psycho-social interventions

1.5 Cross cutting elements

- 1.5.1 Community Based Disaster Management
- 1.5.2 Needs of the Special vulnerability Groups
- 1.5.3 Addressing climate induced anthropogenic issues

- 2 Standard Operating Procedures:
 - 2.1 General SOPs for each line department
 - 2.2 Hazard Specific SOPs
- 3 Financial Provisions for Disaster Management
 - 3.1 District Disaster Response Fund
 - 3.2 District Disaster Mitigation Fund
- 4 Coordination Mechanisms with Other Stakeholders
 - 4.1 Mapping of Stakeholders in the District
 - 4.1.1 Public and Private Sectors
 - 4.1.2 NGOs and CBOs
 - 4.1.3 Religious Institutions
 - 4.1.4 Academic Institutions
 - 4.1.5 International Humanitarian Organizations
 - 4.2 Responsibilities of the Stakeholders
- 5 Inter- District Coordination Mechanisms – [Standard Operating Procedures / Protocols]
- 6 Intra- District Coordination Mechanisms – [with Block Headquarters]
- 7 Dissemination of the Plan
 - 7.1 Plan Evaluation
 - 7.2 Plan Update
- 8 Annexure:
 - 8.1 Important Contact Numbers
 - 8.2 District profile support files
 - 8.3 Inventory of resources
 - 8.4 Media related detailed information
 - 8.5 Do's and Don'ts of potential hazards
 - 8.6 Detailed maps

PREFACE

Before delving into the report, it would be imperative to state the significance of the study of Disaster Management and the subsequent need for the preparation of a DM Plan for the districts of MP. *An ounce of prevention is worth a pound of cure*, so goes the saying. It is fundamental to maintain a definite action-plan for tackling disasters which can be done by preparing a living document of Disaster Management Plan for each district. The research experience in Sagar, M.P revealed that, the issue of combating disasters needs a serious looking into both by the administration as well as among the general public.

Now, at this juncture, with a mind-set as displayed by the people antagonistic to disaster preparedness, the precise impact evaluation and designing the need and authority of such a plan become difficult. The official records of the district administration and the previous measures accorded in this direction make this attitude more evident. However, the kind of destruction to man and property that numerous disasters had brought about, and the potential hazards to which Sagar is prone, corroborate the need for an effective plan which could be a prospective driver to sustained growth and development not only in written form, but also in efficient practice.

EXECUTIVE SUMMARY

This is the report titled Sagar District Disaster Management Plan prepared during the period of May-July 2012 under the patronage of the DDMA and SDMA. Let me state that I have adopted an interpretive stand throughout my research and chosen an unbiased approach. The findings and results are obtained from concrete records cached and maintained in government offices or from concerned officials of the district administration including the DC, DDMA members and the Nodal Officer and not in the least tampered with in any manner. Further, the plan has evolved also through precise evaluation of numerous stakeholders, people affected, involved or engaged with disasters in the district in some or the other way through interviews and focus group discussions. There isn't any element of presupposed appraisal of the issue anywhere in the report.

The proposed plan comprises largely of tables, maps, department-specific action plans and annexure pertaining to each section which have helped in proper assessment of the district profile, administrative bodies, institutional arrangements in place, vulnerability, risk and measures taken over years and scope for future improvements and viable ways to implement the same. The precise figures from each department over years as many as possible have been assembled for this task. At places, the latest study reports by experts, academicians in the area of Disaster Management conducted in the district of Sagar have been referred to for understanding at depth the nature of the problem.

Considering the above, I finally zero in on the proposal of the final plan of Disaster Management Plan for the district of Sagar. It is hoped that the plan will carry out the projected objectives and will benefit the administration in the best possible way.

Abbreviations Used

°C: Degree Celsius

APL: Above Poverty Line

ASHA: Accredited Social Health Activists

BPL: Below Poverty Line

CHC: Community Health Centre

CMHO: Chief Medical & Health Officer

DCR: District Control Room

DDMA: District Disaster Management Authority

DDMC: District Disaster Management Committee

DDMO: District Disaster Management Officer

DEOC: District Emergency Operation Centre

EOC: Emergency Operation Centre

ESF: Emergency Support Functions

GP: Gram Panchayat

IAP: Integrated Action Plan

IAY: Indira Awaas Yojana

ICS: Incident Command System

ICT: Incident Control Teams

IDSC: Integrated Disease Surveillance Centre

IDSP: Integrated Disease Surveillance Project

ISP: Internet Service Provider

JNNURM: Jawahar Lal National Urban Renewal Mission

Kms: Kilometers

m: Meters

mm: Millimeters

NDCN: National Disaster Management Communication
Network

NREGS: National Rural Employment Guarantee Scheme

NRHM: National Rural Health Mission

PHC: Primary Health Centre

PWD: Public Work Department

RD: Rural Development

SOP: Standard Operating Procedure

Sq.: Square

SSA: Sarva Shiksha Abhiyaan

UD: Urban Development

A . GENERAL

A 1 Overview

A 1.1 DISTRICT PROFILE

The district of Sagar extends between latitude of 23°10' and 24°27' north and longitude of 78°4' and 79°21' south in the North Central part of Madhya Pradesh. It occupies an area of 10252 sq. km. The district is bound by the state of Uttar Pradesh in the north and the districts of Guna in the North-West, Vidisha in the West, Raisen in the South-West, Narsinghpur in the South and Damoh in the East. There are 7 subdivisions, 11 tehsils, 48 municipalboards, 12 blocks, 759 gram panchayats and 2105 villages in Sagar district. initially spelt as Saugor meaning lake because of the once beautiful lakes that it was surrounded by. The region is located in extensive plains with low hills and quite lots a small water bodies. Sagar, the sixteenth largest district in the state of Madhya Pradesh was founded by Udan Singh in 1660. The district is traversed by first class roads connecting it to major cities of Jabalpur and Damoh.



Source: <http://sagar.nic.in/new/index.html>

Sagar is known for its cultural heritage, diversity and tourist attractions and has a forest cover of 298010 hectares. Further, Sagar is known all over India due to its university Dr.

Harisingh Gaur University, Army Cantonment and Bhagyodaya Tirth.¹ There are 26 major rivers flowing across the district, some of which develop conditions of flood and subsequent damage to crops and property. Agriculture is the major occupation of people in Sagar. Kharif and Rabi are the major cropping seasons and wheat, gram, linseed, jowar paddy and soya bean are the major crops grown in Sagar.

Besides agriculture, the district has also witnessed the growth of a few of the industries such as handloom, flour-mills, bidis and ghee manufacturing.

A1.1.1 Location and administrative divisions

The district is divided into 11 tehsils and 12 blocks. The tehsils include Sagar, Rehli, Garhakota, Deori, Kesli, Rahatgarh, Khurai, Bina, Banda, Malthone and Shahgarh. (Refer the Table DM_1 for the details of the blocks.

Table A1.1.1

Location (in degrees)-	Latitude between 23°10' and 24°27' north
	Longitude between 78°4' and 79°21' south
District Area (in sq. kms)-	10252
Administrative Information-	
No. of sub divisions:	7
No. of Tehsils:	11
No. of Municipal Boards:	11
No. of Blocks:	12
No. of Gram Panchayats:	759
No. of Villages	2105
No. of Police Stations, Police Chowkees	33
No. of Post Offices (Block wise):	2 (Main Post offices), 63 sub-post offices, 333 branch offices, 13 P.C.O, 35704 telephone connection
Year of District Formation:	1660

¹It is the only second district in MP after Indore to have a Police Training College

Name of Adjacent districts:	Guna, Vidisha, Raisen, Narsinghpur, Damoh and the state of Uttar Pradesh
------------------------------------	--

The blockwise area of the district is given in Table 1.1 in the Annexure

A1.1.2 Geography and Topography

Sagar is situated in the Bundelkhand region in the north-easter part of the Malwa plateau just north of the Narmada river and is separated from this valley by a steep escarpment towards the south. The region is largely cropped by the Deccan trap lava flows whereas at places the Vindhyan sandstone also crops out. There are 26 streams and rivers flowing across the district chief of which are Sonar, Bebus, Dhasan and Bina rivers, all of which adopt a westerly direction towards the Ganges. The area in the north-west falling in the Khurai block is a level tract that is drained towards north-west by the tributaries of Betwa river. To the east of and south-east of the above discussed hills are the five parallel

valley of Dhasan, Bewas, Sonar, Kopra and Bamner rivers. The district has a moderate climate with the South-Westerly monsoons beginning in the month of June. The average maximum temperature of the region is 43.6° while the average minimum temperature is 10.2°.

Table A1.1.2

Name of rivers and lakes:	Sonar, Bebus, Chouri, Satavi, Dhasan, Bina, Kadaan, Kopra, Dunatar, Naren, Satabi, Sukhehan, Bajnandehi, Khariya, Jamuni, Baleh
No. of dams, embankments:	11
Name of existing mountain:	Garhphra mountains
Forest cover in the district:	298010 hectares

A 1.1.3 Demographic and socio economics

Sagar has a population of 2378295 out of which 1254251 are male and 1124044 are female. As per the 2011 census, Sagar recorded a sex ratio of 896. The average literacy rate in the district is 77.52% compared to the 2001 figure of 67.73%. A pretty huge variation in the male and female literacy rate is evident. For males, the literacy rate is 86.27 while for females it is a mere 67.73 as per the latest census.

70% of the population of Sagar live in rural areas and which include SC, ST, OBC and General categories.

Table A1.1.3

Total Household:	
Total Population	2378295
Male	1254251
Female	1124044
Population Density	232 per sq. km
Total APL, BPL families	APL: 1128196 BPL: 713728
Occupation	
Main Occupation of people	Agriculture
Secondary Occupation of people	Labour, government services

A 1.1.4 Climate and weather

The south western boundary of the district gets heavier rainfall while the intensity decreases towards the north and to the east. Rehli gets significant amount of rainfall due to its location in the valley in the leeward side of the hill range. The total annual rainfall of the district as of December 2011 was 1208.3 mm. The south-west monsoon hits the district only from mid-June to September-end which accounts for over 90% of the rainfall in Sagar. Sagar witnesses clear demarcation of three major seasons. Winter extends from the middle of November to end of February. March to May constitute summer season and the monsoon starts from the second week of June to the end of September. January is the coldest month and as of January 2012, the lowest temperature recorded was 10.2° while the highest temperature was 43.6° as of June 2011.

Table A 1.1.4

Rainfall		
Total Annual Rainfall of last year	1208.3	
Average Rainfall (last 10 years)	2002	1044.8
	2003	1218.5
	2004	1003.8

	2005	1527.2
	2006	966.4
	2007	713.2
	2008	1161.3
	2009	1044.4
	2010	819.4
	2011	1398.9
Temperature		
Average Maximum Temperature	43.6° (June, 2011)	
Average Minimum Temperature	10.2° (January, 2012)	
Demarcation of Crucial Seasons		
Months of excess rainfall leading to flood situation	June-October	
Months of water scarcity leading to drought situation	March-June	

Source: CMO Office, 2012

A1.1.5 Health

The district has three main kinds of hospitals: CHCs (Community Health Centres), PHCs (Primary Health Centres) and Sector PHCs. Each CHC comprises of three specialists, a medical and surgical specialist and a gynaecologist. Each PHC has 3-4 medical officers while each sector PHC has a single doctor in place. The sector PHCs are otherwise named as mini hospitals.²The medical officers of specialist ranks include MD, surgeon, gynaecologist, paediatrician and anaesthetist. Further, other medical and paramedical staff comprise of NMA, NMS, LHV, BEE, radiographer, staff nurse, dresser-grade-1, optical assistant, T.H.E.A, lab technician, compounder and A.N.M.

Table A 1.1.5

Shahpur	No of Primary Health Centres (PHCs)	No. of medical officers	1
		No. of nurses, compounders (medical/paramedical staff):	44
		No. of available ambulances:	-
		No. of beds	-

²It is to be noted here that dispensaries are an old set-up prevalent mostly in small towns. Civil dispensaries are now changed to sector PHCs.

	No. of Community Health Centres (CHCs)	No. of medical officers No. of nurses, compounders (medical/paramedical staff): No. of available ambulances: No. of beds	1 9 - -
Banda	No of Primary Health Centres (PHCs)	No. of medical officers No. of nurses, compounders (medical/paramedical staff): No. of available ambulances: No. of beds	2 2 - -
	No. of Community Health Centres (CHCs)	No. of medical officers No. of nurses, compounders (medical/paramedical staff): No. of available ambulances: No. of beds	2 60 - -
Shahgarh	No of Primary Health Centres (PHCs)	No. of medical officers No. of nurses, compounders (medical/paramedical staff): No. of available ambulances: No. of beds	0 1 - -
	No. of Community Health Centres (CHCs)	No. of medical officers No. of nurses, compounders (medical/paramedical staff): No. of available ambulances: No. of beds	2 36 - -
Rehli	No of Primary Health Centres (PHCs)	No. of medical officers No. of nurses, compounders (medical/paramedical staff): No. of available ambulances: No. of beds	2 55 - -
	No. of Community Health Centres (CHCs)	No. of medical officers No. of nurses, compounders (medical/paramedical staff): No. of available ambulances: No. of beds	- - - -
Khurai	No of Primary Health Centres (PHCs)	No. of medical officers No. of nurses, compounders (medical/paramedical staff): No. of available ambulances: No. of beds	2 6 - -
	No. of Community Health Centres (CHCs)	No. of medical officers No. of nurses, compounders (medical/paramedical staff): No. of available ambulances: No. of beds	4 15 - -

Kesli	No of Primary Health Centres (PHCs)	No. of medical officers No. of nurses, compounders (medical/paramedical staff): No. of available ambulances: No. of beds	2 7 - -
	No. of Community Health Centres	No. of medical officers	1

	(CHCs)	No. of nurses, compounders (medical/paramedical staff): No. of available ambulances: No. of beds	40 - -
Rahatgarh	No of Primary Health Centres (PHCs)	No. of medical officers No. of nurses, compounders (medical/paramedical staff): No. of available ambulances: No. of beds	2 5 - -
	No. of Community Health Centres (CHCs)	No. of medical officers No. of nurses, compounders (medical/paramedical staff): No. of available ambulances: No. of beds	2 46 - -
Deori	No of Primary Health Centres (PHCs)	No. of medical officers No. of nurses, compounders (medical/paramedical staff): No. of available ambulances: No. of beds	1 5 - -
	No. of Community Health Centres (CHCs)	No. of medical officers No. of nurses, compounders (medical/paramedical staff): No. of available ambulances: No. of beds	4 48 - -
Garhakota	No of Primary Health Centres (PHCs)	No. of medical officers No. of nurses, compounders (medical/paramedical staff): No. of available ambulances: No. of beds	0 1 - -
	No. of Community Health Centres (CHCs)	No. of medical officers No. of nurses, compounders (medical/paramedical staff): No. of available ambulances: No. of beds	4 5 - -
Garhakota	No of Primary Health Centres (PHCs)	No. of medical officers No. of nurses, compounders (medical/paramedical staff): No. of available ambulances: No. of beds	0 1 - -
	No. of Community Health Centres (CHCs)	No. of medical officers No. of nurses, compounders (medical/paramedical staff): No. of available ambulances: No. of beds	4 5 - -

Malthone	No of Primary Health Centres (PHCs)	No. of medical officers No. of nurses, compounders (medical/paramedical staff): No. of available ambulances: No. of beds	0 2 - -
----------	--	---	------------------

	No. of Community Health Centres (CHCs)	No. of medical officers No. of nurses, compounders (medical/paramedical staff): No. of available ambulances: No. of beds	2 5 - -
Sagar	No of Primary Health Centres (PHCs)	No. of medical officers No. of nurses, compounders (medical/paramedical staff): No. of available ambulances: No. of beds	3 6 - -
	No. of Community Health Centres (CHCs)	No. of medical officers No. of nurses, compounders (medical/paramedical staff): No. of available ambulances: No. of beds	- - - -
Mandi Bamora (Bina)	No of Primary Health Centres (PHCs)	No. of medical officers No. of nurses, compounders (medical/paramedical staff): No. of available ambulances: No. of beds	0 2 - -
	No. of Community Health Centres (CHCs)	No. of medical officers No. of nurses, compounders (medical/paramedical staff): No. of available ambulances: No. of beds	- - - -

Refer Table 1.2 in the Annexure for block-wise availability of CHCs, PHCs and Sector-PHCs.

Blood Banks and Trauma Centres: Sagar district has a blood bank that is located at the district hospital which functions as per the Government of India guidelines. HIV, HCV (Hepatitis C Virus), HBV (Hepatitis B Virus), VDRL (Venereal Disease Research Laboratory test for syphilis), malaria and Hb (haemoglobin) are the mandatory tests that the blood bank undertakes.

District Hospital, Sagar
Contact Person: Dr. R K Dixit
Mob: 9827245793
License No- 28-C-3-94

As of date, no trauma centres are in place in the district, although the plan for setting up one near the Tili Medical College in Sagar block is in progress.

A1.1.6 Education

The average literacy rate of Sagar as per the 2011 census was 77.52% as against 67.73% in 2001. If the gender-wise details are looked at, the male literacy rate is 86.27 while for females the figure is 67.71. The tehsil-wise figures of literacy rates are given below.

Table A1.1.6

	Khurai	Banda	Rahatgarh	Sagar	Garhakota	Rehli	Kesli	Malthone	Shahgarh
Literacy Rate (%)	64.43	60.18	65.1	75.81	64.38	61.9	59.78	-	-
Total male	62191	89748	35551	265448	34502	30273	31430	-	-
Total female	38099	46599	20356	172406	19093	21354	17459	-	-
Total	100290	136347	55960	437890	53595	59627	48889	-	-

No of Secondary Schools	71
No of High Schools	152
No of Middle Schools (Std VIth to VIIIth)	905
No of Primary Schools	2200
No of Anganwaris	2199
No of Training Centres	Not available
No of Engineering Colleges	1
No of Medical Colleges	1
No of Other Colleges	25
Total (Approx) strength in all the educational institutions:	1-8 th standards: Boys: 149741 Girls: 158021
Total (Approx) Staff Strength in all the educational instutions	Primary and upper primary: 8292

Source: Department of Education, 2012, Census, 2011

The district has a good schooling system, although the English base in these schools aren't firm, but hindi is a flourished language. The University of Sagar is a deputed institute founded by Dr. Hari Singh Gour and has an extensively large UTD campus. The district has a medical college that is located near the Tili village some 4-5 km from the main bus stand. The details of educational institutions in the district are given in Table 1.3 of the Annexure.

A1.1.10 Agriculture and land use

Sagar is suitable for the growth of Rabi crops including those of wheat, gram and linseed. Wheat is the staple crop and is grown over an area of 1637.4 sq. km. Other major crops

cultivated include linseed, soya bean, grams and jowar. On occasions of heavy rain, the Kharif crops are rotten in water-logged areas, while at other times, the rabi crops may be destroyed due to frost or bad weather. The relative dominance of Kharif or Rabi is therefore largely determined by the climatic conditions.

Soil Patterns

The major part of Sagar is formed by Black Cotton soil mostly in the south and central parts. Towards the north and east, it is predominantly formed of reddish brown alluvium. Hirapur is known for its iron-ore extracts. However, parts of Khurai, Malthone, Rehli, Deori and Banda are covered with clay and loamy soil. The blocks of Kesli, Banda and Shahgarh have mostly silt loam soil covers. Parts of Most blocks have high nitrogen and medium levels of phosphorous and potash contents as well.

Saline water formation is encountered in Khimlasa in Khurai block, Prahladpur in Banda and Hirapur in Shahgarh. Excessive nitrate content (more than 100 mg/L) is found in Khimlasa, Khurai, Behrol, Banda, Hirapur, Parsoria and Jaisinagar regions of the district.

Table A 1.1.7

Cropping Pattern	
Type of major crops	Soya bean, Rice, Maize, Wheat, Gram
Cropping Seasons	Kharif and Rabi
Land Classification	
Forest Land	298010 hectares
Barren & Uncultivated land	98007 hectares
Cultivated Land	54618 hectares
Pasture Land	8742 hectares
Soil Classifications	
Saline	salinity more than 2500 ms/cm found in localised areas
Water Logging	Nil
Recurrent flood-hit area	190.62 sq. km

Source: Department of Land Records (2011) and Soil Department (2012)

A 1.1.8 Housing Pattern

In most parts of the district, slopping roofs are found to drain off rainwater especially in Rehli, Deori and Banda blocks where the rainfall is heavy. R.C.C buildings are also constructed in these areas, while in rural Sagar thatched or roofs of mud or brick are common. These are vulnerable to storms and heavy rainfall. The migrants from Maharashtra, Orissa.etc reside in Parkota (Sagar) and Malthone in tents made of tarpaulin which are blown away during monsoon.

Table A 1.1.8

Housing Pattern	
Type of Housing Construction	Kuchcha and Pucca houses
Type of material used	RCC, Brick for pucca houses Mud houses with thatched roofs for kuchcha houses
Flooring Types (Ground and above)	Mostly, G-level houses with G+1 and G=2 level construction are found. G=3 level flooring types are less common. High-rise and multi-storeyed buildings are also rare

Source: Nagar Nigam (Municipal Corporation), Sagar (2012)

37.4% of houses in rural areas are made of unburnt brick walls in the district while the figure is 5.4% in urban areas. There are 4352 houses in Sagar that belong to C1 (Concrete walls) and 12774houses are made of wood walls.3.6 % of the roofing system belong to the light-weight category, 71.7% in the heavy weight and 24.8% are flat roofs.³

A 1.1.9 Industrial set ups

The MP government has placed Sagar district in Category 'C' among the industrially backward districts. Bidi making is the traditional business in Sagar four main industries of medium category are present viz. Straw Board, Vegetable Oil, Refined Oil and Single Superphosphate Fertilizer .Among the small-scale industries, the prominent ones are steel utensils, plastic goods, detergent cake powder, maida, agriculture equipment, welding electrodes, alum, caustic soda, solvent plant, agarbatti, granite, acrylic sheet, dal mill, PVC cable, pipe etc.

Table A 1.1.9

Total no. of industries (Govt., Semi-Govt, and Pvt), Block wise	
a) No. of Major Accident Hazard Units/ Polluting industries/ Industrial Areas:	6
	a) No. of Major Accident Hazard Units / Polluting: 6 Following constitute the major polluting industries in the district: <ul style="list-style-type: none"> • Bharat Oman Refineries Ltd, Agasaud, Bina

³ Peer group, MoH&UPA, GOI, 2004

<p>Total workforce involved in these industrial units:</p> <p>b) No. of Medium and small scale industries:</p>	<ul style="list-style-type: none"> • Hindustan Petroleum Ltd., Village Narayavali • Indian Oil, Banda • Bina Thermal Power Plant, Village Sirchaupi, Sagar • Madhya Bharat Agro Products Ltd. (MBAPL). MBAPL has two units as described below <p>UNIT - I Madhya Bharat Agro Product Limited Village - Rajua , Distt- Sagar M.P. India. Ph.-07582-248109,329299</p> <p>UNIT - II Madhya Bharat Agro Product Limited Banda Industrial Area Village - Sorai, Teh – Banda Distt- Sagar (M.P.) Pin No.470335 Ph. -91-9302536879</p> <ul style="list-style-type: none"> • Central India, Paper and Boardmill, Kishanpura, Sagar <p>1950 (approx.)</p> <p>4 medium and about 10000 small scale industries</p>
<p>Any major accident occurred in any of the industrial units</p>	<p>Minor accidents in the chemical factories and at the Bina refinery, but no loss of life reported</p>

Source: Industries Department (2012) and Board of Pollution Control, Makhronia, Sagar

Refer Table 1.4 in the annexure for details of small and medium-scale industries

A 1.1.10 Transport and communication network

Sagar is accessible by rail as the town of Sagar lies on the Bina-Katni branch of the Central Railways. The district is connected through highways and rails at numerous places with Sagar itself being the most developed among these. The state highways run across all the eleven blocks with the NH connecting Gyrapur in Vidisha to Sagar and extends to Chattarpur via Banda and Hirapur. The Sagar railway station is the largest in the district which serves trains

to Bhopal, Jabalpur and Indore with Bina, Khurai, Jeruvakhera as the prominent stations. Bina is also an important railway junction which is on the Bhopal-Jhansi rail route that connects Sagar-Katni. The nearest airports are that of Bhopal and Nagpur.

The provisions of wireless and internet facility are available in all blocks, but it needs to be considered to have in place sufficient number of HAM Radio Stations as well to tackle the problem of failed communication networks at the time of severe rains.

Table A 1.1.10

1) Transport Connectivity:	
Roads	NH 12 passes through Bahadurpur, Rahatgarh, Sagar, Banda, Shahgarh and Hirapur The East-West Corridor 26 cuts the district through Barodiya, Bilehni, Sagar, Deori and Maharajpur
Rail	Rail connectivity from Bina-Etawa to Karoned and from Bina to Sagar via Khurai
Airways	Bhopal which is 213 km from Sagar is the nearest airport.
2) Communication network	
i) No. of wireless stations in the respective blocks	33
ii) Availability of telephone, mobile services in each block	Available
iii) Availability of internet facility in the blocks	Available
iv) No. of HAM Radio Stations in the blocks	2

Source: Department of Transport, 2012

Major road and rail networks are showed in the detailed map enclosed in Annexure 8.6

A 1.1.11 Power stations and electricity installations

The district of Sagar has five power stations, two of 220 kV situated in Bina and Sagar and the other three of 132 kV in Deori, Sagar and Garhakota. Sources at the Electricity Department Divisional Office at Makhronia, Sagar report that Sagar division has 15 power stations in all and DG Sets are available in Bina and Sagar.

Table A 1.1.11

List of power stations in the district	220 kV S/S, Bina, 220 kV S/S, Saikheda (Sagar), 132 kV S/S, Gourjhamar (Deori), 132 kV S/S, Sagar, 132 kV S/S, Garhakota
Electricity outreach in the district	92 out of the 1870 villages are un-electrified while 1778 of them are considered for intensive electrification
Available sources of electricity in the district, like DG sets etc.	There are two 3-phase 415 volt, 50 Hz DG sets in the district; one in Bina and the other in Sagar

Source: Electricity Board (Divisional Office), Sagar, 2011

A1.1.12 Major historical, religious places, tourist spots

Sagar has numerous places that serve as potential tourist attractions most of which are lakes and old forts. The following table lists the places of interest in the district and the average number of visitors in these sites each day.

TableA1.1.12

		Average presence of visitors per day
List of historical places in the district	Fort of Rahatgarh (dates back to 1863)	500
	Fort at Khimlasa, Tehsil Khurai	180
	Paintings of Abchand, Tehsil Sagar	150
List of religious centres in the district	Chandika Temple, Baleh village (Tehsil Rehli)	120
	Phulnath temple, Bhapel (Tehsil Sagar)	255
List of tourist spots	Sheesh Mahal, Garhpahra, Tehsil Sagar	600
	Forts of Eran, Tehsil Khurai	100
	Chaitra fair, Rangir, Tehsil Rehli	120

Source: Archaeological Department, 2012

A 1.2 Scope and Ownership of District Disaster Management Plan

Any type of disaster, be it natural or manmade, leads to immense loss of life, and also causes damage to the property and the surrounding environment, to such an extent that the normal social and economic mechanism available to the society, gets disturbed.

The Govt. of India, recognized the need to of a proactive, comprehensive, and sustained approach to disaster management to reduce detrimental effects of disasters on overall socio-economic development of country, and came out with Disaster Management (DM) Act 2005, and highlighted the role and importance of District Disaster Management Plan. The Govt. of Madhya Pradesh (GoMP) also believes that there is a need for a Disaster Management Plan in every district that articulates its vision and strategy for disaster management in the state. In this context the Madhya Pradesh State Disaster Management Authority (MPSDMA) provides guidelines to various entities involved in disaster management in the state to discharge their responsibilities more effectively.

Further, as per the DM Act, the District Disaster Management Authority to be formed in each district and it will be the nodal agency for preparation, functioning and review of the District Disaster Management Plan (DDMP).

The scope of district disaster management plan is very wide, and it is applicable in all the stages of disasters (before, during, after & non disaster time). The DDMPs can help officials in taking important decisions and also provide guidance to direct subordinates in emergency. The DDMP helps in saving the precious time, which might be lost in the consultations, and getting approval from authorities.

It will be the responsibility of the District Disaster Management Authority members to look after the district and sub district level institutionalization activities pertaining to the disaster management, including the periodic review of district disaster management plan and allied functions.

DDMP is an operational module for district administration (owned by the DDMA) and it helps to effectively mitigate the different types of disasters with locally available persons and resources. It also ensures a checklist for all the stakeholders for an action oriented response structure and to study their preparedness level.

A 1.2 Purpose of the Plan

To make the district safer, and respond promptly in a coordinated manner in a disaster situation, mitigate potential impact of disasters in order to save lives of people and property of the respective district.

A 1.3 Key Objectives

Complying with the DM Act 2005, the objectives guiding the formulation of the plan are:

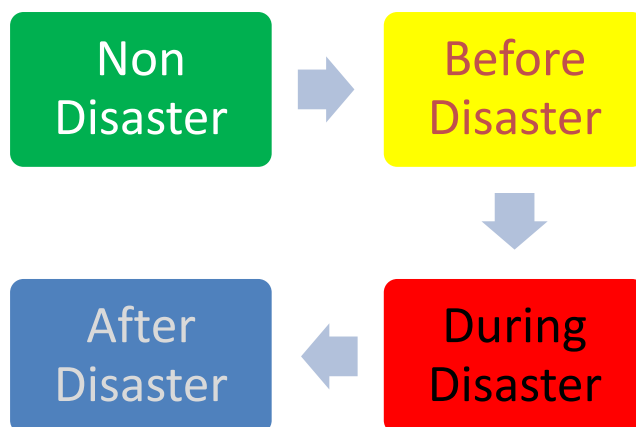
- Assess all risks and vulnerabilities associated with various disasters in the district
- Promoting prevention and preparedness by ensuring that Disaster Management (DM) receives the highest priority at all levels in the district.
- Prevention and minimization of loss of human lives and property by gearing up preparedness, prevention & mitigation of disasters
- To provide clarity on roles and responsibilities for all stakeholders concerned with disaster management so that disasters can be managed more effectively
- Assisting the line departments, Block administration, urban bodies and community in developing coping skills for disaster management & Ensuring that community is the most important stakeholder in the DM process.
- To strengthen the capacities of the community and establish and maintain effective systems for responding to disasters
- Developing convergence of action in addressing, preventing and mitigating disasters and to equip with maximum possible relief measures and to resort to pre-disaster, during and post-disaster steps.
- To establish and maintain a proactive programme of risk reduction, this programme being implemented through existing sectoral and inter-sectoral development programmes and
- Mainstreaming DM concerns into the developmental planning process.
- Encouraging mitigation measures based on state-of-the-art technology and environmental sustainability.
- To address gender issues in disaster management with special thrust on empowerment of women towards long term disaster mitigation
- Developing contemporary forecasting and early warning systems backed by responsive and fail-safe communications and Information Technology support.
- Encourage training and create awareness, rehearsals, dissemination of knowledge, and information on DM among all the citizens living in the district.
- Ensuring relief/assistance to the affected with care, without any discrimination of caste, creed, community or sex
- Undertaking reconstruction as an opportunity to build disaster resilient structures and habitat.
- Undertaking recovery to bring back the community to a better and safer level than the pre-disaster stage
- To develop disaster management as a distinct management discipline and creation of a systematic and streamlined disaster management cadre

A 1.4 District Plan Approach

The aim of the plan is to establish necessary systems, structures, programs, resources, capabilities and guiding principles for reducing disaster risks and preparing for and responding to disasters and threats of disasters in respective district, in order to save lives and property, avoid disruption of economic activity and damage to environment and to ensure the continuity and sustainability of development.

The district disaster management plan has a holistic and integrated approach with emphasis on prevention, mitigation and preparedness by ensuring that Disaster Management receives the highest priority at all levels in the district. It has a paradigm shift, similar to the lines of national and state level, from reactive and relief centric approach to disasters. The approach is aimed to conserve developmental gains and also minimize losses to lives, livelihood and property.

For efficient execution of the District Disaster Management Plan, the Plan has been organized as per these four stages of the Disaster Cycle.



Non disaster stage: Activities include disaster mitigation, leading to prevention & risk reduction.

Before disaster stage: Activities include preparedness to face likely disasters, dissemination of early warnings.

During disaster stage: Activities include quick response, relief, mobilization of search & rescue, damage assessment.

After disaster stage: Activities include recovery & rehabilitation programs in disaster affected areas.

A2. INSTITUTIONAL ARRANGEMENTS

Setting up Disaster Management Plan is aimed at reducing the severity and adverse impacts of fatal disasters by launching suitable systems for prevention, mitigation, preparedness, awareness and relief and rehabilitation. The task is carried out through the interlocked and refined cooperation of various departments at all levels: district, block and gram panchayat

and therefore requires accurate definitions of the roles and responsibilities of every department, proper and coordinated execution of functions to extend support to every section of the affected population and precise information and management systems in place for effective preparedness and spread of awareness.

District level Control Room

At the district level, for tackling and controlling situations of excessive rainfall or flood, Disaster Emergency Control Room is established in the month of June. The district of Sagar has had miniscule effects of flood occasionally. The flood control measures are carried out with close coordination and assistance of the tehsildars of the eleven tehsils by means of information assortment over long distances. The information collection is done on a daily basis. Further, when conditions of flood develop, aide from the jawans of Homeguard, concerned line departments and the Municipal Corporation are also sought.

The daily updates of excessive rainfall and flood situations are sent to the Bhopal Control Room. Further, the Collector intervenes for getting assistance from Army as well in case additional personnel and equipment are needed for relief and evacuation. As per records, loss of life during floods has been reported only during the severe floods of 2005. The year of 2010-11 was marked by minor events of flood in the Jhangri village of Banda tehsil and few villages of Rehli, however, there weren't reports of loss of lives.

In the following section, the institutional hierarchical structure of Disaster Management as per DM Act 2005 is elaborated and then in the light of the situational assessment of Sagar district, the plan s evolved.

As per the DM Act 2005, disaster management is a continuous and integrated process of planning, organizing, coordinating and implementing measures which are necessary or expedient for

- Prevention
- Mitigation
- Capacity-building
- Preparedness
- Prompt response
- Assessing the severity or magnitude of effects of any disaster
- Evacuation, rescue and relief
- Rehabilitation and reconstruction

At the district level, the District Disaster Management Authority (DDMA) has been constituted in all districts of Madhya Pradesh. In Sagar, the authority comprises of following officials:

- District Collector (Chairperson)
- Additional District Magistrate (Upper Collector)
- Chief Medical Officer (Member)

- Chief Executive Officer, Zilla Panchayat (Member)
- Superintendent of Police (Member)
- Executive Engineer, Municipal Corporation (Member)
- Chairperson, Zilla Panchayat (Member)

Table A2.1

Date of inception of DDMA		2005	
Members of DDMA			
Name	Actual Designation	Current Position in DDMA	Contact No.
Shri Ramesh Kumar	Collector	Chairperson	9425394888
Shri Harvansh Singh Rathore	Chairman Zilla Panchayat	Co-Chairperson	-
Smt. Anita Ahirvar	Municipal Corporation	Secretary	-
Shri Pramod Verma	Superintendent of Police	Secretary	9752271777
Shri B K Mishra	Chief Medical Officer	Secretary	9425425388
Shri Nandakumaram	CEO, Zilla Panchayat	Member	8989011707
Shri P S Jatav	Upper Collector	Member	9425369386

Source: Department of Land Record, 2012

Roles and Responsibilities of DDMA

As per the DM Act of 2005, the DDMA serves as the planning, coordinating and implementing body as per the guidelines of NDMA and SDMA.⁴

- It prepares the District Disaster Management Plan and coordinates and monitors the implementation of the National Policy, State Policy, National Plan, State Plan and District Plan.
- The DDMA further lays down the guidelines to be followed by the various government departments at the district level for integrating prevention and mitigation of disasters in their development plans and projects and provide necessary technical assistance.
- It reviews the state of capabilities to respond to disasters and preparedness measures adopted.
- Further, the DDMA organizes training programmes for rescue and relief personnel, officials, employees and also at the community level with the help of local authorities, government agencies, NGOs and other private parties.
- It also ensures that each government department at district level prepares its own Disaster management plans as per the District Plan.
- It examines if the construction of buildings and other structures in all the areas are in accordance with the standards for the prevention and mitigation of disasters. In case,

⁴The functions of DDMA are specified in Chapter IV, Section 25 of the DM Act 2005

the set standards are not followed, it directs the concerned authority to take such action as may be necessary to secure compliance of such standards.

- It ensures if the communication networks are her government agencies, in place and the contingent plans mobilize and involve other government agencies/NGOs and private parties in the task of disaster management.
- Identifying locations and buildings that can be used as relief and rehabilitation camps are and ensuring water-supply and sanitation in such buildings or places.

The DDMA is the operational body in the task of Disaster Mangement and no separate committee is formed as of now at the district, block or gram-panchayat level.

A2.3 District Emergency Operations Centre (DEOC)/District Control Room

Location of the DEOC/DCR	Department of Land Records	
Involved agencies in DEOC/DCR, Roles and Responsibilities of the officials/nodal persons		
Agencies involved	District Administrative Departments	
	Police Department	
	Homeguard, Sagar	
Members of DEOC		
Name	Designation	Contact No.
H G Agnihotri	Revenue Inspector	9926965863
Dr. Pranay Kamal Khare	Child Control Officer	9669111100 9425614100
Deepak Pandey	Director, Sagar Engineering College	9827514185
Ajay Chauhan	Lab Assistant, PHU	9977484847
Nandlal Adivasi	Assistant Labour Commissioner, Sagar	9893206673
Netram R. Sakhvar	A.S.L.R	9893544856

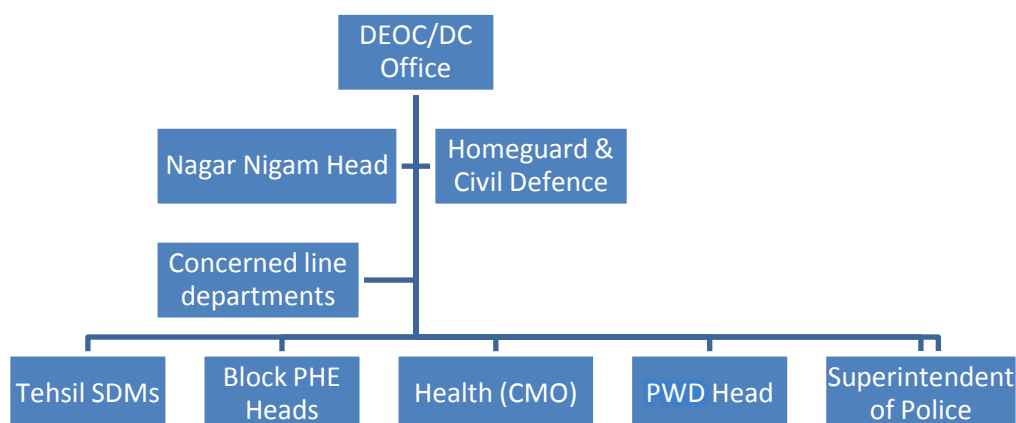
Source: Department of Land Records, 2012

Although there is no Urban Area DM Committee or Block level/GP level DM Committee in place in the district as of now, setting up such committees at each level is suggested with proper and regular updation of their action plan.

A 2.4 District Disaster Information Management System

The sources at the DC office report that during the event of a disaster, the information flows mainly from the control room and the Collector alerts the concerned line departments about their responsibilities and provides guidelines regarding their desired action plan.

The following flow chart explains the information management mechanism in the district.



A2.5 Urban Area Disaster Management Committee

The following structure of Urban Area Disaster Management Committee is suggested:

Recommended Urban DM Structure

Official/Functionaries	Designation in the Committee
Collector	Chairperson
CEO Zilla Panchayat	Co-Chairperson
Additional Collector	Member
Executive Engineer	Member
CMO	Member
Head, Municipal Department	Member
Head, Industries Department	Member
Head, District Town Planning	Member

Roles and responsibilities of Urban DM Committee:

- Monitoring the building construction norms and safety standards and incorporating appropriate safety measures in the task of town planning.
- Spreading awareness among the community about flood and earthquake-resistant measures.
- Prepare a list of resources and ensure their periodic inspection and maintenance.

A2.6 Block level Disaster Management Committee

Block level DM Committee basically focuses on training and capacity building at the community level. Community sensitization and awareness campaigns are undertaken in this regard.

Recommended Block Level Disaster Management Committee

Functionaries	Designation
SDO Police/ In charge Police Station	Chairman
SDM/ Tehsildar/Nayab Tehsildar	Co Chairman
Head of Nagar palika/ Nagar Panchayat	Member
Block Medical Officer	Member
Assistant Engineer (Irrigation)	Member
Assistant Engineer (PWD)	Member
NGO's working in the field of Disaster Management	Member
Range Officer, Forests	Member
Junior Engineer (JTO), Telecom	Member
Platoon Commander, Home Guards	Member

Roles and Responsibilities of Block level DM Committee:

- The block level DM Committee identifies the potential vulnerabilities and analyses the resource capacity of the region. It prepares a data base of vulnerable household, population at block level
- Prepare a list of search and rescue equipment, relief material, and Man power available at short notice
- Ensure capacity building and proper maintenance of equipment
- Prepare operating procedure for various hazards present in block and update it once a year
- Formation of Advisory committees as per requirement
- Manage Disaster management- development coordination by ensuring that all the structures are earthquake and flood-resistant
- Carry out awareness and sensitization campaigns

A2.7 Gram Panchayat Level Disaster Management Committee

The gram panchayat level DM Committee forms the most basic and grassroots initiative to tackle disaster situations. The following structure of GP DM Committee is recommended.

Recommended GP Level DM Committee:

Functionaries/Agency/Institutions	Designation
Gram Sarpanch	Chairman
Patwari	Co Chairman
Kotwar	Member
ASHA (Health Department)	Member
Line man (Electricity and telecommunication)	Member
Anganwadi Worker	Member
Maintenance officer/ In-charge (PHE, PWD, Irrigation)	Member

Roles and responsibilities of GP level DM Committee:

- Communicate with District and Block level disaster management committee on receipt of any warning
- Create Awareness among communities about vulnerable sites, areas
- Identification of resources available in villages and ensure availability at short notice
- Ensure Training and capacity building with involvement of local villagers
- Formation of Search and Rescue team, Relief Team, Primary Health Team, Disposal of dead body and cleaning team etc. at village level as per requirement

B . HAZARD, VULNERABILITY ASSESSMENT AND RISK PROFILING (HVRC)

The district of Sagar is prone to 19 out of the 33 hazards as identified by the High Powered Committee which can be divided into five sub-groups: water and climate related, geologically related, chemical and industrial, accident related and biologically related. Apart from these, ejection of poisonous gases from dry tube wells during scorching summers is another hazard that is common in the district. In all the 20 hazards to which Sagar is vulnerable to is listed as below:

∞ Water and Climate Related Disasters

Floods/Flash Floods

Droughts

Hailstorm

Cloud Burst

Ejection of poisonous gases from dry Tube wells during summer

Heat Wave and Cold Wave

Thunder and Lightning

∞ Geologically Related Disasters

Dam Failures/ Dam Bursts

Lanslides

∞ Chemical and Industrial Disasters

∞ Accident Related Disasters

Forest Fires

Urban Fires

Festival related disasters

Electrical Disasters and Fires

Road and Rail Accidents

Boat Capsizing

Village Fire

∞ Biologically Related Disasters

Biological Disasters and Epidemics

Pest Attacks

Cattle Epidemics

Food Poisoning

B 1. Hazard Assessment

In the subsequent sections, the key disasters that strike the district of Sagar, and their past records are elaborated. Precise identification of the villages/GPs/tehsils that have recorded these disasters are done followed by their vulnerability and risk analysis.

Sagar lies as below mentioned zone:

Type of Hazard	Zone	Blocks
Earthquake	Zone II	All Blocks
Flood	Area which is near to river and dams	Deori, Banda, Rehli, Sagar
Landslide	Marginally Affected	All

Table B 1.1 Major Applicable Hazards

Among the 19 identified hazards in the district, the major ones are flood, drought, frost, fire, road accidents, industrial and chemical accidents, riots/violence.

Type of applicable hazards	Hazard prone blocks
Flood	Sagar, Khurai, Rehli, Deori
Frost	All eleven blocks
Drought	All eleven blocks
Fire	All eleven blocks
Rail/Road accidents	All eleven blocks
Violence	All eleven blocks

Flood:

The most common among the natural hazards that strikes Sagar is flood which results due to excessive rain during the months of June-October. Sagar, Khurai, Rehli and Deori are the tehsils most vulnerable to flood conditions.

- Rehli Tehsil : 11 villages
- Garhakota Tehsil: 12 villages
- Sagar Tehsil : 5 villages
- Deori Tehsil : 6 villages
- Kesli Tehsil : 4 villages
- Banda Tehsil : 2 villages

Earthquake

There are no previous records of earthquake in Sagar although it lies in the Zone II of earthquake vulnerability. Earthquake of slight intensities (1.5-2 on the Richter Scale) have been experienced in the past which didn't cause any damage. However, weak structures including educational institutions and government offices are at risk due to the potential hazard of earthquake.

Dry Bore wells and tube wells

One of the sombre hazards that though prevalent in large parts of the district, but haven't been addressed closely by the administration as such is that of bore wells and tube wells that dry up in the scorching heat during summer, which pose severe threats to life. Sources from the DC office report that the workers who delve deep into these wells which are 40-70 feet deep, for cleaning purposes often get trapped. Although no cases of death due to suffocation and exposure to poisonous gases in these wells have been reported till date and no records regarding such incidents are maintained, it requires to seriously looking into the issue.

Drought

The condition of drought develops in Sagar mainly during March-May and is a temporary reduction in water and moisture availability significantly below the normal or expected amount for a specific period. The impact of drought had been largely experienced in Kesli, Sagar, Khurai and Banda tehsils. The droughts in Sagar are often of normal impact.

Tehsil	Villages affected
Rehli	77
Garhakota	96
Sagar	67
Banda	123
Bina	111
Kesli	88
Khurai	58
Deori	98
Rahatgarh	78
Malthone	62

Frost:

The rural vulnerability to the impact of frost was most conspicuous. Out of the 2089 families affected due to crop damage arising out of frost, 98.42% belonged to rural areas (2056 families) As per the reports of Krishi Vigyan Kendra Sagar, the crops such as Lentil (Masoor) and Pigeon Pea (Arhar) had recorded the maximum damage, both suffering a loss of 85-90% of sown area. Banda, which lies towards the south eastern part of Sagar, was the tehsil with

most number of affected families. Other affected tehsils included Sagar, Rahtgarh, Khurai, Bina, Shahgarh, Malthone, Rehli, Garhakota, Deori and Kesli.

Tehsil Name	No of affected families		
	Total	APL	BPL
Bina	10910	6865	2013
Khurai	18303	7948	4366
Malthone	28461	10250	7611
Banda	28802	5687	17540
Shahgarh	12332	2975	6942
Rahatgarh	22391	12539	5374
Sagar	86491	44380	20652
Rehli	14362	8123	4164
Garhakota	23391	12329	8227
Deori	22295	7386	7099
Kesli	21914	8374	3680

Fire:

Fire is common in all the eleven blocks of the district, although most number of forest fires are recorded in Malthone and Shahgarh regions. Sagar has a single fire department that operates in conjunction with the municipal corporation.

Table B 1.2 History of past disasters

The past records of disasters that have struck Sagar district is given below. Refer Table 2.1 in the Annexure for tehsil-wise list of flood prone villages.

Type of hazard	Year of occurrence	Area affected	Impact on life	Livelihood	Livestock	Hazard prone zone in district
----------------	--------------------	---------------	----------------	------------	-----------	-------------------------------

Flood	2005	1752 villages in the district were devastated which included Nivadi, Madla, Chuhra, Kudayi, Madhiya, Padriya villages in Rehli were badly affected.	27 people were dead and 1 went missing. 99 roads having a length of 217.3 km., 85 bridges and 52 houses were damaged.	3263 kuchcha and 3731 pucca houses were damaged completely.	3147 animals were found dead	Parts of Garhakota, Rehli, Deori, Sagar, Rahatgarh and Banda
	2009	Sibhriya, Parsayi villages in Rehli tehsil and Khichwara, Gaurjhamar in Deori	-	-	-	Sagar, Rehli, Deori, Rahatgarh
	2011	Jhangri village of Banda and few villages in Rehli	-	-	-	Rehli, Banda
Frost	January, 2011	188047.34 hectares of cropland was damaged in the 11 blocks of Sagar	Loss of crops resulted in their unavailability and eventually their prices shot up	-	-	All eleven blocks

Table B.1.2 Seasonality of Hazards

The focus in this section is on the natural disasters which to some extent are predictable. In Sagar, flood strikes mainly between July and October. Though, Sagar comes under Zone II of

earthquake vulnerability, no records of earthquake damage have been found as of date. The severe drying up of tube wells occurs during March-June when the temperature reaches as high as 47°C.

Table B.1.3

Hazard	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Flood	-	-	-	-	-	Yes	Yes	Yes	Yes	Yes	-	-
Earthquake	-	-	-	-	-	-	-	-	-	-	-	-
Drought	-	-	Yes	Yes	Yes	Yes	-	-	-	-	-	-
Hailstorm	-	-	-	-	-	-	-	-	-	Yes	Yes	Yes
Dry Tube wells	-	-	Yes	Yes	Yes	Yes	-	-	-	-	-	-

B 2 Vulnerability Analysis

Vulnerability may result due to underlying causes such as limited access to resources, disability, gender and age, poverty or due to dynamic pressure like the lack of institutional support, training centres, education, population expansion and environmental degradation. Basically, there are five kinds of vulnerability which affect Sagar viz. physical, social, economic, environmental and institutional.

Physical Vulnerability: Sagar district is prone to various physical vulnerabilities. Flood and drought like situations arise every year in all blocks of Sagar mainly because of the overflowing dams and rivers and excessive rainwater collected in the catchment areas. Till 2005, Rehli was the most flood prone block. But severe flood conditions were observed in Deori as well in 2011.

Environmental/Natural vulnerability: Kesli and Shahgarh are the most vulnerable blocks in Sagar in terms of natural/physical vulnerability. Most cases of forest and village fires are reported in Shahgarh. Sources in the DC Office report that lack of road accessibility and of resources are the major problems plaguing the region. The roads are severely damaged and Sagar with only a single Fire Department which operates in conjunction with the Municipal Corporation is not sufficient to handle such situations of life-threatening fire in villages and forests.

Social Vulnerability: This arises due to the after-effects of a disaster, such as the loss of jobs, school drop-outs, spread of genetic diseases due to major chemical hazards etc. Short-term migration is seen in Sagar and Rehli blocks due to severe aftermath of flood.

Economic Vulnerability:

Pats records reveal that each block is vulnerable to something or the other leading to either loss of lives or of property. Since the district is prone to flood, frost, road/rail accidents, pest attacks etc., the livelihood of people are affected. It requires the recovery measures by the government in terms of financial aid and other allowances to help them restore normalcy. Therefore every block is prone to economic vulnerability.

Institutional vulnerability:

The absence of a concrete authority/body to monitor the preparedness and mitigation, warning systems and response measures leads to disastrous situations leading to vast devastation and loss of life. There is thus a need to create awareness at the district, block and GP level as well regarding the potential benefits of an institutional arrangement in this regard.

Following are the blockwise vulnerabilities of the district:

- Sagar : Roads, minerals, population, poverty, agriculture
- Jasinagar : Roads, hospitals, population, agriculture, religious centres
- Rahatgarh : Bridges, Houses, communication networks, embankments, animals, agriculture, security
- Rehli : Rivers, minerals, animals, population, houses, embankments
- Garhakota : Roads, animals, population
- Deori : Communication channels, roads, animals, population, communication services, embankments, agriculture, livelihood, livestock
- Bina : Roads, Industries, embankments, houses, bridges, minerals, rivers, canals
- Khurai : Roads, tube-wells, rivers, minerals, population, livelihood, soil and water
- Kesli : Communication services, roads
- Malthone : Security, roads, houses, forests, population, livelihood
- Banda: Bridges, roads, villages, rivers, embankments, hospitals, forests, rivers, canals, houses, population, livelihood, livestock, agriculture.

Table B.2 Block wise vulnerability

Name of Block	Physical/Infra structural Vulnerability	Environmental/ Natural vulnerability	Social vulnerability	Economic vulnerability	Institutional vulnerability
Rehli	Major section of the population lives in Kuccha houses which are vulnerable to floods rains.	Flood is the major hazard that plagues Rehli. Kopra, Sunar, Motichur, Katarmadir,	Illiteracy is a major menace that impedes development in this block. Further, ignorance about the preparedness	Villagers lose lives in floods and thus the villagers have to suffer huge economic losses. Agriculture is the major	Lack of advanced technology in the district control rooms and other established head quarters.

		Dehar and Kali Pathar are the rivers that pose threat.	measures to combat disasters and the benefits of the same are not conveyed to the general public as of now.	occupation and flood-conditions deprive them of their livelihood.	More stress on inter department co-ordination should be given and attempts to be made to refine the existing structure of the department.
Banda	Banda is another flood-prone region of the district. Jhagri, Salaiya villages are the most flood-prone Houses are vulnerable because of their poor building materials and kutcha roofs.	Dhasan, Silaut, Bila Papettala Bebus and Kadan are the major rivers that pose threat in the block	In most cases, the recovery funds of the government would suffice to restore normalcy for the villagers. But, many choose to migrate temporarily to new locations.	Disruption of communication and transport cuts off Khidkiya from other blocks and thus there is loss of business and disruption of marketing systems.	Lack of proper planning system and information management are the major institutional shortcomings in the block.
Khurai	The block is vulnerable to drying up of tube wells and bore wells in the scorching heat of May which leads to choking and death due to ejection of poisonous gases of the people who go deep to clean them. Drought conditions develop in the	Forest and village fires are common in the block.	Illiteracy and ignorance about the lack of oxygen in the 60-70 feet deep tube wells drives people to dive into such wells without precautionary measures. Farmers are the most-affected due to severe lack of water during summer.	The block suffers from loss of industrial production and thus severe losses are incurred in business. The lack of agricultural production due to severe heat leads to adverse	There is a lack of a proper DDMC and department-level DM Plan. Further, communication and information management system in the block is poor

	block.			effect on the livelihood of farmers, which causes economic vulnerability.	
Bina	<p>Bina is the industrial hub of the district. The oil refinery in the block is a common site of industrial hazards. Also, the mini chemical industries in the other blocks also pose threat to life.</p> <p>Minor flood conditions too develop.</p>	<p>Drought develops in the block during May.</p> <p>Bina, Betwa, Sajli, Sunar, Dehar, Kopra, Sajri and Guvaroon rivers pose threat due to overflowing in during excessive rain.</p>		<p>People lose their livelihood and economic vulnerability of the population results.</p>	<p>Lack of neoprene and scuba divers, oxygen cylinders and other necessary tool centres in the block that would equip the workers to clean the wells safely. A tool centre with its headquarters at Sagar need to be established that accomplish this task.</p>
Kesli	<p>Flood develops during June-October in the block.</p>	<p>Kopra, Sunar, Tigra, Dhasan, Kadan, Sodhni,, Bina and Bavna rivers are the vulnerable ones that develop flood conditions.</p> <p>Forest fires are common in the block.</p>	<p>Ignorance among the people regarding the necessary preparedness measures is a major menace.</p>	<p>Farmers who lose large areas of land in the flood are economically vulnerable and in most cases migrate to new locations to restore normalcy of life.</p>	<p>Absence of proper DDMC. Although, some system to tackle flood conditions exists on paper, much of it needs to be brought into practice.</p>
Shahgarh	<p>Rail/Road accidents are common.</p>	<p>Forest and village fires are common.</p>	<p>Prevalence of poverty and ignorance about</p>	<p>Blowing away or damage of houses deprive</p>	<p>The hospital outreach is bad. The operational</p>

	Houses that are made of mud and thatched roofs pose threat of falling down.		building safety measures among people are the major issues that plague the block.	people of their shelter. The population therefore suffers from economic vulnerability.	body of PMGSY isn't active in the block. Roads are severely damaged and the administration need to seriously look into their repair and maintenance.
--	---	--	---	--	--

B 3. Capacity Analysis

In this section, the capacity of the district including the availability of PDS shops, petrol pumps, telephone exchange etc. are discussed. The details of inventory and the concerned department and nodal officers of the same are mentioned in table 3.1 in the annexure.

Resources and equipment for flood-control with the Police Force

SI No.	Name of the equipment	Number
1	Rapter Boat	2
2	Engine	1
3	R P Boat Rubber	3
4	Langer	2
5	Life Jacket	29
6	Lifevar Ring	29
7	Dragon Light	11

Resources and equipment for flood-control with the Police Force

SI No.	Name of the equipment	Number
1	Rope	2
2	Life Jacket	1
3	Life Vayas	3
4	Air-filling boat	2
5	Nylon ropes, 25 mm	29

List of petrol pumps in the district

Sl. No	Name of Petrol Pump	Company	Tehsil	License No.
1	Agrawal Automobiles, Bhagwanganj	B.P.C	Sagar	S/1
2	Malaiya Automobiles Bamora	-	Sagar	S/2
3	Panchsheel Traders, Bhagwanganj	I.O.C	Sagar	S/3

4	Delux Automobiles Radha Tiraha	H.P.C	Sagar	S/4
5	Dimple Petroleum Station Road	B.P.C	Sagar	S/5
6	Tulsiram Komalchand, Civil Line	B.P.C	Sagar	S/6
7	Devendrakumar Jain Bhopal Road, Motinagar	-	Sagar	S/8
8	Om Petrol Pump, Makhronia	H.P.C	Sagar	S/9
9	Dulichand Kamalkumar Jain Bhopal Road	H.P.C	Sagar	S/10
10	Satyapal Singh & Co.	B.P.C	Sagar	S/11
11	Satyapal Singh Chandrapal Singh, Makhronia	B.P.C	Sagar	S/12
12	Veer Singh Kushwaha, Makhronia	-	Sagar	S/13
13	Manakchand, Oswal Rahatgarh	-	Sagar	S/14
14	B.M & Co. Baheriya Tiraha	H.P.C	Sagar	S/15
15	Jyotishi Automobiles, Nayi Galla, Mandi	B.P.C	Sagar	S/20
16	Lakshmi Narayan Brothers	I.O.C	Sagar	S/21
17	Lakshmi Narayan Brothers, Garhpehra	-	Sagar	S/22
18	Royal Highway Service, Rangin Road	H.P.C	Sagar	S/23
19	Akash Petroleum	B.P.C	Sagar	S/26
20	Tomar Filling Station	I.O.C	Sagar	S/27
21	Bajaj Filling Station, Bilera	I.O.C	Sagar	S/28
22	Saransh Petroleum	-	Sagar	S/29
23	Bhavani Filling Centre	Reliance Co.	Sagar	S/30
24	Gyansarovar Diesel Pump	-	Sagar	S/31
25	Chichairiya Kisan Seva Kendra	I.O.C	Sagar	S/32
26	Sarvashrehsth Petroleum Services	-	Sagar	S/33
27	Sagar Soya Product Ltd.	-	Sagar	S/1
28	Major Dhannalal Gulabchand Sethi	I.O.C	Khurai	K/1
29	Singhai Padamchand Nemchand	B.P.C	Khurai	K/2
30	Chaudhary Brothers	B.P.C	Bina	K/3
31	Lakshmikant Co.	I.O.C	Bina	K/6
32	Mangal Auto Service, Khimlasa	I.O.C	Khurai	K/7
33	Ankur Auto Service, Malthone	B.P.C	Khurai	K/8
34	New Bina Auto Service	H.P.C	Bina	K/9
35	Sanjay Filling Centre, Khurai	I.O.C	Khurai	K/12
36	Dr. Sriram Sahni & Sons	I.O.C	Bina	K/13
37	K K Sales	Isaar oil	Khurai	K/14
38	Seth Top Gear Fuel Centre	Reliance Co.	Khurai	K/15
39	Saeen Petrol Pump	H.P.C	Khurai	K/16
40	Bina Refinery Service Station	H.P.C	Bina	K/17
41	R K Singhai, K/18	S.R Co.	Bina	K/18
42	Ankit Auto Service, Khimlasa, K/19	B.P.C	Khurai	K/19
43	Koko Petrol Pump	-	Bina	K/20
44	Major Deori Auto Service	I.O.C	Deori	R/1
45	Major Seth Hazarilal Giridharilal Jain	H.P.C	Garhakota	R/2

46	Hazari Automobiles, Rehli-Sagar Road	H.P.C	Rehli	R/3
47	Mahesh Diesels, Rajvas	Reliance Co.	Rehli	R/4
48	Shriram Petroleum	H.P.C	Garhakota	R/5
49	Major. Pyarelal Bhagchand, Shahgarh	I.O.C	Banda	B/1
50	Major. Mahendra Kumar, Shyam Kumar Saraaf	I.O.C	Banda	B/3
51	Major. Bilani Petroleum Station	S.R Co.	Banda	B/4
52	Masors Sanghars Petroleum	B.P.C	-	
53	Vedant Petroleum Jhila	-	Sagar	S/34
54	Masors Sigdh Baba Petroleum Pump	B.P.C	Banda	B/3
55	Harsiddhsi Maa Kisan Seva Kendra, Barauda	-	Sagar	S/35
56	Masors Kusum Petroleum Kisan Seva Kendra	-	Sagar	S/36
57	Masors Rajkamal Jain, Rishib Kisan Seva Kendra, Bhainsa	-	Sagar	S/37
58	Masors Sohan Singh Yadav, Contractor Chimadhana, Deori Diesel Sangrah 25000 L	-	Deori	D/2
9	Masors Colenel Lama Autohouse, Gaurkshamar	H.P.C	Deori	D/1
60	Masors Annapoorna Kisan Seva Kendra, Maharajpur	I.O.C	Deori	D/3
61	Masors Naya Kisan Seva Kendra, Rajauwa	-	Deori	D/4
62	Smt. Bandana Rajput, w/o Sudhir Rajput, Retail Dealer Selling	-	Deori	D/5
63	Salbant License Masors, Sagar, Soya Products Ltd, Village Bansiya	-	Sagar	S/1
64	Masors Swathy Kisan Seva Kendra Gowhar Post, Mandi Bamora	-	Bina	K/20
65	Maors Diwan Kisan Seva Kendra, Village Dhanowra	-	Bina	K/21
66	Masors Kasturi Petrol Pump, Village Bandri Karauti	-	Khurai	K/22

Source: Department of Food Supplies, 2012

Tehsil wise number of PDS shops in the district

Tehsil	No. of PDS Shops
Sagar	181
Rahatgarh	135
Banda	54
Shahgarh	66
Garhakota	61
Deori	58
Kesli	74
Khurai	85
Malthone	59

Total	773
--------------	------------

Source: Department of Food Supplies

List of Telephone Exchanges of Sagar SSA

Sl. No	Name of SDCA	Name of Telephone Exchange
1	Bina	Agasod
2	Rehli	Anantpura
3	Khurai	Atta
4	Khurai	Bahrol
5	Rehli	Baleh
6	Sagar	Banmhor Regaun
7	Khurai	Bandri
8	Banda	Baraitha
9	Banda	Baraj
10	Sagar	Bararu
11	Khurai	Bardha
12	Khurai	Barodia Kalan
13	Banda	Bhadrana
14	Rahatgarh	Bhainsa
15	Bina	BORL Bina
16	Bina	Bhangarh
17	Rahatgarh	Bilehra
18	Bina	Bina Main
19	Khurai	Khurai
20	Bina	Bina-RSU
21	Sagar	Chanatoria
22	Rehli	Chanaua Buzurg
23	Rehli	Chandpur
24	Rehli	Chhirari
25	Rehli	Chhulla
26	Sagar	Chitora
27	Banda	Dalpatpur
28	Sagar	Dhana
29	Sagar	Dhana (Army)
30	Deori	Gaurkhamar
31	Banda	Hirapur
32	Rahatgarh	Hurra
33	Rahatgarh	Jaisinagar
34	Rahatgarh	Jaruakheda
35	Rahatgarh	Jhila
36	Banda	Kanwan
37	Sagar	Karrapur

38	Deori	Kesli
39	Khurai	Khimlasa
40	Deori	Maharajpur
41	Khurai	Malthone
42	Rahatgarh	Naryoli
43	Sagar	Parsoria
44	Sagar	Patharia Jat
45	Rehli	Patana Buzurg
46	Khurai	Rajwans
47	Deori	Rasena
48	Rehli	Rehli
49	Rehli	Garhakota
50	Sagar	Main Exch-Sagar
51	Sagar	Sagar- Makhronia
52	Sagar	Sagar- Tili
53	Banda	Banda
54	Sagar	Sagar- Bhagwanganj
55	Deori	Deorikala
56	Sagar	Sagar-Itwara
57	Sagar	Sagar- Motinagar
58	Sagar	Sagar- Namakmandi
59	Rahatgarh	Rahatgarh
60	Banda	Shahgarh
61	Deori	Sahajpur
62	Sagar	Sanodha
63	Sagar	Shahpur
64	Rahatgarh	Sihora
65	Sagar	Surkhi
66	Deori	Tada
67	Khurai	Ujnet
68	Sagar	D D Nagar- Sagar
69	Sagar	Gournagar- Sagar
70	Sagar	Subhasnagar- Sagar
71	Sagar	Nehanagar- Sagar
72	Sagar	Sindhi camp- Sagar
73	Sagar	Sneh nagar- Sagar
74	Sagar	Ahmad nagar- Sagar
75	Sagar	MPEB colony- Sagar
76	Sagar	Avtar Nagar- Sagar

Source: BSNL Office, 2012

B 4. Risks Assessment

Table B.4.1 Potential impact of applicable hazards and existing vulnerabilities

Type of hazard	Vulnerable areas *	Vulnerability	Potential Impact
Flood	Deori, Banda, Rehli	A population of about 12686 is at risk in the Rehli block due to flood. The figure is 5022 in Garakota, 2331 in Sagar, 1197 in Kesli and 667 in Banda	Loss of lives; Loss of crop, livestock; Damage to infrastructure
Drought	All Blocks	Population, Livestock, Potable Water	Loss of crop, livestock
Forest Fire	All Blocks	Population living near forest areas, Livestock	Loss of lives; Loss of Crop, Trees
Stampede	All Blocks	Population	Loss of lives
Hail storm / Palla	All Blocks	Population , livestock	Loss of crops

Source: Department of Land Records, 2012

B 4.2 Risk profiling of the district

The past records of disasters in the district of Sagar reveal that flood is the major natural disaster besides the industrial accidents, road accidents and pest attack on crops. The exact figures of population that are affected in these blocks are unavailable.

Based on the block-wise vulnerabilities, potential risk and existing capacities, the following conclusions and recommendations are drawn:

- i) Rehli, is the most flood-prone region in the district and therefore the active functioning of district/block/GP level DM Committee in Rehli is a necessity.
- ii) It is seen that Shahgarh and Kesli are more prone to fire accidents as compared to the rest of the block. It is therefore recommended that a proper fire station be installed in the blocks with sufficient number of trained fire personnel, equipment and vehicles to tackle an emergency. Accessibility to these regions by road is another issue, which need seriously looking into. PMGSY therefore needs to operate efficiently for building safe roads in these blocks. The bus services to these routes further need to be enhanced.

- iii) Khurai, is found to be vulnerable to dry tube wells which eject poisonous gases in the scorching summer. Therefore tool stations with the amenity of neoprene suits and scuba divers need to be installed for avoiding accidents.

C . DISTRICT DISASTER MANAGEMENT PLAN

C 1 District Action Plans

C1.1 Mitigation Plan

The mitigation measures primarily focus on reducing or minimizing the impact of a disaster or a potential future hazard.

The planning, coordination, implementation and monitoring of Sagar district mitigation strategy can be ensured by adopting the following institutional arrangement.

The DDMA in Sagar will be assisted by the district technical committees to formulate its mitigation activities. Further, all the concerned line departments shall develop and implement their respective mitigation plans under the guidance of their nodal officers as appointed by the District Collector.

Disaster Management Committee shall be in operation Gram Panchayat level as well which will prepare and maintain their respective plans and submit the final plan to the Blocks. The Blocks in turn should prepare their own Block Disaster Management Plan which will take its final shape after being submitted to the State Disaster Management Committee.

For an effective mitigation system in place, the stakeholders and the specific tasks they can undertake to reduce the impact of disaster need to be identified. For e.g. the following actors are important to disaster mitigation⁵:

- Community Organizations
- Non-government organizations
- Government

The mitigation strategy suggested for the district will comprise of the following measures:

i) Risk Assessment

⁵ Disaster hazards and vulnerability, Sensitization Programme on Disaster Management, DMI Bhopal

Precise evaluation of the vulnerable areas, the potential damage to life and property pertaining to each disaster are the key aspects in risk assessment. The Block and GP Committees can periodically conduct meetings to review local vulnerabilities. The Department of Environment and Scientific technologies shall take the lead in this aspect.

ii) Development and maintenance of resources

Necessary resources to combat hazard situations should be maintained and a tool centre in each tehsil needs to be established to keep a record of their availability and periodic updation.

iii) Research and Technology

Excellent research institutions should be contacted and interacted with to evolve mitigation strategies. Effective research and technology enables the development of smarter, cost-effective and more efficient resources and equipment. . The concerned departments like PWD, Executive Engineers of Zilla Panchayat, Relief and Rescue Team members of Homeguard and Police Department, etc. can be in constant contact with experts in research centres for improving the building standards and ensuring safeguards. Periodic inspections by such experts also need to be done.

iv) Training and Capacity Building

Imparting training to state level and district level officials of all concerned departments, to private sector organizations as well as at the community level is important in mitigation strategy.

v) Awareness Campaigns

Environment, Scientific and Technology Department, NGOs, Education Department, local youth organizations etc. are the key agencies for community level training and awareness campaigns.

vi) Land Use and Construction Work:

The Department of Town Planning is responsible for choosing locations for infrastructure and other development activities keeping in mind the vulnerability and hazard-zone areas. Adhering to building standards in all construction work is also a must to combat building/dam collapse.

C1.1.1 Scope of Integrating Risk Reduction in Development Schemes

In the process of curbing the ill-effects of a disaster, the attempt would be to shift from relief-centric response to pro-active prevention, mitigation and preparedness approach is necessary. For this, precise inoculation of disaster management measures into development schemes can play a significant role.

Under the existing national development programmes, there is scope of integrating risk reduction elements with various schemes, and it will address and align the pertinent issues of construction (structural & non-structural elements), infrastructure, repair & maintenance,

transport, health and education, sanitation, research & technology transfer, housing and land use planning.

Pradhan Mantri Gram Sadak Yojna (PMGSY)

Under the PMGSY (Pradhan Mantri Gram Sadak Yojna), proper communication should be established in respective blocks where transportation become vulnerable during rainy seasons. In Sagar, Shahargarh is a block where the availability of pucca roads is poor. During forest and village fires, the accessibility of the region is therefore poor. PMGSY wing therefore needs to be actively incorporated in such blocks. Roads should be constructed under this scheme in rural area for the proper communication from village to block..

Indira Awaas Yojana (IAY):

Integration with IAY basically covers the pertinent issue of safe housing and shelters. Housing is one of the basic requirements for human survival. Under Indira Awaas yojana (IAY) all the houses should be advised and instructed to construct earthquake resistant. Special instruction should be provided by district administration to block level and block will guide and instruct to Gram Panchayat for the construction of houses under Indira Awaas yojana (IAY) for earthquake resistant house construction. The training should be provided at gram Panchayat level for construction of small earthquake resistant houses under this scheme. This vulnerability due earthquake can be reduced.

MGNREGA:

In construction work the civil engineers have to follow Bureau of Indian Standards (BIS) to construct resistant structures. Government officers, staff are also trained under disaster management, so that their skill will be helpful at the time of disaster. MGNREGA can serve as a significant measure towards employment generation to those who have lost their livelihoods due to floods.

Jawaharlal Nehru National Urban Renewal Mission (JNNURM);

Developmental activities must take into consideration disaster-resistant building measures. Ensure that all the installed transformers, power lines are in healthy condition, because this leads to vulnerable situation at the time of flood, Installation of new power lines, latest transformers should be included in developmental activities. The Municipal Corporation should establish proper drainage system. There must be new drains in the areas. Reservoirs can be made by Municipal Corporation in the areas. Retrofitting of schools and colleges is an important measure. New buildings must qualify standard codes and also ensure that it has less environmental impact, Eco friendly buildings (Green buildings) must be encouraged.

Sarva Shiksha Abhiyan (SSA):

The role which the education department can play to sensitize people about disaster management is important. Sarva Shiksha Abhiyan is an important body that can incorporate Disaster Management into school syllabi and bring about a significant difference at the grassroots level. Also awareness should be spread at Gram Panchayat level about earthquake-resistant house by education department.

National Rural Health Mission (NRHM)

Under NRHM special attention should be given to the diseases like Falaria, Dengu, Chickengunia and jaundice in the district so that epidemics can be avoided. Under this scheme proper vaccination should be carried out by the district health administration through CHC and PHC. Apart from it the Special camps should be arranged at block level or Gram Panchayat level about awareness of diseases and how to be safe, especially in case of any emergency, epidemics etc. Doctors should be trained to tackle the epidemic in that region. Under this scheme there should be doctors and stock of medicines related to the epidemics by which this people of these areas are get affected. The concept of ANM is also an integral part of the NRHM, hence this aspect should also be addressed properly.

The following measures are the department-wise recommendations for disaster management:

Zilla Panchayat

Development-Disaster Management Coordination, Clear Governance Model

- The precise identification of the vulnerability zones to which a particular block/tehsil belongs is first towards management of disasters. Sincere officers to ensure proper implementation of the set-standards of the existing regulations and acts.
- Periodic expert inspection be conducted in public service centres including theatres, libraries, educational institutions (schools/colleges/training centres) regarding the provision of disaster-resistant safety standards.
- The government developmental plans can be implemented with built-in disaster-resistant measures. A nodal officer at the district, block, Zilla panchayat and gram panchayat level can be appointed. He/she shall require to present periodic reviews the safety standards report to the District Collector.

Lokswar and public in the limelight

The PWD needs to assess the records of the buildings in place, their expected life and safeguards to be implemented. A public query system at the Collector Office as well as an online forum by name *Civilian Box* or *LokSwar* can be in place wherein people can post their worries or plausible measures with regard to potential hazards in the form of building/dam/road collapse. This would be an effective measure towards retrofitting of potentially weak and unsafe structures. Further, besides details of risky buildings and dams, the public may also post in their complaints regarding the lack of safety guidelines which

may be as simple as the non-availability of fire extinguishers or emergency exits in theatres to as sophisticated as the foundational faults and cracks in food godowns. Further, the petitioner needs to specify his name, address and the estimated risk which has prompted him/her to post a complaint.

In addition to identification of risk-prone structures, this measure might blow the clarion for the joining of hands of the public and district administration in the task of disaster management. A Special Public Redressal Committee with 2-3 nodal officers in each block/tehsil/development block can operate in this line. The monthly report of the Committee can be inspected by the Collector and other members of the Revenue

Education Department: Measures towards Disaster Management

- Every renovation results from the changes made or evolved at the grassroot level. So, the awareness initiatives about disaster management can be begun by preparing school syllabi about disaster(s) (with special focus on flood, drought and hailstorm to which the district of Sagar is prone to) Further, fortnightly/monthly camps or training sessions can be organized at the school level for imparting the sense of preparedness and mitigation in them.
- The NCC/NSS wings of all the educational institutions be made more active, with special trainers (specific to each disaster) recruited to conduct training sessions and instil a sense of community service among the volunteers. Further, there needs to be proper communication among the agencies/volunteers/individuals involved in these camps.
- At the school level, a *Task Force* can be formed keeping in view each disaster to which the district is prone to. Each force can take up the task of spreading awareness regarding potential disasters by means of posters, cartoons, articles, paintings etc.
- Night classes be organized at the village level imparting preparedness measures among the local inmates. Further, flood-control and prevention tools and equipment can be developed with local resources. The formation and active coordination of the Gram Panchayat Level Disaster Management Committee can take care of this aspect. 3-4 instructors can be appointed for the same.
- Mock drills be organized
- Research Institutions can play a key role in proposing mitigation measures especially in cases of building, dam, road safety which would curb the occurrence of fatal disasters to a large extent

i) Home Department:

Disaster Management Training/Seminar/Tutorials need to be conducted for the officials of Homeguard and Police Department.

ii) Revenue Department:

Special funds can be allotted at the district, tehsil, village or GP level to impart special training and to purchase equipment for search and rescue. Further, the focus on the following aspects need to be given with emphasis upon local community who are the first responders.

- Separate funds need to be apportioned for training and capacity building at all levels, district, block, village and gram panchayat.
- Special allowances/grants/bonus and incentive mechanism need to be extended to the sainik and jawan of the District Homeguard indulged in search and rescue operations.

As discussed in the section, the youth organizations and SHGs at the Village Level need adequate funds for the active operation of training and mitigation measures. Funds need to be extended for the Community Based disaster Management Initiatives to each of the village/GP. A nodal officer at the Tehsil Level can be appointed for funding of these tasks.

iii) Tehsil:

Community Sensitization Programmes can be organized at the village level focusing on mitigation and preparedness. Sensitization Programmes can inform the locales regarding the avenues of reconstruction and rehabilitation and restoration of livelihood and might help to change such mind-sets.

C1.1.2 Training and Capacity Building

Training and capacity building of government officials need to be carried out. This task can be done by the government in partnership with NGOs and private agencies. Training belongs to the Non-Disaster Stage i.e. under the mitigation measures. Special Training Sessions/Seminars/Classes be conducted for the personnel of bodies responsible for Emergency Response and Relief such as District Homeguard and Police Department. This could be done half-yearly, one in May, prior to the development of flood conditions, and the other in November before the cold waves/frost/hailstorm develops.

C1.1.3 Community Initiatives

Disaster Management should not be approached in isolation when the stakeholders constitute a range of actors such as farmers, women, children, teachers, religious organization, youth etc. A holistic line-of-attack then needs to be embraced with each of these actors in mind and proper identification of the role they can play in disaster management at a local level. Communities as already stated, are always the first responders when a disaster strikes. Therefore, the awakening the local masses towards safer mitigation and prevention measures is a must. Further these are further expected to improve the self-dependency of the

communities and respond effectively reducing the risk associated with disasters. The following initiatives are recommended for this:

- Youth organization at the village/gram Panchayat can be formed which focus on development of flood-mitigation tools made out of indigenous materials such as rubber-tubes, bamboo sticks as safe water glides, ropes, jacks, lifting equipment made with local engineering skills. Aid from Village/GP administration, NGOs or SHGs can be taken in this regard. Although Sagar doesn't have the history of having caused any loss life due to floods, these initiatives can help in quick rescue operations by the communities themselves.
- Microfinance Institutions such as SHGs can be organized for the unique task of Disaster Management at the Village Level. The Task Force can constitute 12-15 volunteers with a Coordination Committee comprising of the Sarpanch/Village Head and a youth leader who meet quarterly to discuss the action-plan prior to the development of flood/drought conditions. 3-4 trainers from Police/Homeguard can be allotted each village for conducting the training sessions.
- It is often seen that the existence of the Disaster Management Committees are a proposed plan, but their active implementation hasn't been realized as of now. The Tehsildars need to closely monitor the action plans of such committees and coordinate the desired funding provisions for the same.

C1.1.4 Risk Management Funding

The short & long term funding provisions for proposed mitigation activities, under the overall objective of risk management at district level is taken care of by the revenue department.

Short term provisions are expected to cover the immediate loss, incurred due to disasters. Whereas long term provisions include the setup of fire stations, watershed management, planting trees along the river etc.

C 1.2 Preparedness Plan

Disaster preparedness planning is defines as *Measures which enable governments, organizations, communities and individuals to respond rapidly and effectively to disaster situations. Preparedness measures include the formulation of viable disaster plans, the maintenance of resources and the training of personnel.*⁶

⁶Carter, W. N. 1992, "Disaster Management: A Disaster manager's Handbook". pp 226

The focus here is on the devising of plans before a situation of emergency arises. The actors involved in this phase are the trained personnel and volunteers at all cadres, government, NGOs, village youth. The severe impact of most disasters can be reduced by proper warning and preparedness measures in place. In addition to personnel and equipment, it is ensured if proper communication system is in place since, there might cause damage to the telecommunication networks in the events of fire or flood. The preparedness activities need to be institutionalized into a systematic and integrated planning process.

Need?

Preparedness planning reduces the cost of relief and recovery measures and lessens the adverse impact on life and property of an impending disaster. It further build community solidarity, strengthens local institutions and the development of leadership at all levels. They need to be modified tested and updated on a regular basis.

C.1.2.1 Preparedness before response:

The preparedness plans that every department can undertake to mitigate the effects of a disaster are as discussed below:

Home Department:

The Police and the Homeguard constitute the Home Department. Considering the specific tasks that come under their purview, the following preparedness measures are recommended:

i) Control Rooms:

As seen already, in the district of Sagar, the Disaster management Control Rooms are established in the month of June prior to excessive rains and flood. However, better equipment need to be installed for effective management. The following gadgets are suggested. Besides this, Police and Homeguard establish their Control Rooms as well before flood develops. In Sagar, Disaster Emergency Control Room in the Police Department is in place with the following members

It needs to be ensured that the staff are regular and keep daily updates of the weather conditions.

ii) Effective Communication:

The team of Homeguard and Civil Defence which indulge in search and rescue should be equipped with satellite phones and HAM radios and wireless sets need to be installed in all control rooms, taluks and DM teams at the village level. Alerts among the fire brigades and concerned departments should be circulated and inhabitants around a radius

of 500m from the river banks that pose threat should be warned of the impending flood conditions and made aware of the safe evacuation procedures.

iii) Training and resource management

Proper training should be imparted to the swimmers and rescue personnel. Also the equipment and other resources such as lifebuoy, life-jackets, ropes, boats, cranes, bulldozers etc. should be inspected well before the disaster strikes. Immediate replacement should be done in case of poor, damaged equipment.

Health Department:

i) Communication:

Necessary steps need to be taken to spread awareness among the masses about the emergency number, 108 for ambulance. Also there is a need for a proper monitoring system to be in place to avoid hoax calls and pranks. The control room team should be map the precise locations of disaster-hit areas and disseminate information to the *Combat Team* accordingly.

ii) Appointment of medical response team:

The emergency medical response team which is known by the name of Combat Team in the district of Sagar should be appointed and alerted. Precise allocation of functions to each of the members, checking the presence of sufficient number of first aid materials, beds, ambulances and paramedical staff such as nurses, A.N.M, L.H.V, compounder, dresser, etc. should be ensured well in advance.

iii) Vehicles:

As would be discussed in the SOPs in the subsequent sections, it should be ensured that ambulance and other vehicles that carry out the medical tasks should have sufficient fuel in place and also fitted with first aid equipment including the provision of oxygen cylinders to tackle situations of emergency.

Revenue Department:

- i) Appoint a nodal officer in the DEOC
- ii) Establish the DEOC with all equipment maintained in working condition and inventories updated.
- iii) Provide necessary training to the personnel managing the DEOC.
- iv) Establish disaster management funding mechanisms for adequate resources to carry out preparedness and mitigation activities.
- v) Ensure that a disaster management plan is prepared at all levels; gram panchayat, urban bodies and blocks.

- vi) Design and implement a coordination mechanism and to seek aid from neighbouring districts and synchronize the same with the DDMP.

Municipal Board:

- i) In Sagar, the fire department is attached with the Municipal Corporation. Special emergency response team should be appointed with the tasks being presided over by the Fire Officer.

Contact person: A J Rajput
Fire Officer, Municipal Corporation Sagar-470002
Email: arajputfo@gmail.com

- ii) Resources for the provision of sanitation services in the evacuation sites should be in place well in advance.

C 1.2.2 Pre-Disaster Warning, Alerts

The followings steps for the dissemination of warning systems are suggested with flood being the prime focus.

- i) The warning systems and equipment should be maintained and kept.
- ii) Alternative systems should be in place to take lead in case of any technical failure.
- iii) The DMC will be asked to conduct a review of the preparedness level of the districts likely to be affected by the disaster, by calling a meeting of District DMCs (Disaster Management Committees).
- iv) Prepare a team for deployment to assess damage and need.
- v) Inform respective departments to activate respective SOPs
- vi) Media, national broadcasts and radio can be effective in sending the alerts and Special Forces need to be sent to remote rural areas.
- vii) Awareness regarding the benefits of preparedness and shifting to evacuation sites should be spread.

Table C 1.2.2

Hazards	Prediction agencies	Mode of communication, info. dissemination at district level **
Ex:		
Flood	CWC	The setting up of the Control room at the district level is the concrete source of information dissemination in the district. This is established mainly in the first week of June before excessive rain and flood conditions
Drought	IMD	
Industrial	SPCB, Deptt. of Industry	

		develop.
--	--	-----------------

C 1.2.3 Evacuation preparedness

With the control rooms set up at the district level and in all the key departments, the risk assessment and vulnerability mapping are carried out and the villages that are hazard-prone are identified. Further, when the disaster strikes, the focus mainly on flood in Sagar, the Homeguard and Civil Defence sainik and jawan spring into action under the supervision of the District Commandant, Homeguard and begin rescue operations, and safely evacuate the affected population to temporary shelters or evacuation sites that are identified well in advance in the nearest location. In cases, where the people deny leaving their homes and ancestral lands, the task is carried out forcefully. Special care need to be extended to the Special Vulnerable Groups, women, children, elderly and differently abled.

C 1.2.4 Organizing mock-drills

Mock-drills need to be organized at the village and block-level with the focus on community sensitization as they constitute the first responders. It is an integral part of the disaster preparedness drill to keep the community alert, activate DM Teams across the district and review and modification of DM Plan.

C 1.3 Response Plan

Typical measures of preparedness which come under response include⁷:

- Risk assessment
- Proper warning systems
- Education and public awareness campaigns
- Maintenance of a resource base in anticipation of needs
- Emergency disaster services
- Training and mock drills
- Media publicity
- Observance of a disaster management day to gain national importance

These elements of planning should enable all key actors; NGOs, governments, communities and organizations.

C 1.3.1 Incident Command System (ICS)

Incident Command System is *a set of personnel, policies, procedures, facilities and equipment integrated into a common organizational structure designed to improve emergency*

⁷Sensitization Programme on Disaster Management 2011. DMI, Bhopal. pp 23

response operations of all types and complexities.⁸The five operational parts of the Incident Command System are

- Command
- Planning Section
- Operations Section
- Logistics Section
- Finance/Administrative Section

Operations Section: It manages the tactical operations such as requesting resources to implement the action plan and also maintains close communication with the ICO. *The Operations Chief* interacts with the Branch, Division/ Group to develop the portions of the IAP and supervises the execution of the IAP for operations.

Planning Section: This component of ICS collects information regarding the incident, and advises the Incident Commander and the Operations Chief in the preparation of the Incident Action Plan, suggests alternative strategies and determines if there is any need for specialized resources. It assists the Incident Commander in the execution of the IAP. The Planning Section Chief establishes special information collection activities such as that regarding weather, environmental and toxic substances and reassigns the event personnel as is appropriate.

Logistics Section: It provides support need for the event command infrastructure and requests additional resources if needed and extends all logical input to the Incident Commander in the preparation of the IAP. The Logistics Section Chief appoints Brief Branch Directors and Unit Leaders as needed. Also, the power of activation and deactivation of a unit vests in the hands of the Logistics Section Chief.

Finance/Administration Section: It takes care of the financial aspects of the command infrastructure and provides cost-analysis information as requested. The Finance Section Chief coordinates the task of maintaining daily contact with agency administrative headquarters on Financial/Administration matters. Further, he keeps records of the agencies (private individuals and NGOs) that can provide financial aid in case of emergency provides financial input to demobilisation planning.

Incident Control Officer:

The reports of Sagar District Emergency Response Force Chief, Homeguard District Commandant, an organized system of Incident Command is in place in the district. In the subsequent sections, the procedures involved in the Command System, the functions of the Incident Commander, and the agencies that involved in the task are described at length.

⁸Disaster Management and CERT

The damage at a localised place in a limited area termed as an incident. The Civil Defence personnel rush to the damage site, mobilize the local people and utilize the local resources. In addition to Civil Defence, police, fire services and personnel of Essential Services may also handle the situation. However, in case of widespread damage, a more systematic coordination is needed, which is done by deputing *Incident Control Officer*.

The Incident Control Officer carries out the following functions:

- i) Ensure that all pre-event risk-analyses and checklists are completed and available to the event personnel.
- ii) Set up a post soon after his arrival at the incident spot.
- iii) Develop a schedule for the operations.
- iv) Approve requests for additional resources and staff well in advance.
- v) Work out an action plan with the event personnel and coordinate its execution.
- vi) Coordinate and control the operations of the Civil Defence.
- vii) Ensure that the operations are carried out systematically and as per a well-chalked out programme.
- viii) Ensure the close coordination of the fire, police and Homeguard personnel with that of the Civil Defence.
- ix) Give updates to the Control/Sub-control Centre regarding the progress of work at the incident site from time to time.

Who would serve as the Incident Commander?

No person/official is permanently earmarked to serve as Incident Commander. Persons from higher ranks such as Additional District Magistrate, Joint Collector, Superintendent of Police or District Commandant, Homeguard, who arrive first at the incident site and who have no other operational staff functioning during an air-raid would be selected as the ICO. He should be well aware of the topography of the place and the operational system of the Civil Defence. Ideally, there should be one Incident Command Officer per 25000 people. Wireless sets are issued to the ICOs to send updates to the Sub-Control/Control Centres.

Public Information Officer (PIO): The PIO releases public information regarding safety matters of the event to the media, to the event personnel and other agencies and organizations. He must understand the limits of information transfer to the media on consultation with the ICO provide material for media briefings and address the media personnel and provide precise details of the site

Liaison Officer: The need for a liaison officer arises only when the events require the aid and assistance of a large number of agencies i.e. when it is multi-jurisdictional. He must provide the supporting agencies the minutest details of the incidental status and serve as a contact point for agency representatives.

Setting up of the Post and appointment of Wardens

Soon after the arrival of the ICO at the incident site, the post is set up. The post is established at a point considering the ease of access of the incoming services and should be positioned at the centre of the incident site as far as possible. It must be at adequate distance from the damage and casualty loading point. The Incident Command Officer appoints Wardens to the damaged places who keep track of the number of casualties and collapsed buildings. The Wardens help the casualties rescued locally until the CD personnel arrive and acquaint the Incident Officer of the progress. The operations at the place of damage are carried out until it is realized that the continuance of the same will be dangerous to the people who are working or until all the casualties are removed, the missing persons accounted for and that no one is trapped is established beyond doubt. The

Damage Enquiry Point and Final Report

The relatives/friends/acquaintances of the victims are asked about the lost, injured, dead or trapped relatives. The ICO appoints Wardens to deal with such enquiries. The Wardens provide an effective liaison between the victims, the CD parties and the ICO. Further, they quickly transmit messages to the Police to control the traffic and marshal vehicles. They make arrangements for dealing with the abandoned and homeless by means of Rest Centres. Provisions for the safe disposal of the dead away from public gaze are coordinated by them and necessary relief measures should be ensured to the people rescued. The ICO further maintains the list of money, jewellery and other valuables recovered from the damaged sites and hands it over to the Police/Officer-in-Charge/Custodian. The ICP facility can be a room in a building or a tent, a vehicle or even an open area. The composition of the ICP and personnel and staff may depend upon Incident Command Officer, and is mostly established with the Home Department and Police.

District Level Incident Control System

A Nerve Centre or Command Hub can be set up with the District Collector taking the lead in the functioning, task-coordination and overall logistics. Sources in DEOC of Sagar report that no Incident Command Team is established well in advance and that the officials who reach the incident site at first coordinate the operations and function as the Incident Command Officer. The Command Hub in such cases can be immediately informed about the ICO and the action plan that he has created to tackle the situation. As per the guidelines of the ICO, necessary personnel and resources are supplied by the concerned agencies. The operational aspect is the prime focus on the incident site, which must then be followed by planning, logistics and finance/administration.

C 1.3.2 Crisis Management direction & coordination

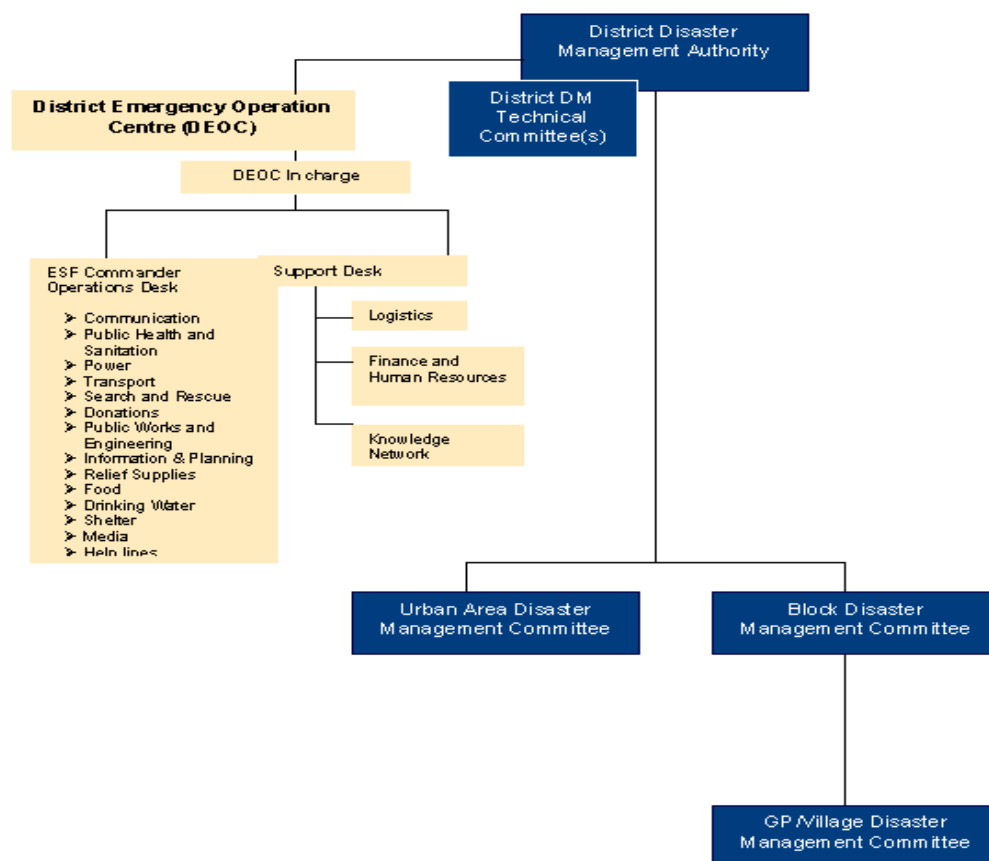
The management of crisis situations is discussed at length in the ICS section. The Incident Command Officer convenes this task with the appoint of sufficient liaison officers/wardens.

C 1.3.3 Disaster Emergency Response Force

The task of Emergency Response vests in the hands of Homeguard, District Commandant who draws a contingency plan and alerts the workforces engaged with search and rescue and relief operations. In Sagar, the task is carried out with close coordination of Civil defence and Police personnel as well. The DEOC can function as per the following outline.

- i) The DEOC Chief can instruct the Control Room to spring into action during a disaster.
- ii) He supersedes the task forces and ensures that the resources are put to use in the most efficient manner.
- iii) The DEOC assesses the situation and if needed takes necessary steps to declare emergency at the district level.
- iv) Effective communication with the Civil Defence, Police and all other concerned departments and NGOs are maintained and the regular attendance of the Control Room staff is ensured.
- v) The DEOC Chief will prioritize the tasks and act accordingly. This is a key point, since without a proper priority map carved out soon after the disaster strikes, the damage will be huge.

The first priority is given to the people affected, people in danger, cattle and animals, responders and other emergency workers. Next, the property at risk, money and other valuables and, efficient resource management is considered. While the second priority stabilizes the situation, the first provides immediate support to the victims.



The DEOC Chief should perform the following specific functions:

- i) Develop a strategy to ensure safety of life and property.
- ii) Alert the personnel and give them clear instructions about the Contingency plan and its implementation.
- iii) Manage and maintain necessary resources and make arrangements for alternative sources for their availability.
- iv) The DEOC Chief executes tactical directions to achieve the objectives of the set plan.
- v) Monitor safety in the damage-site and report the situation to the Control Room or concerned Headquarters frequently.
- vi) Maintain stabilization.

C 1.3.4 Rapid damage assessment & reporting

Rapid Damage Assessment Team to be set up immediately after disaster. It should include Z.P. members, agricultural officer to assess the crop damage, executive engineer of PWD to assess the damaged houses, S.P to maintain the law and order situation, NGOs and volunteer organizations, Tehsildar, etc.

This team may immediately assess the damage undergone due to disaster and report it to the concerned department to get the immediate relief material from the government and also the

6	ANY OTHER VITAL INFORMATION	
7	SPECIFY IMMEDIATE NEEDS: (With quantity)	
	Food	
	First aid	
	Machinery	
8	Possible Secondary Affects:	
9	NAME THE CONTACT PERSON:	
10	AGENCY/ADDRESS:	
	TELEPHONE NUMBER	
DATE:		SIGNATURE:
FOR OFFICE PURPOSE:		REPORT NO.:
ACTION TAKEN:		

C 1.3.6 Medical Response

There is a need to set an Emergency/First Aid Medical response Team to help the affected population. The preventive medication may have to be taken to prevent the outbreak of diseases.

Further, at the district level, dedicated medical teams will be activated at the time of emergency, which will consist of doctors, nurses, pathologists, child specialists etc. The following table summarizes the list of Medical Response/ Combat Team members at the District and Block level which are formed to check the outbreak of fatal epidemic after severe flood conditions.

Table C.1.3.6 Combat Team Members and their Contact Numbers

Sl. No	Development Block	Name of Doctor/medical personnel	Designation	Contact No.	
1	Sagar District	Dr. Amitabh Jain	District level Combat Team, District Hospital Sagar	Medical Specialist, District Hospital, Sagar	9425095692
		Dr. R S Jayanth		Child Specialist, District Hospital, Sagar	
		Shri. H S Srivastav		Compounder, District Hospital Sagar	
		Shri. Vijay Thakur		Driver	
		Shri. Sunil Tiwary		Driver	
2	Banda	Dr. M L Jain	From Date 1 to 10	Medical Officer	9425453610
		Shri. G C Ahirvar			
		Shri. Kamalesh Chaube			
		Shri. Ramesh Rajak			
		Shri. Chandraram Ahirvar			
		Dr. R S Bhojak	From Date 11 to 20	Medical Officer	9425453784
		Shri. S L Umre			
		Shri. M L Chaurasia			
		Shri. Khanjural Raikwar			
		Dr. A B Bharadwaj	From Date 21 to 30/31	Medical Officer	7566762403
		Shri. G S Thakur			
		Shri. Ramesh Rajak			
		Shri. Kamalesh Chaube Shri. Dhaniram Raikwar			

3	Shahgarh	Sector Medical Officer	Block Medical Officer	9425626421
		Sector Supervisor	Dr. U S Pandey	
		Medical Personnel of related field		

		ASHA personnel of related village			
		Shri. B T Sahu		Compounder	
		Munna Lal Sen		Driver	
		Shri. Narayan Singh Lodhi			
4	Shahpur	Dr. Ankit Jain	Sector Shahpur	Medical Officer	9827570908
		Smt. Sunita John		A.N.M	
		Shri. Avinash Nema		Dresser	
		Shri. Sanjay Sen			
		Shri. Sanjay Dubey		Driver	
		Dr. L S Shakya	Sector Surkhi	Medical Officer	9993670632
		Shri. L P Mishra		Supervisor	
		Shri. Rishikesh Mishra		Pharmacist	
		Shri. Vivek Badonya			
		Shri. Sher Khan		Driver	
		Dr. Anand Das Sharma	Sector Dhana	Medical Officer	9827554122
		Smt. Meena Raikwar		L.H.V	
		Shri. Shesh Narayan Gautam		M.P.W	
		Shri. Anil Srivastav			
		Dr. Brijesh Verma		Sector Karrapur	Medical Officer
		Shri. B L Dubey	Supervisor		
Smt. Sharada Ahirvar	L.H.V				
Shri. M G Nema	M.P.W				
Shri. Hariram Chaudhary	Dresser				
Shri. Kishenlal					
5	Rehli	Dr. Narendra Bansal	Sector Rehli	Medical Officer	9907708997
		Shri. Deepak Soni		Pharmacist	
		Shri. Anil Srivastav		Lab Technician	
		Smt. Sushila Chadhar		L.H.V	
		Shri. Sudarsan Hajari		Driver	
		Dr. D P Kori	Sector Garhakota	Medical Officer	9836630219
		Shri. Brijkishore		Pharmacist	
		Shri. Bhagirath Ahirvar		Lab Technician	
		Smt. Parvathy Patkar		L.H.V	
		Shri. Dwarka Yadav		Driver	

6	Deori	Dr. Rajvir Singh	Medical Officer	9926663440
		Shri. Govind Vardiya	Pharmacist	9993361334
		Smt. Leena Raikwar	Staff nurse	9630556032

		Shri. Dilip Soni		
		Shri. Younis Khan	Driver	
7	Kesli	Dr. Pawan Jain	B.M.O	9993119566
		Shri. Manoj Daroga	Pharmacist	9993408151
		Smt. Radha Chadhar	L.H.V	
		Shri. Radhe Sahu		
		Shri. Brijesh	Driver	
8	Jaisinagar	Dr. J S Dhakad	B.M.O	9893553667
		Shri. Ramkishen Kori	M.P.W	
		Smt. Manisha Mishra	A.N.M	
		Shri. Ramkishen Sen		
		Shri. Sonu Valmiki		
9	Rahatgarh	Dr. Anita Tyagi	Medical Officer	7869810490
		Smt. Usha Kori	Staff nurse	9993408495
		Shri. S K Sen	Dresser	
		Shri. Gayatri Prasad Valmiki	Driver	
		Shri. Jitendra Valmiki		
10	Khurai	Dr. D B S Chauhan	Medical Officer	9926551982
		Dr. Vikesh Phuskale	Medical Officer	
		D Rashid Khan	Dresser	9406920360
		Smt. Rashmi Lal	L.H.V	
		Shri. Brijlal Raikwar	Dental Attendant	
		Shri. Bhagwandas		
11	Malthone	Dr. Shekhar Srivastav	B.M.O. Malthone	9425672253
		Smt. Sushila Sharma	L.H.V	
		Shri. Bhagwat Sharan Goswami	Pharmacist	
		Shri. Dayashankar		
		Shri. Jagbhan Yadav	Driver	
		Shri. Sitaram Raikwar		
12	Agasaud	Dr. Sanjeev Agrawal	Medical Officer	9425614358
		Shri. Prashant Manjhi	Block Programme Manager	
		Shri. S S Goyal	L.H.V	
		Smt. S Chadhar		
		Shri. Dansingh Thakur		
		Shri. Rajkumar Srivastav	Driver	

Source: CMO Office, Sagar, 2012

Table C 1.3.7 Logistic arrangement

A detailed mapping of the vehicles in all blocks that can carry out the tasks of medical emergency and search and rescue should be maintained, along with their capacity and fuel

efficiency details. This would help the concerned departments involved in the task of Disaster Management to locate vehicle availability in a better manner. Further, NGOs and private agencies proximate to the hazard-prone zones that have good working condition vehicles in place need to be contacted well in advance during the mitigation stage.

Fuel availability can be checked by having in stock sufficient fuel in the stores of all concerned departments such as Health, Transport, Homeguard, Police Department, Irrigation, Department of Power etc.

C 1.3.8 Communications

Emergency situations may require the setting up of Control Room and formulating Contingency and Disaster Mitigation Plans for each department. Effective communication systems in these Control Rooms need to be ensured to avoid any unpleasant incident. Also, agencies that can fetch ultra-modern communication networks should be approached. A good communication system can assist in the following tasks:

- Dissemination of warning
- Getting updates of the action plans of each of the concerned departments and giving necessary guidelines
- Precisely locating the hazard-prone areas and carrying out mitigation and preparedness measures
- Locating the casualties and victims and taking adequate relief measures
- Quick transfer of messages for first-aid/emergency responses
- Data collection
- Record keeping
- Assistance in locating missing persons
- Maintaining IN-message and OUT-message
- Specifying the functions of each of the members of the members of the task force engaged in relief or search-and-rescue
- Seeking external financial and material aide during emergency

The following communication systems need to be maintained in each of the concerned departments:

- Availability of Telephones
- Fax
- Internet Connectivity
- VSAT Connection
- VHF and UHF Sets (Both Static and Mobile)
- Walkie Talkie Sets
- GPS Handsets
- PC with all necessary hardware and software such as printer, scanner, pager, headsets, microphones etc.
- Mobiles
- Wi-Fi
- Wireless (in Control Rooms)

- HAM Radios (with Police during events of flood)
- Inter-compound telephone services (with the numbers of each centre clearly in place)
- Xerox machines
- Installation of Web-chats or Skype in the PCs
- Broadband Connections (with a speed of at least 100 bytes per second)

With regard to broadband and all the sophisticated computer hardware, not all departments may be equipped with many of them. However, the electronic media can play a huge role in information dissemination in such cases.

C 1.3.9 Temporary shelter and management

Sources from the DC Office and the District Emergency Response Force report that no specific building is constructed beforehand for the purpose of relief. The nearest schools, places of worship, forts etc. which have sufficient capacity and which can serve as evacuation sites are identified well in advance when the warning systems are disseminated. The provisions of food, water, sanitation, first-aid medical team, proper latrine and sewage facilities, etc. are taken care of by the concerned departments in consultation with the District Control Room.

Stay in the temporary shelters

- People are asked to stay in the evacuation sites until the authorities consider it safe with the flood subsiding.
- They need to daily listen to radio updates about flood conditions.
- Cooperate with the concerned departments such as Homeguard, Police etc. by closely following their instructions.
- Be careful about the use of fire.
- Have civic sense and take necessary sanitation and cleanliness measures in these shelters.
- Avoid wastage of food and water.
- Take necessary preventive measures against the spread of diseases.
- Take care of their cattle and other pets and ensure sanitation.
- Police, Homeguard and the Civil Defence personnel should keep themselves updated about the conditions in the affected areas and the level of water every day.
- Special care for women, children and elderly.

C 1.3.10 Water and Sanitation (WATSAN)

WATSAN is also a very important element, which needs to be addressed on the top priority, as it is directly related to the basic needs, especially in case of affected population. The supply of safe drinking water is carried out by the Municipal Department in coordination with the Department of Water and Sanitation. This also includes the maintenance of hygiene, in and around emergency shelters, periodic monitoring and inspection of storm water drainage, nallah, adherence of the cleaning schedule of the camps and other places.

C 1.3.11 Law & order, Police and Fire Services

During situations of major rail or road accidents/earthquake, thefts prevail. The victims are looted off their money and belongings and the need to safeguard law and order to tackle such anti-social elements becomes a necessity. Maintaining law and order is a major responsibility of Police; apart from it other stakeholders are also involved in it. It is at this juncture that the role of Police as agents of Public Order becomes conspicuous.

The separate action plans of Police and Fire Services need to be compiled in this regard.

In Sagor, the Revenue Department also plays a key role in law and order in conjunction with the Police.

Police Department

- Working out a contingency plan taking into account the damage estimates and the goods and services that need to be preserved at the disaster-hit zone and accordingly appoint and alert the force.
- Seal the area from trespassers and make necessary security arrangements in case of fatal accidents of road or broken bridges or dams. This need to be done until the casualties are identified, necessary medical aid is extended an assessment of the money and jewels and other belongings of the victims are made. The SP can supervise this task.
- Ensure that the assigned *sipahi* are on duty and are sincere to their work with the supervision of the SP/ASP/Liaison/Nodal Officer.
- Taking measures to safeguard the money, jewels and other personal belongings of the causalities.
- Provisions of law and order at the site of disaster.
- Make damage assessments of the place.
- Make effective communication with the District Control Room about the damages and the list of money and other possessions of the victims and diseased against the name of owners and if possible contact numbers.
- Hand over the possessions to the victims or their family members.
- Send details of the losses suffered and an estimate of the compensation packages to the victims under the Supervision of the SP.
- Check thefts and any other illegal activity in disaster-hit sites and take necessary action against the fault-doers.
- Take security measures and carry out effective patrolling and fix-packeting in the disaster-hit zones.
- Effective coordination with Homeguard and Civil Defence to carry out relief operations.
- Make provisions for maintenance of law and order and ensuring safety and security of people and of their personal belongings in the evacuation sites.

Fire Department

- Respond quickly to fire alerts.

- Maintain a list of the victims and their personal belongings after restoring normalcy at the site of the hazard.
- Coordinate with the Police by providing sufficient personnel if needed for law and order measures.

The contact details of the Fire Officer, Municipal Corporation, Sagar District are provided in the Annexure.

Apart from the Police and the Fire Department which are prescribed bodies to ensure law and order at the hazard site, many other stakeholders can also play a part in this direction.

- Homeguard
- Army personnel (who are approached in case of severe flood situations)
- Socially sensitive citizens who can report such incidents promptly to the police
- Media, who can use their expressive power to bring to light such illegal incidents and persuade the Police to do the needful.
- Local authorities who can assist the Police in this task.
- Sincere members of youth organizations at the Village level in case of security at evacuation sites during floods.
- People who can serve as citizen journalists with the help of media and sensitize and inform the local authorities, district administration and also political leaders about the multiplying thefts and inhumane actions of cashing in on and taking advantage of the victims in the hazard-hit regions and suggest the need to develop an action plan to curb the same.
- NGOs/private agencies which can assist the Police to impart security measure in the hazard-hit areas.
- Officials of NCC cadre

C 1.3.12 Public grievances/missing persons' search/media management

The Office of DC in Sagar district has in place a Public Grievances system known by the name of *Jan Sunvayi* among the locales which is conducted during Tuesdays. The Collector, Additional District Magistrate (Upper Collector) and Joint Collector convene these sessions. Further, there is a provision for the public reporting about Corruption cases near the DC Office, and the redressal of the same which is carried out on a weekly basis.

The effective management of these already existing systems in place for public grievances is the key for a smooth administration.

Further, District Control Room set up prior to flood in mid-June can take up the task of addressing public grievances if any regarding missing persons under the supervision of a personnel not below the rank of ADM/Joint Collector.

The teams comprising of expert swimmers from the Homeguard Department and police personnel can carry out the task of search and rescue and make reports and damage assessments if any to life and property in the disaster-hit zone.

C 1.3.13 Animal Care

The Animal and Husbandry Department is the key actor in this case. Provision of vaccination to cattle and other pets as preventive measure against diseases and epidemic, ensuring the availability of medicines, sufficient staff members and other paramedical personnel in the evacuation sites to impart first aid to the animals are also important. Further, the department can formulate a contingency plan prior to floods to make provisions for vehicles, their fuel availability and efficient transport facilities to shift the animals to safer sites. Also the sanitation measures need to be ensured in these sites though coordination with the Health and Water and Sanitation Department.

Further, necessary provisions for the disposal of carcass with a view to restore public life in places, disjoint from thick human settlements, need to be done. Having made estimates of the number of animals in the vulnerable zones, sufficient number of staff should be allotted for this purpose. Also the equipment such as gas cutters, bulldozers, cranes, trucks etc. need to be in place for adequate mitigation.

Block-wise list of medical officers appointed to tackle flood/disaster situation during the mitigation stage

Sl No.	Development Block	Veterinary surgeon/Veterinary Officer	Contact No.	Additional Veterinary Officer	Contact No.
1	Sagar	Dr. Dharmendra Singh Dr. Satish Srivastav	9229534652 9406520895	Shri. V L Bohre	9907016805
				Shri. U S Pandey	9827239039
				Shri. Hotilal Kori	9098363058
				Shri. Narendra Singh	9827720590
2	Banda	Dr. R K Gautam	9406531636	Shri. P C Jain	9425453772
				Shri. S B Srivastav	9424458825
3	Shahgarh	Dr. R K Gautam	9406531636	Shri. M M Dwivedi	9425693286
4	Rehli	Dr. K P Kurmi	9754224025	Shri. H S Gupta	9302592593
				Shri. U D Tiwary	9165970653
				Shri. H R Patel	9300601996
				Shri. S C Yadav	-
5	Deori	Dr. Purushottam Pal	9691698565	Shri Anil Mishra	9425450950
				Shri Ganesh Soni	9424404209
6	Kesli	Dr. K S Rajput	9893429739	Shri. Bhavanishankar Soni	9755425319
				Shri. Jalam Singh	-
7	Khurai	Dr. A K Gupta	9009494127	Shri. B S Pandey	9893970155
				Shri A K Jain	9326283627
8	Bina	Dr. Vijaya Tiwary	9713425813	Shri H C Yadav	9893813970
				Shri. Harishankar Chaurasia	9302224182
9	Malthone	Dr. Manish Srivastav	7566686754	Shri. Sumat Kumar Jain	9893375728
10	Rahatgarh	Dr. P K Singh	7415835148	Shri. R N Ahirvar	9302586055
				Shri. Muhammad Jalil Khan	9301919903

11	Jaisinagar	Dr. Jagdish Bavistale	9406520552	Shri Munnilal Patel	9981845742
				Shri. D S Pandey	9893686832

C 1.3.14 Management of diseased

A carcass disposal team is formed to carry out the burial and disposal of the diseased. The health department takes care of post-mortem measures. The proper disposal is carried to prevent the outbreak of diseases. The burial and last rites should be done complying with the religious and cultural sentiments of the diseased. In cases of accidents or events that result in deaths of large number of people, it becomes difficult to carry out the burial rites. In such cases, the bodies are handed over to the relatives if possible or mass-disposals are carried out.

C 1.3.15 Civil Defense and Home Guards

The Civil Defense and Homeguards play an unprecedented role in carrying out relief and search and rescue operations. The Homeguard District Commandant who acts as DDMO and as the leader and supervisor of the District Disaster Management Emergency Response Force sets up a Control Room with necessary communication systems and coordinates warning dissemination in the hazard prone areas. As of now, the Control Rooms are set up only for flood management in Sagar. Further, the Homeguard in coordination with the personnel of Civil Defense carry out preparedness and public awareness measures.

C 1.3.17 NGOs & Voluntary organizations

The NGOs can play a key role in the immediate aftermath of disasters by extending assistance in rescue and first aid, sanitation and hygiene, damage assessment and assistance to external agencies bringing relief materials. During the post disaster phase, the NGOs can take a lead by providing technical and material support for safe construction, revival of educational institutions and restoration of means of livelihood and assist the government in monitoring the pace of implementation for various reconstruction and recovery programmes.

C 1.3.16 Role of Private Security

As per the recent private security bill introduced by the State Government, the private guards and security agencies have to play a vital in disaster management, and especially in the disaster response stage. Sainik and jawan who have retired from army, gorkhas and other private securities can act as additional workforce to the Police, Civil Defence and Homeguard for search and rescue and relief operations. The District and Police Control Rooms and the Control Rooms set up in the Homeguard Office should maintain the details of such private agencies well in advance along with their contact numbers.

In Sagar however, there aren't any records of aide and assistance sought from private guards or security agencies at the time of floods.

C 1.3.18 Relief management planning

The task of securing relief to the disaster-hit population is carried out by the combined efforts of the concerned departments under the supervision of the Collector.

The following is a list of the materials that were supplied to the 41 relief camps in Sagar during the flood of 2005 and the agencies and institutions that extended support. These organizations serve as potential sources of aid.

Relief centres identified during floods

Sl. No	Name of the Organization providing relief aid	Materials in hand
1	Indian Medical Association and others	Saree
2	Bundelkhand Petrol Pump, Sagar	Raincoat
3	Lines Club, Sagar	Plate
4	Mahila Club Samiti, Sagar	Glass
5	Radheshyam Bhawan Janjagaran Samiti, Sagar	T-Shirt
		Carpet
		Blankets
		Old Clothes
		Clothes for kids
6	National Integrated Medical Association, Sagar	Blouse piece
		Spoon

7	UNICEF, Bhopal	Candles
		Raincoat (Tarpaulin)
		Blankets
		Gas-lighter
8	Care India, New Delhi	Family Packet
		Plastic Tank

The nearest schools, dharamshalas, etc, are earmarked for evacuation before the conditions of flood develop. Following is a list of the centre/public places that had been used and still can serve as relief centres when flood emergencies arise.

Block-wise list of the evacuation sets that can be used at the time of flood

Sl. No	Tehsil	Temporary shelter/relief camp set up	Total no. of camps	No. of persons
1	Garhakota	1. Plaza Complex	15	5000
		2. Vidya Parisar		
		3. Saraswati Shishu Mandir		
		4. Naveen Madhyamik Shala		
		5		
		6. Tehsil Office		
		7. Municipality		
		8. Jain Dharamshala		
		9. Bus Stand		
		10. Goodar Shala		
		11. Sahu Samaj Dharamshala		
		12. Governmental Hospital, Garhakota		
		13. Ganesh Talkies		
		14. Sahulal School		
		15. Kanya Shala		
2	Rehli	1. Municipality	8	547
		2		
		4. Bal Gyanodaya Shala		
		5. Saraswati Shishu Mandir		
		6. Kanya Prathamik Shala		
		7. Devliya Dharamshala		
3	Deori	1. Boys' High School, Gaurjhamar	5	136
		2. Primary School, Gaurjhamar		
		3. Anganwadi Centre, Gaurjhamar		
		4. Panchayat Bhawan		
		5. Shiksha Guarantee School, Gaurjhamar		
4	Sagar	1. Rohan Dharamshala	9	1500
		2. Tili		
		3. Saraswati Shishu Mandir		
		4. Macharyayi		
		5. Mudra		
		6. Berkhedi Guru		
		7. Lotna		
		8. Lotni		
		9. Bagraj Dharamshala		
5	Rahatgarh (Sehora)	1. Samudayik Bhawan, Rahatgarh	2	531
	2			
6	Banda (Fatehpur)	1. Chauka Bheda	2	192
		2. Panchayat Bhawan, Fatahpur		

C 1.3.19 Media Management:

The management of print and electronic media is an important phase in Disaster Management. The following measures can be considered to carry out this task:

- Emphasize the need of media ethics in the syllabi of Mass Communication and Journalism courses offered in numerous colleges.
- Have in place severe penalty and castigation measures in all electronic and print media offices whether public or private against reporters or staff who send rumours or violate the guidelines of media ethics in any manner.
- Strict law in place to ensure that the above-said castigation measures are put to practice in their letter and spirit.
- Appoint a Vigilance Team to check media actions and conduct surprise inspections.

Role of Media in Disaster Management

- Media can play a huge role in warning dissemination in the *Before Disaster Stage*. T.V, newspapers, magazines, journals, fortnightly issues etc. can focus on the impending monsoon and spread awareness to the general public regarding the plausible mitigation measures.
- Publish news of missing persons/damage assessments to help the administration take the necessary measures.
- Sensitize its reporters to indulge in rescue operations if possible rather than cashing on the plight of the victims by generating flash bulletins to compete with their counterparts.
- Be sensitive to people's sentiments by not picturing heart-breaking and scary images of severe road/dam/bridge accidents or other unpleasant events.
- Deliver unbiased service.
- Avoid hoax messages and rumours about disasters which may create panic among the mob.
- Assist the concerned departments in every possible manner for information dissemination and act as a vibrant bridge between public and administration.
- Give due opportunities to the public to relate their conditions in flood and the rescue measures taken without external compulsion.
- Refrain from misdirecting the administration or the public about disaster situations by creating unnecessary jargons simply to capture audience and earn the limelight.

Role of Police in media management

- Seal the sites of serious rail/road accidents and curb the barging-in of the media personnel as much as possible.
- Agree peaceful pacts with media to respect the sentiments of the disaster-victims.
- Carry out *Media Sensitization* workshops on a quarterly basis with the IG or SP convening the same and with the due presence of major staff of all local T.V channels and newspaper/magazine editors.
- Alert the force to tackle the severe harassment of the media in situations when they need to focus on assisting the concerned departments for relief and rescue and need to ensure law and order.
- Seek the help of NCC officials, army, Homeguard to manage media in the disaster-hit area.

Other than the police, the public, local authorities, village-level committees etc. can take necessary measures to check the media.

C 1.3.20 Fire Services

The Department of Fire Services is one of the crucial responders to disasters. The staff of Fire Services will be trained, retrained in disaster management skills, and will be further upgraded to acquire multi-hazard rescue capability, in order to tackle any emergency related to fire or the allied substances.

C 1.4 Recovery and Reconstruction Plan

In the post disaster period, a reconstruction plan needs to be evolved by each of the line departments to restore normalcy to the lives and livelihoods of the affected population. These measures short-term as well long term. Short-term recovery will return the vital life-support systems to minimum operating standards while long term rehabilitation will continue till complete redevelopment of the area takes place. The phase of recovery comes after the rescue and relief measures.

The function of recovery and reconstruction is carried out by a District-level Relief Committee. In each sub-division, the Sub-Division Officer (SDO) and in each tehsil, the Tehsildar convenes this task. All these measures are undertaken under the due leadership and supervision of the District Collector. All concerned departments function closely under the directives of the Collector. The chain of actions takes shape once the impending monsoon and the potential damage is realized.

Short Term Measures:

- Make an assessment of the damage to life and property and send the same to the District Control Room.
- Make arrangements for the burial of the diseased.
- Dispose the debris.
- Provide compensation packages to the affected families considering the damage they have suffered.
- Help the affected families to relocate themselves if needed.
- Mobile schools in place to help the children to continue education.
- Working out an effective town planning in consultation with key officials of the concerned departments.
- Activate a public grievance system and update an action plan for their redressal.
- Price concessions to the affected families and provision of HYVs and fertilizers at lower rates.

Long-Term Measures

- Assembling the resources and forming committees to implement the Town Planning.

- Provision of temporary jobs to people who have lost their livelihoods or to women of families who have lost their breadwinners until they recover normalcy of lives.
- Housing insurance.
- Loans at lowered rates.
- Informal credit facilities through microfinance institutions, SHGs, NGOs.
- Check corruption and monitor that the recovery and compensation packages go into the right hands.
- Address the grievances without much delay.
- Realizing the gaps in the mitigation and preparedness measures and accordingly updating the Disaster Management Plan.

C 1.4.1 Restoration of basic infrastructure

The task of assisting in restoration is led by the PWD as the nodal agency. The plan for reconstruction is developed by the housing board. The damage suffered by the victims would be assessed and based on that, funds would be provided. The restoration plan will take into account the degree of risk of a particular zone and ensure building standards and safeguards and other precautionary measures accordingly.

C 1.4.2 Reconstruction of damaged buildings and social infrastructure

Reconstruction of damaged buildings is a long term initiative. The Town Planning, Municipal Department and PWD are bodies which coordinate this task.

C 1.4.3 Restoration of livelihoods

Families which have lost their cattle or any source of income need to be extended with special compensation packages. The Revenue, Forest Department, Agriculture Department etc. take up this task. Further, loans are provided by banks at discounted rates and microcredit facilities are provided by SHGs and NGOs to help the victims to help the victims restore their livelihoods.

C 1.4.4 Psycho-social interventions

In many cases, disasters whether they be in the form of road accidents, bridge collapse, or epidemic culminate in people losing their near and dear ones. The effect of such trauma is has often had the worst impact on women and children. They require special care and counselling to help overcome such tremors to avoid the development of psychological setbacks in them. Also, children who are orphaned tend to lose balance and choose to drop-out or end their lives.

Trauma-handling and social rehabilitation thus become important in restoring normalcy. Psycho-social interventions are therefore a very crucial element in the post-disaster stage and are taken care of by special medical teams consisting of child specialists and psychiatrists.

C 1.5 Cross-cutting elements

C 1.5.1 Community based disaster management

The local communities are always the first responders the initiatives taken at the community level to combat disasters is the key. Following measures are suggested for an effective Community based disaster management:

- Set up a Contingency Plan to combat the impending monsoon.
- Set up Committees at the GP level and organize teams that can create awareness among the mob regarding the potential damage and the mitigation measures that can be undertaken.
- Keep updates of the condition of rainfall.
- Be alert once the warning disseminated.
- Shift as soon as possible to elevated areas with cattle and other pets.
- Organize the local population towards setting up equipment to tackle flood conditions with indigenous materials.
- Conduct quarterly meetings at the village-level with the *Sarpanch* convening over the same.
- Assist the search and rescue and relief teams from Homeguard and Police in every possible manner and cooperate with the authorities while staying.

C 1.5.2 Needs of the Special vulnerability Groups

Disaster management measures should further strive to cater to the needs of the vulnerable groups which include women, children, elderly and the differently abled persons since they require special care and assistance. Following are some points that need to be considered to integrate addressing the needs of the disabled with disabilities with disaster management.

- Disability as a cross-cutting issue
- Representation and inclusion
- Non-discrimination
- Awareness and need to sensitize staff volunteers and manager toward disability
- Training
- Risk and resource mapping

Below are listed some measures that are suggested in this regard:

Women:

- Send special women-force for catering to their needs during evacuation and relief operations.
- Ensure their safety in the relief camps and protect them from any molestation or improper behaviour.
- Provision of clothes and ensuring proper toilet and sanitation in the relief camps.
- Impetus to microenterprise to encourage women to be self-employed and independent.
- Start projects that will help them livelihood restoration after suffering a disaster.
- Provide jobs to women who have lost their husbands or breadwinners and secure their earning.

- Pension schemes.

Children:

- Special funds allocated at the district level to address the issue of children and help them restore normalcy.
- Effective counselling sessions for children who are victims of disasters to help them overcome the trauma.
- Fostering of children who become orphans.
- Enforcement of Child Protection laws to their letter and spirit, such as prohibition of child-labour, compulsory education to children below the age of 14 years and protection from domestic violence/molestation/sexual harassment.
- Have in place special Trauma Centres in each block and proper sponsorship of the abandoned children.
- Implement necessary interventions at the village level to help the victims continue their studies. (Bal-Sakhi, Mobile Schools etc.)
- Seek the help of NGOs such as CRY, Aid India, etc. that can take due care of the abandoned children.
- Enforce strict laws against child trafficking.

Elderly:

- Arrange special vehicles for their evacuation to safer places and approach them patiently.
- Provide materials such as walking sticks, wheel chairs and stretchers if needed in the relief camps.
- Make regular medical check-ups for them in the relief camps and consult the doctor/specialist if needed.
- Have special personnel who can apprehend their special needs.
- Old age homes need to be established at places.
- Pension schemes in place.
- Curbing the use of alcohol, cigarettes, bidis or drugs in the relief camps that may deteriorate their health conditions.

Disabled Persons:

- Stretchers, chairs or trolleys may need to be used to carry the PWDs to safer places.
- Evacuation boats may need to be adapted with special seats
- Reunite the PWDs with their caregivers in the evacuation sites
- Making available wheel chairs for the crippled.
- Sensitive handling of the elderly by rescue personnel.
- Agencies that takes special care of the differently-abled need to be encouraged.
- Trauma centres.
- Pension schemes.

C 1.5.3 Addressing climate induced anthropogenic issues

Standard Operating Procedures (and Checklists)

Standard operating Procedures will be prepared with the objective of making the concerned agencies/persons understand their duties and responsibilities regarding disaster management

at all levels. All concerned departments, divisions and agencies shall prepare their own action plans in respect of their responsibilities. Emergency responses teams will be kept ready by each department so that they can move to disaster site/affected area on short notice. The Standard operating procedure shall be informed. In the subsequent sections, the suggested SOPs of all concerned departments are discussed.

I. Home Department:

i) Police Department:

Non Disaster Stage- Mitigation

- Identifying the potential disaster, regular training need to be imparted to the personnel to combat such conditions.
- Proper inspection and maintenance of the equipment used for effective communication as flood situations may lead to failure of telecommunication networks.
- Activation of the Control Room by ensuring the following:
- Proper assistance extended to all concerned departments under the coordination of the Superintendent of Police.
- Elaborate mapping of the taluks/blocks that are prone to floods.
- Listing the resources to fight the worse impact and keeping a check on their availability if a situation of emergency arises.
- Planning procedures with the Emergency Control Room of the Homeguard and Civil Defence well in advance to avoid last-minute muddle.
- Well-structured duties and responsibilities of the Control Room members as defined by the Nodal Officer/SP/ASP. However, during emergency, rapid response need to be ensured beyond one's defined responsibilities.
- Updation of the equipment in the control room, both software and hardware
- List of wireless networks and HAM Radios in place
- List of emergency vehicles in place and their maintenance details for the transport of relief to the disaster-hit area.
- Proper coordination mechanism in place with the list of landline numbers of all officials, personnel and other staff to avoid miscommunications Police, Civil Defence as well as Homeguard
- Make availability of disaster-specific rescue tools such as cranes in case of severe road accidents or during collapse of building/bridges. However, the district administration has no records of any building or dam collapse as of now.
- In coordination with the City Traffic Police, the illegal parking of vehicles across roads and congestion resulting from the same need to be curbed.

Before Disaster Stage- Preparedness:

- In view of the impending monsoon, contingency plans need to be drawn in consultation with concerning authorities and the staff need to be alerted to meet the possible flood situation.
- To seek assistance from NGOs/private agencies/volunteers if the potential damage that may arise due to disaster situations seems greater than the capacity of the Police Force.

- Ensure proper warning and alert systems in place 24*7 with effective communication and close coordination with Akashvani and T.V broadcasts.
- Having 5-6 additional swimmers in place other than those of Homeguard, for proper evacuation operations.
- Constant watch be maintained at all dam sites, rly traffic, National and State Highways, Bridges and Culverts to avoid any breach.
- A check be ensured on unlicensed ferry services and the site for landing of helicopters in emergency need to be identified well in advance.
- Special watch be kept in big rivers like Narmada, Chambal, Betwa, Sone, Tapti etc. Steps for controlling and directing traffic be taken.
- If flood and cyclone situation occurs under a jurisdiction, SSR Bhopal be informed at least thrice a day till normalization. Ensure that information on flood situation, mishaps and damages is passed on to SSR Bhopal immediately.

During Disaster Stage- Response

- Inform the District Collector for his prompt orders and sanction of funds to the respective departments to trigger the action plan.
- Quick contacts with the District Homeguard to extend support and arrange the vehicles for evacuation and rescue
- Proper communication and information dissemination regarding the potential risk to life and property and necessary guidelines to Akashvani and T.V broadcasts.
- Managing the media in the best possible manner to prevent them cashing in on the plight of the victims and the diseased.

After Disaster Stage- Recovery and Rehabilitation

- Provide assistance n search and rescue operation
- Identify the diseased and make necessary arrangements for the burial as per the set customs of the community/religious group to which they belong.
- Curbing the prevalence of theft and maintenance of law and order at the disaster site, mainly in case of road/rail accidents.
- Make arrangements for trained personnel from NCC or NGOs.

ii) Homegaurd

Non-Disaster Stage- Mitigation

- Extend hazard-specific training to the sainik and jawan
- Maintain a proper communication system in place for close coordination with the Police and other concerned departments
- Identify the vulnerable zones of the district and make estimates of the potential risk associated with man or material if a disaster strikes.
- During mid-May, 2-3 trainers or rescue personnel can conduct training on disaster management in flood-prone villages providing an impetus to mitigation and damage minimization by means of Community Sensitization.
- Ensure the proper availability of equipment such as lifebuoy, life jacket, motor boat with engine and rope etc.
- Measure the exposure of the hazard-prone zone. This would help in making estimates of the number of personnel needed for the response measures.

- Update the Emergency Control Room and undertake the following tasks:
 - Formulation of the members under the advice and supervision of the District Commandant, Homeguard
 - Set in place all facilities, both software and hardware clearly the duties of the each person.
 - Make a list of the swimmers and search and rescue team with team leaders for each of them to ensure smooth management
 - Keep in possession telephone numbers of all concerned departments who might be engaged in the tasks of search and rescue and relief purposes, such as revenue, health, food and civil supplies, water and sanitation, forest etc.
 - Maintain effective communication system in place
 - Make a list of the resources in hand after analysing the potential risk
 - Keep a list of vehicles in good working condition and make estimates of the number of additional vehicles that may be needed at the time of evacuation. Further, approach the transport department to make the necessary arrangements for the additional vehicles or seek help of NGOs or private agencies for the same.
 - Clear assessment of the capacity of vehicles need to be made as against the population at risk in a particular area or locality. Additional vehicles need be maintained as buffer in case of emergency with the private agencies/NGOs
 - Make arrangements for repair and procurement of equipment or vehicles in case of any damage.
 - Maintain enough number of equipment such as cutters, lifebuoy, life-jackets after making the risk-assessment.
- Earmark specific buildings, schools, structures etc. that can serve as evacuation sites and keep clear records their distance from the hazard-prone area for assessing the promptness of response.
- Most roads in remote areas might be demolished or terribly sunk in case of severe flood conditions. Therefore, alternative routes for transportation need to be identified well in advance and the maps for the same need to be updated in case of medical response and immediate evacuation. Disseminate information regarding the alternate transportation routes to the departments engaged in relief operations such as the tehsil offices/food and civil supplies/forest etc.
- Clear details of the kuchcha pucca road in the feasibility of quick evacuation on such places need to be gathered well in advance. Also their distance from the hazard-zone need to be measured.
- Sources from the Control Room say that, in Sagar, aid and assistance from Army are also sought in case of severe conditions. Important contact numbers of Army and Navy personnel need to be maintained well in advance for immediate and effective communication.
- HAM Radios are mostly operational during flood conditions. Enough number of HAM Radio and Satellite phone sets need to be in place in case of emergency by coordination with the Police Department.
- Prepare disaster-specific Do's and Don'ts and send copies of the same to all tehsils. These can be imparted to the local public and can help curb the damage to life and property to a large extent.

Before Disaster-Preparedness

- Appointment of a Liaison Officer who would coordinate the Disaster Preparedness measures.
- Immediately identify the 'High Risk' and 'Low Risk' areas for different and instruct the nearby police installations to keep themselves alert
- Ensure that the DEOC is in preparedness mode all throughout the year
- Establish Contingency Plans in coordination with the concerned departments.
- Alert the jawans and sainik of the impending disaster and assign them in the prone areas
- Precise assessments of the risk-prone area need to be made.
- The Control Room need to maintain proper coordination with Akashvani and T.V broadcasts and other media to disseminate warnings and alerts. Proper communication with tehsils and GPs too need to be maintained to send the alerts.
- Special warning need to be given to the fishermen. The DDMO of Sagar however informed that in most cases the fishermen take lightly the warning as it's their only means of survival as well as the people deny to leave their homes and evacuate to new safer places due to the attachment to their ancestral homes. In such cases the rescue operations need to be done forcefully.
- Final inspection of the operational capacity of the resources and equipment and the availability of swimmers. Identify the resourceful NGOs/private agencies which can be of aide if the available resources would not be enough and maintain the contact numbers of such agencies and proper records of their resource and personnel capacity.
- Fuel arrangements for the vehicles need be made
- Disseminate warnings at all public places; bus and railway stations,.
- Check the viability of the identified evacuation places and relief centres, identify their capacity and coordinate with the concerned departments to assess the procurement of food and water in such centres. If such facilities are difficult to be made available in the identified places, alternate places need to be searched for.

During Disaster Stage- Response

- Undertake the task of evacuation of villagers to safer places
- Assist the medical response team by providing vehicles and drivers for taking the casualties to relief centres for first aid.
- Assist the concerned departments in the relief works with the provision of good-condition vehicles.
- Seek the assistance from the above-said NGOs/private agencies in case of shortage of resources for the rescue measures.
- Keep in constant connection with the District Disaster Management Control Room with timely information regarding the potential damage and the need for man and material at every taluk/tehsil.

After Disaster Stage- Recovery and Reconstruction

- Carry out Search and Rescue Operation as per the orders of the District Collector.
- Identify the errors in coordination and make necessary changes in the subsequent plans to avoid further damage.
- Make use of the resources earmarked for search and rescue.
- Make provisions for additional vehicles/equipment to the concerned departments.
- Assess the damage to life and property in the assigned zones and make reports.

II. Revenue Department:

Non-Disaster Stage- Mitigation

- Formulate teams for vulnerability and risk assessment who would operate in close coordination with the Homeguard.
- Conduct regular meetings and evolve a Disaster Management Plan for the impending hazard, which is often in the form of flood in the district of Sagar.
- Ensure that all staff of the Control Room are regularly on duty prior to the development of flood conditions.
- Collect regular updates from the Tehsildars regarding the functioning of Village and Gram Panchayat level Disaster Committees and ensure their activation and provide guidelines to improve their action plans. Further, keep a list of the SHGs and NGOs involved.
- Keep updated reports with the Control Rooms established at all levels; Police, Homeguard and Disaster Management at the district level.
- Ensure that the DDMCs are in place at all levels District, Block, Village and GP level. In Sagar, although in written, the law seeks for the formation of a DDMC at each level, no such Committee is in place. There is thus a need to ensure the activation and proper functioning of such Committees well before realizing a potential hazard.
- Secure details of the disaster-prone areas and assign an officer-in-charge or Zonal officer for each tehsil or block for effective coordination with other concerned departments.
- Keep updates of the equipment and resources in hand of the Home Department to tackle a situation of disaster.
- Obtain estimates of risk associated with each block whether in terms of man or material and assess the funds that might be needed.
- Ensure that the sources of funds are in place well in advance.
- Discussions with the Joint Collector, Sagar revealed that in most cases, no specific funds are allocated well in advance for the task of Disaster Management and control. Funding provisions are carried out on credit in the initial stage. In such situation ensure that credit agencies whether government/NGOs/private agencies, which are potential sources of funding are contacted beforehand.
- Disseminating information to all control rooms and concerned departments regarding the contact numbers of all funding agencies
- Seek the help of NGOs and
- Appoint a Rapid Damage Assessment Team at all tehsils/blocks.
- Make estimates of the funds that can be obtained in the short run and long run and analyse their adequacy as against the risk associated with each disaster-prone area as given by the Home Department
- Make necessary changes in the DDMP
- Appoint inspection team for assessing the BIS standards and other safeguards installed in buildings/dams/bridge/roads. This can be done on quarterly basis.
- Formulate an expert Committee to assess the risk factor in all old structures and buildings and accordingly make funding provisions.
- Be in constant contact with the SDOs at the tehsil level to keep track of the availability of stocks of emergency resources

- Recognize the need for Development-Disaster Management composite well in advance and check with the CEO, Zilla Panchayat and PWD constantly, regarding the development schemes, the contractors indulged and the safeguards installed.
- Appoint teams for carrying out repair work of the damaged structures.
- Effective management of the LokSwar and the online public forum and safeguarding the quick redressal of the public grievances in the best possible manner.
- Realize the possibility of other potential hazards such as fire and make provisions for the fire-resistant and safety measures at all public places for effective management well in advance.
- Make special funding allotments at the block, village and GP level for the effective management of DDMCs.
- Ensure that the provision of all primary needs in the evacuation sites in coordination with the Food and Civil Supplies, Water and Sanitation and the Tehsils.
- Provide guidance to the Disaster Management Committee regarding the action plans identified by each department with regular updation.
- Appointment of software experts for proper record maintenance
- Assist the Police and Homeguard Officials to inform all concerned departments regarding the alternative routes of transportation.

Before Disaster Stage- Preparedness

- Make final preparations for the action plans formulated during the meetings.
- Make arrangements for effective warning systems in the meetings.
- Activate the District Disaster Management Control Rooms with all the necessary amenities in place.
 - Alert the members regarding their tasks and duties and ensure their attendance.
 - Maintain the contact numbers of all concerned departments
 - Prepare a final draft of the officials and personnel to be engaged in each task of relief and rescue
 - Make a list of the available resources and NGOs/private agencies that can fetch additional equipment
 - Ensure that the resources are updated and maintained and do not require repair at the eleventh hour.
 - Ensure that the above-said tasks are carried out under the Supervision of the Control Room Manager
 - Maintain a list of rescue personnel and note their contact numbers
- Send a team of 3-4 experts in each hazard prone area for the further inspection of the relief amenities such as the availability of food and safe drinking water.
- Seek the help of media for imparting warning or send vehicles for announcing warning to the most-danger prone areas.
- Help identify raised and safe locations to evacuate people.
- Give necessary guidelines to the Homeguard and Police to evacuate the people to raised sites and safer places.
- Make special provisions for aged, differently-abled persons, women and children such as carriers, stretchers, vehicles (with first-aid equipment and oxygen cylinders) with coordination with the Health Department.
- Map the number of personnel and other staff available in the hazard-prone areas and

<p>assess the relief capacity and make necessary arrangements in case additional personnel are needed.</p> <ul style="list-style-type: none"> • Make the adequate funds available for use and keep close contacts with the administration of the neighbouring districts in case any emergency funds are needed. • Instruct the Police and Homeguard for forcible evacuation if needed. • Make estimates of the financial details of relief and search and rescue.
<p>During Disaster Stage- Response</p> <ul style="list-style-type: none"> • Coordinate information dissemination and warnings along with the Home Department • Manage the activities of the concerned departments • Ensure that the response measures are carried out effectively at all levels; district, block, village and gram panchayat • Keep regular contacts with the Zonal officers to carry out arrangements for evacuation and relief operations • Make regular estimates of the damage caused to people and crops with the updates obtained from the <i>Rapid Damage Assessment Team</i> • Make sure that the funding earmarked for each task is extended to the concerned departments and all the tehsils. • Check corruption at the intermediate level of fund allocation with the help of Vigilance and Police. • Direct the donations by some organizations and philanthropists for the right execution of relief tasks to win public confidence and appoint sincere and dutiful officers for the same. • Ensure incessant availability of food, shelter and water in the evacuation sites. • Lift horrendous formalities at the Police thanes, courts of law and hospitals during serious accident cases. This discourages people from saving lives of the casualties on humanitarian ties.
<p>After Disaster Stage- Recovery and Reconstruction</p> <ul style="list-style-type: none"> • Give guidelines to Police, Homeguard and Civil Defence to carry out necessary search and rescue operations. • Update the reports of the Rapid Damage Assessment Team • Indent the funding under two headings- Short and Long Term funding provisions

Short-term Funding

- Relief measures such as shelter, medical expenses, food, safe drinking water and sanitation
- Estimating the diseased and accordingly allocating ex-gratia funds
- Informing the relatives of the diseased and making necessary arrangements for the cremation of the bodies, keeping in mind, their religious, cultural and communal sentiments
- Make funds for the suction and release of excessive water from the croplands and proper sewage systems in place with the aide of Municipal Corporation, Police, Homeguard and/or NCC officials
- With the estimates of the damage caused to crops, allot funds for the affected families

Long-term Funding

- Provide temporary shelters to the affected families until resettle
- Give necessary compensation to the farmers who have lost vast areas of irrigated land considering the damage that they have incurred.
- Appoint a Commission for ensuring the proper dissemination of funds into the right hands
- Keep check on corruption and theft with the help of Police during the events of road accidents/earthquakes
- Make provisions for jobs to breadwinners of the affected families to encourage them earn their own livelihood

III. Health Department

Non-Disaster Stage- Mitigation

- Organize a Task Force to operate at the time of emergency in each tehsil/block/locality prone to a disaster comprising of the following key members and equipment in place:
 - MD (6-7)
 - Surgeon (2-3)
 - Nurse
 - Compounder
 - Pharmacists
- The information on population at risk and the potential damage that is imparted to the Health Department need to be properly identified by each member of the Task Force and the necessary equipment need to be arranged under the effective supervision of the CMO/Additional CMO
- Obtain the updation on alternative routes to the evacuation centres from the Homeguard and police and disseminate these details to all staff in all the health centres nearest to the disaster-sites.
- Carry out frequent meetings and formulate a Disaster Management Plan for health activities and measure the feasibility of the action plan.
- Make a record of the NGOs/Private agencies which have potential health resources and keep close contacts to approach them at the time emergency.
- Formulate a separate Medical Force to cater to the needs of the Special Vulnerability Groups. This point is further elaborated in subsequent sections.
- Extend training programmes to medical and paramedical staff about first-aid measures.
- Have in place all the first-aid equipment including oxygen cylinders in the ambulances.
- Be updated regarding the vulnerability maps showing the clear locations of relief activities.
- Ensure fuel availability in the ambulances and other vehicles and maintain a buffer stock of fuel in case of emergency. Also make sure that the vehicles are in good working condition.
- Conduct expert inspections of the medical equipment and replace the worn-out, rusted and damaged ones development of puss and infection

- Identify the right kind of pharmaceuticals in place and expert paramedical staff
- Provide training to PHCs/CHCs/sector PHCs/allopathic centres regarding the potential epidemic that may take root in hazard prone areas and the prevention and control measures that can be followed to curb its spread.
- Formulate a *Public Awareness Team* exclusively for spreading public awareness and to engage the locales in Disaster Management. The following things need to be taken into consideration with regard to the team:
 - The team should comprise MDs, psychiatrists, gynaecologists and child specialists and assisting staff.
 - The basic first-aid measures need to be informed to the general public at the tehsil/block/GP level.
 - Conduct *Cleanliness and Sanitation* classes in schools especially in the rural and semi-urban areas
 - Blood donation campaigns
 - Carry out health inspections in educational institutions on a half-yearly basis
 - Make posters, cartoons, articles regarding the prevention measures for disasters such as road/rail accidents,
 - Publish yearly magazines spreading awareness regarding prevention and cure of various epidemic, important health tips, necessity of safe drinking water
- Operate in perfect coordination with the government agencies and seek funds for ensuring availability of resources and medical personnel.
- Mobile dispensary units need to be in place
- Make tenders calling for blood donors with the help of electronic and print media. Also, make note of the volunteers and blood donors according to the blood-groups, the average time, they will take to arrive and their contact numbers so on.
- Map the Health Centres nearest to the hazard-prone sites well in advance and the details of the number medical personnel and availability of equipment in them such beds, medicines, doctors, pharmacists, staff nurse etc. Also, ensure the supply of necessary resources to these centres.

Before Disaster Stage- Preparedness

- Mobile health centres should function actively and each member need to be alerted about an estimated number of casualties and the specific tasks.
- The availability of the blood donors to the mapped sites need to be ensured. Further, special vehicles need to be in place for them.
- Ensure the availability of mosquito repellents at the evacuation sites
- Update the Department-specific Disaster Management Plan
- Availability of the personnel, medicines and resources need to be ensured and additional stock be ordered in case of emergency.
- Coordinate with the media and Akashvani to impart first-aid tips to the general public
- Keep a close watch on the proceedings and updates of Control Rooms and coordinate with them to visit the disaster sites as soon as possible with adequate medical response measures

During Disaster Stage- Response

- Carry out necessary first-aid measures
- In case of serious road accidents, avoid the tedious formalities at hospitals and first-

aid clinics.

- Contact the blood donors and make necessary arrangements for their quick arrival in the evacuation sites
- Make special provisions for the special vulnerability groups
- Make effective communication and send the stock of medicines to the affected area.
- Make available water-purifiers and safe-drinking water cans in the sites
- The severely injured need to be swiftly taken to the nearest hospital for treatment

After Disaster Stage- Recovery and Reconstruction

- Make necessary arrangements for DDT and insecticides to avoid the spread of diseases in the evacuation sites.
- Coordinate the task of conducting post-mortem and cremation of the diseased
- The sudden surge of patients and casualties need to be managed by ensuring the availability of adequate staff in the nearest hospitals from other centres.
- The psychiatrists and child specialists can play a big role in managing the trauma situation especially in case of children who have lost their parents. Counselling need to be organized at the village level to help them overcome the trauma.

IV. Water Supply Department:

Non-Disaster Stage- Mitigation

- Make a report on the available water sources in the block/tehsil/locality which is most prone to disasters
- Water-saving campaigns need to be conducted as part of Community-Based Disaster Management measures. Community Sensitization through lessons of water-harvesting, recycling, simple habits to save water at home, office, public places etc. will make a difference in terms of the availability of water in case of emergency. At the village level, the Youth Organizations and DM Committees can further help to accomplish this task
- Assistance from research institutions regarding water sanitation and recycling measures need to be sought for efficient water management especially under conditions of drought
- Organize an Expert Team to negotiate on the available sources of water in case of failure of the regular water system
- If possible, control rooms can be set to keep track of the vulnerable areas and the earmarked places of evacuation. Further the contact numbers of all concerned departments need to be maintained to get updates of water shortage and provision facilities
- Have in place water systems such water dispensers
- Make a list of the vehicles in place for the supply of water to the affected areas
- Regularly check the functionality and availability of fuel in these vehicles
- Have furnished water systems in place near kuchcha housing colonies, tea stalls and cracker shops
- Proper water-testing systems need to be in place well in advance for ensuring safety
- Any leakage of the supply vehicles and tankers need to be repaired and the rust and

<p>accumulated dirt need to be cleaned.</p> <ul style="list-style-type: none"> • A record of the NGOs and other support agencies can be maintained for the additional supply of water and availability of vehicles in case of shortage or damage of the existing ones • A list of the workers and staff need to be maintained and additional workers or volunteers can be sought well in advance from NGOs and NSS cadres
<p><i>Before Disaster Stage- Preparedness</i></p>
<ul style="list-style-type: none"> • Alert the staff to make and the control room members regarding the population at risk and the specific tasks they need to undertake • Stocks of potassium permanganate and chlorine need to be ensured • Work out a contingency in coordination with other departments and under the guidelines of the control room • Ensure proper communication systems in place in the control room and update their maintenance. Make provisions for their immediate replacement if they are of poor condition
<p><i>During Disaster Stage- Response</i></p>
<p><i>After Disaster Stage- Recovery and Reconstruction</i></p>
<ul style="list-style-type: none"> • Identify the diseases that the filthy conditions in the evacuation sites may lead and make necessary provisions of staff and medicine. Special care to children and pregnant and lactating women need to be given in this regard • Water pipes need to be fixed in the sites with proper sewage systems • Water supply schemes.

V. Public Works Department

<p><i>Non-Disaster Stage- Mitigation</i></p>
<ul style="list-style-type: none"> • Keep a list of all staff and their contact numbers well in advance • Proper maintenance of the resources and equipment such tractors, bulldozers, generators, cotters, cranes, excavators, tipper, recovery vans, snow beeters, dumper etc. should be done • A list of the vehicles need to be maintained and their fuel availability and proper functioning should be ensured • The list of available resources and important contact numbers need to be disseminate departments such as Police • Set up Expert Committees for identification of buildings, roads, dams and other structures that have high probability of collapsing and which pose danger to life and property. • Effective management of the <i>Lokswar</i> as already explained and weekly addressal of the received petitions • Set up a plan for emergency repair works of buildings, dams, bridges and roads • Details of the names, contact numbers and quality of building materials, stocks in hand and service provided need to be updated • The road maps, average number of vehicles travelling a day on a bridge, the

neighbouring villages, the capacity of the bridge etc. need to be constantly recorded. In case of wear and tear, repair works need to be carried without fail as early as possible

- Prepare a sketch of the dams that pose potential hazards and set up expert research teams if necessary to assess the water level above which damage to life and property can be speculated and to inspect areas of damage and which require urgent repair works
- Regardless of the guaranteed life of buildings and dams by the contractors, regular check need to be maintained on their sustainability
- Form separate inspection teams to check the building standards of the contractors before a project is assigned
- Proper availability of building materials and check on any discrepancy need to be maintained.
- Ensure the funds allotted are utilized in the most efficient manner and for quality constructions. Frequent inspections by officers from Vigilance to check any use of sub-standard materials for construction and any form of corruption is required

Before Disaster Stage- Preparedness

- Depute a representative at the DEOC as per the guidelines of the DDMA.
- Establish radio communication with the DEOC.
- Inspection of vehicles, fuel tanks filled and batteries and electrical wiring covered as necessary.
- Additional vehicles should be dispatched from district headquarters and must be stationed at safe strategic spots along the hazard-prone routes.
- Undertake the urgent repair works in the disaster affected areas.
- Priority listing of roads which will be opened first need to be established. Among the most important are the roads to hospitals and main trunk roads.
- Work under construction should be secured with ropes, sandbags, and covered with tarpaulins if necessary.

During Disaster Stage- Response

- Provide assistance to the damage assessment teams for survey of damage to buildings and infrastructure.
- Adequate road signs should be installed to guide and assist the drivers.
- Begin clearing roads. Assemble casual labourers to work with experienced staff and divide into work-gangs.
- Mobilize community assistance for road clearing by contacting community organizations and village disaster management committees.
- Undertake cleaning of ditches, grass cutting, burning or removal of debris, and the cutting of dangerous trees along the roadside in the affected area.
- Undertake construction of temporary roads to serve as access to temporary transit and relief camps, and medical facilities for disaster victims.
- As per the decisions of the District Emergency Operations Center undertake construction of temporary structures required, for organizing relief work and construction of relief camps, feeding centers, medical facilities, cattle camps and Incident Command Posts.
- If possible, a review of the extent of damage (by helicopter) should be arranged for

the field Officer-in-Charge, in order to dispatch most efficiently road clearing crews, and determine the equipments needed.

- If people are evacuating an area, the evacuation routes should be checked and people assisted.
- Identify locations for setting up transit and relief camps, feeding centers and quantity of construction materials and inform DEOC accordingly.
- Take steps to clear debris and assist search and rescue teams.
- Provide sites for rehabilitation of affected population

After Disaster Stage- Recovery and Reconstruction

- Carry out detailed technical assessment of damage to public works.
- Assist in construction of temporary shelters.
- Organize repairs of buildings damaged in the disaster
- Prepare detailed programs for rehabilitation of damaged public works.
- Arrange technical assistance and supervision for reconstruction works as per request.

VI. Department of Transport

Non-Disaster Stage- Mitigation

General Measures for safety from Road Accidents:

- Appoint a team to check the condition of all highways, state and district level and all roads connecting villages to their nearest health centres and to the identified evacuation site.
- Have periodic inspections of the safety and first aid measures installed in vehicles in all blocks
- Make sure that the speed standards need to be strictly followed
- Clearly instruct the public about the Do's and Don'ts by having them written in every vehicle
- Needs of the Special Vulnerable Groups, women, children, elderly and differently abled, need to be catered to in buses
- Keep watch on drunken driving especially in long-route services
- Keep a list of the buses and important vehicles with their timings which run across key roads and check their regularity
- Designate a nodal/liaison officer in the Department who would manage the tasks of transportation in close coordination with the Control Room and all other concerned departments
- Training needs to be imparted to all engineers and key personnel regarding Disaster resistant construction measures
- Work closely with the PWD to inspect the condition of roads, bridges and also of foundation and piers. Roof top materials such as steel and RCC need to be checked for the safety standards. Roads that are damaged, broken, filed with puddle immediately need to be earmarked and repair works should be imparted as early as possible before the occurrence of major accidents
- Placards and billboards giving warnings like 'Accident Prone Zone', 'Go Slow' etc. need to be in place in accident prone to alert the mob

Flood Measures:

- First Aid Kits needs to be installed in all vehicles with proper care of their expiry dates being taken. Medicines that are outdated and may impede a wound sceptic need to be replaced new ones as soon as possible.
- Prior to the development of flood conditions, a Control Room or Emergency Action Centre need to be established under the supervision of key officials
 - The District Control Room should be constantly contacted with to sketch the areas that require additional vehicles and the roads/streets leading to the evacuation sites
 - Contact numbers of all the concerned departments including nearby hospitals, railway stations, municipal staff etc. need to be maintained well in advance
 - Draft an action plan to procure temporary buses and to ensure the availability of technical and medical services
 - Make a note of additional vehicle services of private agencies/NGOs and their contact numbers and ensure the availability of their services if a situation of emergency demands
 - Make arrangements for vehicles that sustain water levels and have efficient fuel efficiency
- Make sure that the transportation to the temporary shelters and evacuation sites are not interrupted in any manner during calamities
- Fuel arrangements at the time of emergency need to be ensured
- Regular maintenance of the available equipment such as cranes, bulldozers, cutters, flood-lights, ropes hammers, axes etc.
- The capacity of vehicles for the safe evacuation of people need to be checked well in advance
- Make an assessment of the public properties at risk in the hazard pone area and take necessary mitigation measures

Before Disaster Stage- Preparedness

- Ensure that the staff are regularly on duty and keep updates of the Control Room and give them final instructions regarding their specific tasks
- Keep effective contact with the District Control Room and extend every possible assistance
- Make effective warning systems in bus stands and seek help of print and electronic media to transfer necessary warning to the
- Assign vehicles fitted with mikes to directly deliver warning to remote hazard-prone areas where the reach of radio and related media isn't prevalent
- Ensure the availability of resources and expert mechanics in place
- Alert the NGOs with additional vehicle services and make a contingency plan in coordination with them. Further disseminate the information of routes to be followed and exact location of the evacuation sites to them
- Check the alternative routes to be followed in the hazard prone areas at the time of emergency with the Police and Homeguard, well in advance
- Prepare a map of the routes to the evacuation sites and the vehicles available to those routes and check their fuel availability and working condition. Make immediate repair work if necessary

During Disaster Stage- Response

- Ensure that the staff are regularly on duty and keep updates of the Control Room and

- give them final instructions regarding their specific tasks
- Keep effective contact with the District Control Room and extend every possible assistance
 - Make effective warning systems in bus stands and seek help of print and electronic media to transfer necessary warning to the
 - Assign vehicles fitted with mikes to directly deliver warning to remote hazard-prone areas where the reach of radio and related media isn't prevalent
 - Ensure the availability of resources and expert mechanics in place
 - Alert the NGOs with additional vehicle services and make a contingency plan in coordination with them. Further disseminate the information of routes to be followed and exact location of the evacuation sites to them
 - Check the alternative routes to be followed in the hazard prone areas at the time of emergency with the Police and Homeguard, well in advance
 - Prepare a map of the routes to the evacuation sites and the vehicles available to those routes and check their fuel availability and working condition. Make immediate repair work if necessary

After Disaster Stage- Recovery and Reconstruction

- Make arrangements for transport for rehabilitation materials such as tents, blankets, food, water etc.
- Make an assessment of the damage recorded in the hazard-hit area and send it to the District Control Room
- Identify the faults in the procedure undertaken and accordingly update the DDMP
- Assist the medical staff with provision of vehicles if needed
- Make arrangements for elderly and differently abled people in the vehicles
- Collect the details of damaged roads and coordinate with the concerned departments for their repair and recovery
- Keep in constant contact with the District Control Room as well as with all other departments and make arrangements for additional vehicles if needed immediately
- Follow the instructions of the District Liaison Officer

VII. Forest Department:

Non-Disaster Stage- Mitigation

- Community Awareness Programmes need to be organized to impart the sense of preparedness to the residents of villages which are located in the fringes of forests
- Earmark the flood-prone villages and the tehsils to which they belong. Further, assist the GP-level DM Committee and youth organizations formed to tackle flood conditions to develop indigenous equipment to mitigate the effects of severe flood through the provision of necessary bamboo and firewood.
- Identify the trees and large bushes that carry the potential risk of catching fire during events of lightning and make necessary measures for felling/cutting them
- Mud-flows and erosion can be checked by planting more trees and sensitizing the need for the same
- Conduction of Vanmahotsav and Chipko Movement in schools
- The DDMC at the Block and Gram Panchayat Level need to be trained in forest fire

<p>prevention, protection and control</p> <ul style="list-style-type: none"> • Inspect frequently the working condition of roads under the Forest Department and causeways, billboards across roadsides and also the rail planks • Depute a <i>Combat Team</i> to check Forest Fires and work out a contingency plan against them under the leadership of the Forest Officer. This can be formulated in the month of May when the heat in Sagar reaches its peak of 46-48° and forest fires become frequent • Check the durability of shelters and evacuation structures made of wood and replace the ones which are worn-out, soggy and have the risk of falling • Maintain the equipment such as axe, tree cutters, ladders, ropes, shovels, dumpers and flood lights etc.
<p><i>Before Disaster Stage- Preparedness</i></p>
<ul style="list-style-type: none"> • Prepare a Department Disaster Management for the District • Seek the help of Akashvani for proper warning dissemination • Mark the areas that are prone to risk and the electric lines that might be damaged due to felling of trees, heavy wind or due to thunder and lightning. Further, assign teams to endure their removal to retain normal life • Proper Communication System should be arranged to know the manpower, forest guard in advance to disseminate information of the disaster in the damage prone areas • Obtain the maps of vulnerable areas from the Home Department • Appoint a Liaison Officer for Disaster Management • Alert the <i>Combat Team</i> and assign specific tasks to the members • Earmark the forest fire zone areas and fortify the alert systems there
<p><i>During Disaster Stage- Response</i></p>
<ul style="list-style-type: none"> • Carry out the response plan as per the DDMP • Exchange information with the DEOC under the leadership of the liaison officer and also make available all resources to the concerned departments
<p><i>After Disaster Stage- Recovery and Reconstruction</i></p>
<ul style="list-style-type: none"> • Make arrangements for water, electricity etc. in the tents and temporary shelters thumped in the forest areas and ensure the safety of the people evacuated • Assist the Home Department in search and rescue if needed • Send teams to check if roads or rails are blocked due to felling of trees and repair any damage if caused • Make an assessment of the damage and send the same to the District Control Room • Do the needful to remove the burnt remains after forest fires and assist in the burial of the corpses of animals if any • Identify the lapses in the procedures followed and accordingly update the Department District Disaster Management Plan

VIII. Department of Power

<p><i>Non-Disaster Stage- Mitigation</i></p>
<ul style="list-style-type: none"> • Identify the places that are regularly prone to short circuits and damage and assign

<p>special teams for repair in such areas</p> <ul style="list-style-type: none"> • Obtain the details of flood vulnerability maps of the district from the Homeguard or Police Department and make immediate provisions for electricity supply in such areas (if there aren't any) in consultation with the District Control Room and the Revenue Department • In all public places and government offices, have in place warning systems regarding the danger posed by some sockets or switches. Have in place a Public Complaint Platform other than usual Complaint Registers in the District Head Office. Herein, people would post complaints regarding broken electric lines, water bodies that are close to lines and may pose danger to life in case of heavy rain • Appoint a team consisting of 5-6 members with a Liaison Officer in charge to address the petitions in the Public Complaint Platform within 24 hours without fail • Sensitize the public about all the Do's and Don'ts • Provide necessary training to the staff and personnel • Maintain a list of all the staff and their contact numbers • Be updated about the proceedings at the District Control Room about the necessity of any repair of lines in the flood-prone areas well in advance
<p><i>Before Disaster Stage- Preparedness</i></p> <ul style="list-style-type: none"> • Make a contingency plan for the department • Formulate a Emergency/Combat Teams for special duties in the tents and temporary evacuation sites during flood • Establish radio communication with DEOC • Check Emergency toolkits • Appoint a Liaison officer of the Department as the Focal Point at the district level and inform all concerned • Carry out a survey to check the condition of power supply in all the tehsils/blocks in the district • Alert the staff and check the attendance. Have in place sufficient number of engineers in the flood prone areas and also ensure the availability of resources and equipment • Have generators in place for the temporary shelters chosen when flood conditions develop • Have in place proper insulation wires, flood light etc. • Map the distance of the remote villages frequently struck by flood from the nearest electric posts and cut down the tree branches and bushes if any that impede the pulling of lines in these routes as early as possible • Cut down the trees that pose risks of falling down in heavy rain and storm which can block transportation and disrupt normal life • Obtain the details of alternative route that can be taken during flood events
<p><i>During Disaster Stage- Response</i></p> <ul style="list-style-type: none"> • Cut off electricity immediately after receiving information about any disaster so as to minimize the damage caused. • Survey the spot and estimate (also help in estimation) the damage caused. • Make available sufficient number of electricians and engineers to repair connection faults, trips in transmission lines, short-circuit if any and broken and damaged electric lines due to heavy rain or thunder and lightning as early as possible • Quickly have warnings installed in danger-zones such water bodies or large puddles

- to which the lines are lying broken until the repair is carried out
- In case of flood, ensure the availability of power in the evacuation sites
 - Assist the authorities to reinstate generators for public facilities such as Hospital, water supply, police stations, telecommunication building and meteorological stations
 - Ensure the proper functioning of the *Combat Team* to dispatch emergency
 - Establish temporary electricity supplies for relief material warehouses
 - Keep regular updates from the DEOC and extend the necessary aid

After Disaster Stage- Recovery and Reconstruction

- Appoint a team to assess the damage caused in each block
- Take steps to ensure speedy repair and restoration of power supply installations
- Repair of damaged poles, transformers and conductors etc. as soon as possible to restore electricity in the district.
- Surveillance for protection of people.
- Share experiences with the department.
- Formulate a checklist and re-prepare an emergency plan.

IX. Animal Husbandry

Non-Disaster Stage- Mitigation

- Maintain a list of the animal vaccination centres, veterinary hospitals, the number of doctors, nurses and other paramedical staff and the details of equipment and vehicles
- Keep the contact numbers of the key personnel
- Make a record of the veterinary dispensaries, veterinary colleges and artificial insemination centres well in advance
- Map the particular details of animals and the nearest veterinary centres in the villages that are prone to flood conditions
- Take special medical care for animals which are diseased and probable of spreading fatal epidemic
- Formulate 'Community Sensitization Teams' comprising of doctors and staff. Conduct interactive sessions with villagers about the need for sanitation, details of cattle diseases, simple measures that can be taken to prevent them etc.
- Seek the help of concerned tehsildars and local authorities for the above-mentioned initiative of Community Sensitization
- Have in place sufficient medicine stocks and other equipment
- Ensure periodic maintenance and sterilization of the medical equipment
- Have special evacuation sites in place for animals and appoint a team to take care of the cleanliness and sanitation of such sites
- Make a list of the vehicles and ensure their fuel efficiency and working condition well in advance
- Approach NGOs/private agencies that can supply additional vehicles or medical aid for animals and keep their contact numbers. Ensure their availability well in advance
- Depute a team to check the filth and epidemic conditions which develop due to animal-meandering on roads and other public places
- Enlist the public properties related to animal husbandry that are damage prone to and

undertake necessary mitigation measures
<i>Before Disaster Stage- Preparedness</i>
<ul style="list-style-type: none"> • Ensure the daily attendance of all the doctors, paramedical staff • Have necessary warning systems in place • Take preventive measures in consultation with the Liaison Officer against probable epidemic • Obtain updates from the District Control Room regarding tents and evacuation that require treatment of animals • Ensure the availability of staff and equipment at all places • Check if the NGOs/private agencies would be available to provide additional medical aide and vehicles at the time of emergency • Work out a contingency Plan for the department • Closely follow the instructions of the Liaison officer and set up a Control Room if possible with effective Communication systems in place • Keep updated about the evacuation sites in coordination with the concerned departments
<i>During Disaster Stage- Response</i>
<ul style="list-style-type: none"> • Make available all the medical staff and equipment in the evacuation sites. • Assist the Police and Homeguard in the safe evacuation of animals.\ • Contact the NGOs/private agencies if further additional medical personnel are needed. • Make provisions for First Aid of animals in the temporary shelters. • Ensure that the emergency vehicles are delivering duty effectively and make available fuel and necessary equipment in them.
<i>After Disaster Stage- Recovery and Reconstruction</i>
<ul style="list-style-type: none"> • Veterinary First Aid centre/stockman sub-centre at most of the areas to me made and all the wings should be ready to combat the situation. • Getting the animals back to their owners and returning the stray ones to Nagar Maha Palika. • Cleaning of temporary shelters.

X. Agriculture Department

<i>Non-Disaster Stage- Mitigation</i>
<ul style="list-style-type: none"> • Identify areas that are likely to be affected. • Arrange for keeping stock of seeds, fertilizer and pesticides. • A pest-and-disease monitoring system should be developed to ensure that a full picture of risks is maintained. • Appoint an inspection team to check the damage of crops due to pest attack. Identify the risk prone areas and ensure the spraying of pesticides in these areas. • A detailed map of crops that are at risk during impending monsoon, the area of coverage need to be made.

- Details of soil pattern and average yield in the vulnerable areas need to be recorded.
- List of farmers e flood prone areas along with the cropping facilities they have, the amount of credit which they owe, their average production a year
- A fertility assessment of the vulnerable cropland, the alternate crops that are suitable for cultivation, fertilizers needed for the same etc. should be carried out in coordination with the Irrigation Department.
- Prepare a Department District Disaster Management Plan.
- Consultation with Agricultural Research Centres with regard to High Yielding Variety of seeds, costs, feasibility of launch and time taken need.\
- An Expert Committee need to be formed to deliberate on the average damage that flood would cause to the croplands and the compensation package that can be developed.
- NGOs, SHG and Microfinance Institutions should be consulted for providing farmers credit to take the necessary mitigation measures.
- At the GP level, the Youth Organizations and farmers must organize themselves, conduct frequent meetings and under the supervision of the Sarpanch, work out a Contingency Plan well in advance.
- The Revenue Department and the respective tehsils can be approached for the necessary aide for the implementability of the above-said plan.
- Keep a list of the equipment at hand, flood lights, RCC cutters, shovels, etc. at can be used during emergency and ensure that they are in working condition.
- Appoint a Liaison Officer to coordinate the action plan of the department in case of disruption of agricultural production.

Before Disaster Stage- Preparedness

- Disseminate information regarding drought conditions to the DEOC.
- Ensure the working out of the Contingency Plan.
- Assist the District Control Room in every possible way.
- Check available stocks of equipment and materials that are likely to be most needed after the disaster.
- Have in place proper warning systems to alert the farmers regarding impending drought conditions and the mitigation measures they can undertake.
- Coordinate with concerned departments of neighbouring districts to make available crops and vegetables whose production might be adversely affected due to the development of drought conditions.
- Have in place temporary godowns to store grains and other yields to prevent their damage during flood.
- Provide information to all concerned, about disasters, likely damages to crops and plantations, and information about ways to protect the same.
- Make provisions for necessary compensation packages with the aid of revenue department and making estimates of the crop damage.
- Make a list of pests and diseases that are likely to attack the crops, the necessary drugs and insecticides required and agencies or extension teams that can fetch additional supply of materials.

During Disaster Stage- Response

- Depute a liaison officer to the DEOC and closely follow his instructions.

- Monitor damage to crops, make quick assessments of the same and devise mechanisms for their prompt recovery in consultation with research experts.
- Put to use all the resources in the most efficient manner send teams if needed to assist the Home Department for relief operations.
- Estimate the requirement of seeds, fertilizers, pesticides and agricultural implements.
- Update the Department Contingency Plan.

After Disaster Stage- Recovery and Reconstruction

- Make a Damage Assessment Report and send the same to the District Control Room and finalize planning agriculture rehabilitation.
- Make necessary provisions for compensation to the affected families and extend every possible aid to help them get to normal.
- Ensure availability of adequate of seeds, seedlings, fertilizers, pesticides and agricultural equipment.
- Help the affected farmers to connect to the agricultural produce market and provide special price concessions to them.
- Make provisions for the suction of water from excessive water-logged areas and send DMTs with necessary equipment if needed.
- Check corruption and ensure proper delivery of compensation packages to the affected farmers.

XI. Irrigation Department

Non-Disaster Stage- Mitigation

- Develop a Department DM Plan.
- Appoint a Liaison Officer to coordinate the action plan.
- Establish a Control Room if conditions of severe drought or flood are likely with effective communication system in place.
- Ensure the availability of suction materials, bandhs in small fields to check mudflows and erosion.
- Obtain details of the area of cropland under irrigation, the equipment in use in the of flood and drought prone areas.
- Make a list of water bodies such as pools, canals, rivers, dams that can be used for irrigating farmlands and their water levels during each period of the year.
- Obtain the details of the relief force of the Police and Homeguard and the swimmers available.
- Formulate an Expert Team comprising of Agriculture Experts who can estimate the damage and work out a necessary Contingency Plan.
- Send inspection teams to know the details of dams, canals and analyse any repair if needed.
- Maintain a list of resources and equipment.
- Have a check on dams that posit damage and carry out repair and maintenance if needed, in coordination with PWD.

Before Disaster Stage- Preparedness

- Ensure that the all the staffs are on duty.

- Form a Technical to know updates about the conditions in reservoirs and canals.
- Obtain daily Weather forecasts from Weather Department and arrange the warning systems.
- Send alerts to the villages about the dams that pose potential risks of overflow and do the needful under the instructions of the Liaison Officer. Warn the people living in the low-lying areas to shift to safer zones as soon as possible and make necessary arrangements.
- Establish proper communication with the District Control Room and other concerned departments.
- Ensure efficient management of flood forecasting and warning centres and improve procedure of flood forecasts and intimation to appropriate authorities.
- Make sure that alternative sources of irrigation are in place in case dams are damaged.
- Update the DEOC regarding the fluctuating water levels in the dams that pose danger.
- Extend all possible assistance in the task of relief operations

During Disaster Stage- Response

- Identify and mark damaged water pipelines and contaminated water bodies and inform disaster victims against using them.
- Construct temporary toilets in relief camps and mobile toilet facilities for affected areas. Ensure sanitation and hygiene of the relief camps and he affected areas.
- Ensure water transportation in coordination with Transport department.
- Put to use the suction pipes, dewatering pumps, bulldozers, generators and assist in search and rescue operations if needed.
- Have large woods and broken pipes removed from the water-logged areas to ensure uninterrupted flow of water.
- Make provisions for drinking water in the evacuation sites if needed.
- Provide sufficient number of boats and personnel to combat the clogged areas and reduce the crop damage.
- Disseminate warning

After Disaster Stage- Recovery and Reconstruction

- Extend manpower and resources to Homeguard and Police to carry out search and rescue operations.
- Make estimates of the damage to the irrigated land, the loss of agricultural property, the families affected and send the assessment report to the District Control Room.
- Restore drinking water supplies for the affected areas.

XII. Fire Department

Non-Disaster Stage- Mitigation

- Imparting proper training to the employees keeping in mind their safety.
- Periodic inspection and maintenance of the equipment and procuring new ones as and when necessary.
- The blueprint of any building/house should not be accepted without proper Fire Safety measures.
- Spread awareness among people about their safety and mitigation measures.

<ul style="list-style-type: none"> • Deliver necessary safety measures to combat fire in all public places.
Before Disaster Stage- Preparedness
<ul style="list-style-type: none"> • Work out a contingency plan under the coordination of the Fire Officer. • Training of people on how to react to emergency situations. • Train staff and Raj Mistri's about latest Fire Fighting techniques
During Disaster Stage- Response
<ul style="list-style-type: none"> • Find a safe way to save people trapped in fire in a house/ building/ aero plane/ train/ industry/ boiler etc. • Get control over fire and minimize damage in case of an explosion. • Control the situation in case of gas leak or leakage of some dangerous chemical.
After Disaster Stage- Recovery and Reconstruction
<ul style="list-style-type: none"> • Help other departments in search & rescue and estimation of damage. • Share experiences with the department. • Training of employees about new disasters (related to fire) that can occur. • Formulate a checklist and re-prepare an emergency plan.

Department of Industrial Health and Safety

Non Disaster Time –
<ul style="list-style-type: none"> • Designate one Liaison Officer in the Department as the Disaster Management Focal Point at district level. • Ensure all possible steps for the security of manpower, implements, stock, installations/factories etc. • Prepare listing and locations of industries and establishments for possible sourcing of relief material during disasters in the district. • Ensure training on preparedness programmes to be adopted at different levels for all manpower employed in factories and establishments in disaster vulnerable areas. • Issue disaster management guidelines to all the industries and ensure on-site and off-site plans for all industries. • Prepare and disseminate guidelines for the labor security and safety. • Prepare and implement rules and regulations for industrial safety and hazardous waste management. • Support the State Pollution Control Board to enforce the law for preventing environmental disaster in chemical industry or industries emitting toxic gases and effluents. • Issue detailed instructions to the employees about their duties and responsibilities in precautionary, disaster and post-disaster stages of normal disaster. • Prepare and disseminate public awareness material related to chemical accidents. • Prepare & implement department's mitigation plan for the district
During Disaster
<ul style="list-style-type: none"> • Evacuation of the workers from the Industrial area vicinity • Request industries to provide emergency relief material such as food products, temporary shelter, medicines and medical equipment and search & rescue equipment. • During any industrial disaster, respond as per the disaster management plan of the respective industry or as per the guidelines for the specific hazard involved in the

event.

After Disaster

- Take steps to plan for rehabilitation of industries adversely affected by disasters.

C2.2 Hazard Specific SOPs for designated Departments and Teams

Hazard specific SOPs and checklists for all concerned departments, authorities, designated disaster management teams and committees and the sub committees at district and sub district level, will be prepared and maintained.

Flood

Non-Disaster Stage:

- Set in place Control Rooms in all concerned line departments and ensure the attendance of the staff on duty.
- Earmark dams that may overflow and clearly estimate the villages that are likely to submerge or suffer. Seek the assistance of Architecture Experts, PWD and Revenue Department to take the necessary measures and install the necessary safeguards In such dams as early as possible.
- Appoint an expert team to regularly check the level of the water bodies that pose potential danger.
- Map the water levels that can cause water-logging and cause vast damage.
- Provide proper training to staff and personnel of all cadres; Civil Defence, Homeguard, Police, army etc. Also conduct mock drills at the GP and block-level to improve community response.
- Conduct sensitization programmes to create awareness about the benefits to life and property due to proper mitigation and safe evacuation measures.
- Prepare zonal assessment maps of vulnerability and alert rescue personnel in the flood prone villages.
- Make provision for special evacuation sites for animals and appoint teams to take care about the sanitation of the place to check on the outbreak of any epidemic.

Before Disaster Stage:

- Arrange stocks of food, relief materials, first aid-kits, HYVs, fertilizers well in advance have in place sufficient staff engaged in these works in all the concerned departments.
- Have effective warning systems in place

Ejection of Poisonous gases from Dry Tube wells:

Non-Disaster Stage:

- Establish a tool centre in each tehsil with its headquarters at the central town of Sagar. These centres should make available the sufficient number of neoprene diving suits, oxygen-cylinders, drillers, low-pressure, hose, and scuba divers.
- Appoint a team of 5-10 members well trained in the task of scuba-diving.
- Have in place sufficient number of equipment, oxygen cylinders, diver suits, ropes, pulleys and maintain them properly.
- Create awareness among the masses regarding the potential danger due to drying up of tube wells and the death that may result due to the ejection of poisonous gases once the cleaning tasks of such wells are undertaken.
- At least one member of the community should be trained in basic pump maintenance and repair.
- Tools and spares should be available to the community and maintained regularly paying particular attention to the replacement of washers, seals and valves.
- Protective fence need to be built if there are animals in the area.
- The lowering of the wells need to be done as per specifications such as within the prescribed non-vertical limits, placing of suitable gravel and sand-pack etc.
- The development of compressor should be done in the range of 7.9 and 9 cubic metre/minute Else the permission of Engineer-in-charge need to be sought.

Before Disaster Stage:

- Identify a team of most trained and experienced personnel to accomplish the task of getting to the depth and cleaning the well or of rescuing a person trapped in such wells and alert them regarding the work.
- Ensure that the equipment are all in working condition.
- Develop an effective Incident Command System.
- Alert the local community to extend every possible help.
- Work out a contingency plan or action schema.
- Maintain effective communication with tool centres and district headquarters/control room.

During Disaster Stage:

- Identify the depth below which poisonous gases are ejected. This can be done by lowering a burning lantern into the pit/well. The point below which the lamp blows off is the point where oxygen supply seizes.⁹
- Make available the necessary equipment and personnel for the task.
- Work out the Incident Command System with the Incident Commander coordinating the proceedings.
- Avoid panic.

After Disaster Stage:

- Provide first aid to the person(s) ensuring smooth breathing.
- Provide artificial breaths or ventilation if needed.
- Consult the nearest medical officer in case of severe choking due to poisonous gases.

C 3 Financial Provisions for Disaster Management

During events of disasters, financial aid is sought by each department to carry out the necessary SOPs. These funds are established by the State Government and their efficient and effective management are ensured through the District authorities. The following funds are recommended:

C3.1 District Disaster Management Fund:

This will basically cover the disaster response, relief and rehabilitation part. Every ministry or Department of the Government of India ought to make provisions in its annual budget to carry out the activities set out in the district disaster management plan.

C3.2 District Disaster Mitigation Fund:

This will basically cover the disaster mitigation and preparedness activities. The financial needs to carry out mitigation measures at the block and village level also can be carried out with this funding provision.

NGOs, charitable trusts, private agencies and individuals

Besides the governmental funds to carry out disaster mitigation, preparedness, prevention, response, relief, recovery and rehabilitation measures, there are non-governmental organizations, trusts and individual philanthropists who would extend financial aide at the time of emergency.

C 4 Coordination mechanisms with other stakeholders

C 4.1 Mapping of stakeholders in the District

⁹This is a conventional way of knowing the limit of safety in the depp wells, which is prevalent among the villagers.

Mapping of stakeholders is essential in formulating an effective DM Plan. The stakeholders involved are discussed in the following sections.

C4.2 Non-Governmental Organizations and Community Based Organizations:

Sources report that there aren't NGOs which attach themselves with the task of Disaster Management in coordination with the government, however, quite a lot of them function near to the villages which are hazard prone and extend support at the time of emergencies. These can be encouraged to assist the Government in DM activities. Further it is suggested that DM Committees must be formed among NGOs as well which carry out mitigation and preparedness measures in consultation with expert research institutes.

There are however a few NGOs that supply materials to the relief centres such as clothes, candles, raincoat, tarpaulin, plates etc. Following is the list of the NGOs/other organizations that supply such materials during flood in Sagar:

- Indian Medical Association
- Bundelkhand Petrol Pump, Sagar
- Lines Club, Sagar
- Mahila Club Samiti, Sagar
- Radheshyam Bhawan Janjagaran Samiti, Sagar
- National Integrated Medical Association, Sagar
- UNICEF Bhopal
- Care India, New Delhi
- Red Cross Society

C 4.1.3 Religious Institutions

Sagar is known for a large number of temples and ancient forts dating back to the British Period, which are built upon large spans of area. The Phulnath Temple in Bhapel in the Sagar tehsil and Chandika Temple in Baleh village in Rehli can serve as relief centres at the time of emergencies for large number of people.

C 4.1.4 Academic Institutions:

Many institutes in India strive towards Disaster Management, some of them established in the backdrop of certain historic disasters which shook the base of the political set up of the country.

- **National Information Centre of Earthquake Engineering- IIT Kanpur, U.P**

It is sponsored by HUDCO, Telecom Commission, Railway Board, Ministry of Agriculture, Department of Atomic Energy and AICTE. It undertakes the task of information dissemination regarding earthquake and carrying out capacity building.

Further reference: <http://nicee.org>

- **National Centre of Disaster Management, New Delhi**

This is set up in the Indian Institute of Public Administration (IIPA) with the objective of providing training programmes and organizing research activities in various aspects of Disaster Management/

NCDM, IIPA, Indraprastha Estate
Ring Road, New Delhi
Fax: (+91-11)331-9954
Further reference: www.ncdm-india.org

- **Disaster Management Institute, Bhopal**

This was formulated after the Bhopal Gas Tragedy and offers training, research and consultancy services concerning prevention, mitigation and management of disasters.

Kachnar, Paryavaran Parisar,
E-5 Arera Colony, Bhopal
PB No. 563 Bhopal-462016, MP (India)
Tel: +91-755-2466715, 2461538, 2461348,
293592, Fax: +91-755-2466653,
Email: dmi@dmibhopal.nic.in

- **Gujarat State Disaster Management Authority**

It is registered under the Societies Registration Act

C 4.1.5 International Humanitarian Organization:

There are many international agencies that support government all over the world at the time of emergency. These agencies as per their mandates support during the different phases of disaster management cycle. Following are listed a set of such organizations along with their contact details.

1. International Federation of Red Cross and Red Crescent Society

<http://www.ifrc.org/>

The IFRC comprises of National Red Cross or Red Crescent Societies, the International Federation of Red Cross and Red Crescent Societies (the Federation), and the ICRC. It is the permanent liaison body of the National Societies and organizes international disaster response in support of the National Societies and helps them in developing new structures and programs.

2. Lutheran World Federation

<http://www.lutheranworld.org/>

This body specializes in emergency relief linked to disaster preparedness and assists nations to strive for sustainable development.

3. The Office of US Foreign Disaster Assistance (OFDA)

http://www.usaid.gov/our_work/humanitarian_assistance/disaster_assistance/

OFDA provides non-food assistance in response to international crises and disasters. It strives towards saving lives, alleviating suffering and reducing the socio-economic impact of reducing natural and man-made disasters worldwide.

4. United Nations Office for the Coordination of Humanitarian Affairs

<http://ochaonline.un.org/>

It mobilizes and coordinates the collective efforts of the international community to meet the needs of those who are victims of disasters and emergencies.

5. Action Against Hunger (AAH)

<http://www.aah-usa.org/>

This body carries out the task of providing emergency programs in nutrition, health, water and food security and also disaster preparedness programs to prevent humanitarian crises.

C 4.2 Responsibilities of the Stakeholders

The various stakeholders involved in Disaster Management at the district level are:

- District Administration
- Local community leaders
- Fire Brigades functioning voluntarily
- Housing cooperatives
- Religious organizations
- School teachers
- Hospital officials/personnel
- Local builders/craftsmen
- Community groups (youth, women, farmers, SHGs, etc.)
- Voluntary Organizations
- NCC/NSS cadres
- NGOs and private securities

Local communities can play a great role in the sequence of disaster planning. The risks and resources need to be assessed on local levels of protection. The communities can carry out local evacuate on procedures taking into consideration all points. What is needed, is the adoption of a multi-hazard approach that can help develop protection against potential hazards.

Various formal and non-formal organizations have played a crucial role in disaster reduction. These have significant links with grassroots development and can play complementary roles with other established organizations. Further, the role of school teachers, social-welfare workers and community groups should not be underestimated. Most of the relief camps are established in schools and religious institutions.

The involved stakeholders thus can assist the Police, Homeguard and Civil Defence in the search and rescue and relief operations and should extend due cooperation in every possible manner.

C 5 Inter- District Coordination Mechanisms – [Standard Operating Procedures / Protocols]

As of date an explicit inter-district mechanism for disaster management isn't established. However the following institutional measures and action plan are recommended.

- i) Establishment of a Disaster Management Authority at the Divisional Level with its Headquarters in Sagar comprising of the following members:
 - Collectors of the five districts, Sagar, Chattarpur, Panna, Damoh and Tikamgarh comprising the Sagar Division
 - I.G, Homeguard
 - Divisional Commandant, Homeguard, Sagar Division
 - CMOs of the five districts
 - CEOs, Zilla Panchayat
 - Superintendent of Police of the five districts
- ii) A divisional level Control room to be set at the Homeguard, Divisional Office, Peeli Kothi, Near Jawaharlal Nehru Police Academy, Sagar
- iii) Committees being set up under the supervision of the respective Collectors at the district levels.

C 6 Intra- District Coordination Mechanisms

- The recommended “integrated disaster management plan” follows ‘Top to Bottom’ approach i.e. the communities are the first one to response.
- Then there are disaster management committees on gram panchayat level and block level up to the district level.
- On each stage, the nodal contact people are appointed who will ensure the adequacy of resources in dealing with disasters.
- The roles and responsibilities of various officers are clearly mentioned upon activation of the ICS in the Response planning section.

It is recommended that the nodal agencies involved in disaster management are set up at each level; namely district, block, urban area and gram panchayat with top-to bottom approach as the guiding principle. This means that the local community which are the first responders to any disaster situation need to be focused. Sensitization programmes, awareness campaigns, CBOs, training and capacity building, youth organizations to tackle disasters etc. need to be encouraged and actively implemented.

The Incident Command System in section C1.3.1 clearly specifies the roles and responsibilities of officers of various cadres.

C 7 Dissemination of DM Plan

After the DDMP is approved by the SDMA, the Sagar DDMA will be responsible for the dissemination of the plan.

The DDMP must be disseminated at three levels:

- The NDMA, multilateral agencies, state line departments and defense services.
- The district administration and concerned departments.
- Through mass media to the general public.

Sources of media would include newspapers, television, local channels, radio and other dailies.

C 7.1 Plan Evaluation

The evaluation of DDMP would be done by the District Disaster Management Advisory Committee in collaboration with the DDMA. This is done to determine the adequacy of resources and coordination mechanism of various agencies and concerned line departments, role of NGOs, community participation etc. The shortcomings of the plan in terms of organizational structure, technological changes and response mechanisms are identified and rectified by the board members.

C 7.2 Plan Update

The District Disaster Management Plan need to be updated every year according to the available resources, the advancements in technology, the training imparted, personnel and other staff appointed and the issues of coordination faced each year. It is thus a living-document and the assessment of the adequacy of the plan's procedure becomes a necessity. It is recommended that an Annual Meeting presided over by the Collector, to evaluate the effectiveness of the action plans followed, the budget adequacy, the organizational shortcomings etc. be conducted. All concerned line departments can participate in the meeting and address the specific issues faced.

C 8 Annexure

Table 1.1 Block-wise area of Sagar district

Sl. No	Block	Area (sq. km)	No of villages
1	Sagar	874.64	152
2	Jaisinagar	731.96	145
3	Rahatgarh	816.12	198
4	Rehli	502.61	116
5	Garhakota	373.38	100
6	Deori	812.47	223
7	Kesli	696.39	164
8	Bina	687.17	156
9	Khurai	751.17	343
10	Malthone	680.79	173
11	Banda	807.22	164
12	Shahgarh	488.65	107

Source: Land Records, Sagar, 2012

Table 1.2 The development block-wise details of health centres in Sagar district

Name of development block	CHCs	PHCs	Sub-health centres	Sector-PHCs/mini-hospitals
Banda	1	2	24	5
Rehli	1	4	26	6
Shahgarh	1	1	17	4
Deori	1	3	22	5
Agasaud	1	1	20	5
Malthone	1	4	19	4
Khurai	1	1	20	4
Rahatgarh	1	5	23	5
Jaisinagar	1	1	23	5
Shahpur	1	3	30	6
Kesli	1	2	21	4
Total	11	27	245	53

Table 1.3 Blockwise details of schools and colleges in the district

S.No.	Block	HighSchool	Hr.Sec	ITI	Polytechnic	College
1	Banda	11	4	0	0	1
2	Bina	20	5	1	0	2
3	Deori	13	6	0	0	1
4	Jaisinagar	7	2	0	0	0
5	Kesli	10	4	0	0	1
6	Khurai	9	6	1	1	1

7	Malthone	10	5	0	0	1
8	Rahatgarh	17	7	0	0	1
9	Rehli	18	8	0	0	2
10	Sagar	28	19	0	2	3
11	Shahgarh	10	4	0	0	1

Source: Education Department, 2012

Table 1.4 Micro, small and large scale industries in the district of past six years

Year	Micro		Small		Large	
	No. of units	Workforce	No. of units	Workforce	No. of units	Workforce
2006-07	507	957	1	84	-	-
2007-08	626	1206	1	19	-	-
2008-09	695	1245	-	-	-	-
2009-10	582	1202	4	62	-	-
2010-11	563	1574	1	22	-	-
2011-12	600	1429	4	45	2	535

Table 2.1 Tehsil-wise details of flood affected villages

	Sl. No.	Affected villages	Population affected
Rehli	1	Nivadi	340
	2	Madla	190
	3	Chuhra	417
	4	Kudayi	280
	5	Madhiya	410
	6	Padriya	149
	7	Ratanpura	607
	8	Gurhakala	411
	9	Achalpura	110
	10	Sakri	3290
	11	Rehli Khas	6482
Garhakota	12	Bichiya	620
	13	Mothar Nayak	330
	14	Sanjra	750
	15	Basari	710
	16	Belayi	566
	17	Charkhari	400
	18	Ghoghra	605
	19	Kudayi	220
	20	Dattapura	240
	21	Magardha	362

	22	Khajira	219
	23	Garhakota	7420
Sagar	24	Moodra	201
	25	Berkhedi Madiya	190
	26	Padriya	1470
	27	Gosra	280
	28	Gadhauri Bujurg	190
Deori	29	Silarpur	65
	30	Sasna	52
	31	Gaurjhamar	2117
	32	Madi Jamuniya	711
	33	Deori Kala	130
Kesli	34	Khakriya	567
	35	Nayanagar	472
	36	Mahka	249
	37	Pipriya	199
Banda	38	Sardayi	277
	39	Jhagri	490
	40	Salaiya (Behrol)	177

Table 2.1.1 Tehsil-wise details of villages partially affected by flood

	Sl. No	Affected Villages	Population affected
Rehli	1	Simriya Nayak	506
	2	Sonpur	306
	3	Parasayi	321
Garhakota	4	Berkheri	49
	5	Berkherikala	406
Kesli	6	Mara Madhav	421
	7	Deori Kala	131
	8	Doma	561

Table 2.1.2 Rainfall measuring centres in Sagar

Sl No.	Rainfall measuring centre
1	Sagar
2	Jaisinagar
3	Rahatgarh
4	Bina
5	Khurai
6	Malthone

7	Banda
8	Shahgarh
9	Garhakota
10	Rehli
11	Deori
12	Kesli

C 8.3 Inventory of Resources

Table 3.1

1. SEARCH AND RESCUE

i) Cutters and Spreaders

Category	Details	Number	Govt.,Pvt	Nodal person
CUTTERS	Gas Cutters	-	Govt.	
	Cold Cutters	-	Govt.	
	Bolt Cutters (Shears)	-	Govt.	
	Electric Drill	-	Govt.	
	Circular Saw with Diamond Blade (Electric)	-	Govt.	
	Chipping Hammer	-	Govt.	
	Chain Saw-Diamond	-	Govt.	
	Chain Saw-Bullet	-	Govt.	
	Pneumatic Chisel	-	Govt.	
	Cutters-Battery	-	Govt.	
SPREADERS	Spreaders-Hydraulic	-	Govt.	
	Spreaders – Battery	-	Govt.	

ii) Light Equipment and Lighting Arrangements

LIGHT EQUIPMENTS (search and rescue)	Sledge Hammer	-	Govt.	
	Heavy Axe	-	Govt.	
	Two handled cross cut-saw	-	Govt.	
	Chain tackle	-	Govt.	
	Single sheave snatch block	1	Govt.	District Commandant, Homeguard
	Smoke Blower and Exhauster	-	Govt.	
	Set of rope tackle (3 sheave-2 sheave)	1	Govt.	District Commandant, Homeguard
	Gloves-Rubber, Tested upto 25,000 volt	-	Govt.	

	Stretcher Harness (set)	1	Govt.	District Commandant, Homeguard
	Scaffold poles for sheer legs	-	Govt.	
	Jumping Cushions	-	Govt.	
	Rescue Rams	-	Govt.	
	Glass Remover (Punch Mark)	-	Govt.	
	Crescent/adjustable wrenches	-	Govt.	
	Slotted Screwdrivers	-	Govt.	
	Traps 4*4 meters	-	Govt.	
	Blankets	-	Govt.	
	Lifting tackle (3 ton)	-	Govt.	
	Chains - 6 feet (3 ton lift)	-	Govt.	
	Aspects Blanket	-	Govt.	
	Soaking kit	-	Govt.	
LIGHTING ARRANGEMENTS	Inflatable Light Tower	-	Govt.	
	Light Mast	-	Govt.	
	Search Light	-	Govt.	
	Electric Generator (10kV)	-	Govt.	

iii) *Lifting Equipment*

i) *Heavy Engineering Equipment*

HEAVY ENGINEERING EQUIPMENTS	Trucks - Aerial Lift)		Govt.	
	Bulldozers wheeled/chain		Govt.	
	Dumper	2	Govt.	
	Earth movers	2	Govt.	

Category	Details	Number	Govt.,Private	Nodal Person
LIFTING EQUIPMENTS	Air-Lifting Bags (Different Capacity)/Tools	-	Govt.	
	Jack with 5 ton lift	-	Govt.	
	Iron shod levers, 10ft. Long	-	Govt.	

	Cranes - Heavy Duty, Fork type		Govt.	
	Tipper - Heavy Duty		Govt.	
	Recovery Vans Beam Type		Govt.	
	Snow Beeters wheeled		Govt.	
CRITICAL SUPPLIES			Govt.	
SKILLED HUMAN RESOURCE	Search and Rescue Teams for Collapsed Structures	1	Govt.	District Commandant, Homeguard
	Search and Rescue Teams with canines		Govt.	

2. FLOOD RESCUE

Category	Details	Number	Govt.,Private	Nodal Person
SPECIALIZED FLOOD/RESCUE EQUIPMENTS	Rescue back boards	-	Govt.	
	Diving suit	-	Govt.	
	Under water BA set	-	Govt.	
	Lifebuoy	4	Govt.	District Commandant, Homeguard
	Life Jackets	4	Govt.	District Commandant, Homeguard
	Basket Stretcher	-	Govt.	
	Pneumatic Rope Launcher	-	Govt.	
RESCUE BOATS	Inflatable boat (12 persons)	-	Govt.	
	Fibre boat (12 persons)	-	Govt.	
	Motor boats	-	Govt.	
	Motor Launch	-	Govt.	
	Country Boats	-	Govt.	

CRITICAL SUPPLIES		-	Govt.	
SKILLED HUMAN RESOURCE	Divers Teams	-	Govt.	
	Search and Rescue Teams for Flood	-	Govt.	

3. FIRE FIGHTING

i) Protective Equipment, Breathing Apparatus Set, Ladder and Fire Extinguishers

Category	Details	Number	Govt.,Private	Nodal Person
PROTECTIVE EQUIPMENTS - PERSONAL		-	Govt.	
PROTECTIVE EQUIPMENTS - SPECIALIZED	Suit - fire entry	-	Govt.	
	Suit - fire proximity	-	Govt.	
	Suit - fire approach	-	Govt.	
	Suit - NBC	-	Govt.	
	Clothing - Chemical protective (A,B,C)	-	Govt.	
BREATHING APPARATUS	Breathing apparatus - self contained	-	Govt.	
	Breathing Apparatus - Compressor	-	Govt.	
FIRE FIGHTING EQUIPMENTS		-		
PUMPS	Pump - high pressure, portable	-	Govt.	
	Pump - floating	-	Govt.	
LADDER	Extension Ladder	1	Govt.	
FIRE EXTINGUISHERS	ABC Type	-	Govt.	
	CO2 Type	-	Govt.	
	Foam Type	-	Govt.	
	DCP Type	-	Govt.	
	Halons Type	-	Govt.	

ii) Fire/Rescue Tenders and Skilled Human Resource

Category	Details	Number	Govt.,Private	Nodal Person
----------	---------	--------	---------------	--------------

		r	e	
FIRE/RESCUE TENDERS	Fire Tender	181	Govt.	
	Foam Tender	-	Govt.	
	Rescue Tender	-	Govt.	
	Control Van	-	Govt.	
	Hydraulic Platform	-	Govt.	
	Tum Table Ladder	-	Govt.	
	DCP Tender	-	Govt.	
	Hazmat Van	-	Govt.	
	B. A. Van	-	Govt.	
CRITICAL SUPPLIES	Fire Fighting Foam	-	Govt.	
	Dry Chemical Powder	-	Govt.	
	Halons	-	Govt.	
SKILLED HUMAN RESOURCE	Oil Installation - fire fighting team	-	Govt.	
	High Rise Buildings - fire fighting team	-	Govt.	
	Ports - fire fighting team	-	Govt.	
	Aviation - fire fighting team	-	Govt.	
	Mines - fire fighting team	-	Govt.	
	Thermal Power Plant - fire fighting team	-	Govt.	
	Nuclear Power Plant	-	Govt.	

4. HEALTH SERVICE

Category	Details	Number	Govt.,Private	Nodal Person
EQUIPMENTS	Spine boards	-	Govt.	
	Stretcher normal	-	Govt.	
	Stretcher medical evacuation	-	Govt.	
	Incubators for adults	-	Govt.	
	Incubators for children	-	Govt.	
	First aid kits	6	Govt.	
	CT Scan	-	Govt.	
	MRI	-	Govt.	
PORTABLE EQUIPMENTS	Portable oxygen cylinders	-	Govt.	
	Portable ventilators	-	Govt.	
	Portable X-rays	-	Govt.	
	Portable ultrasound	-	Govt.	

	Portable ECG	-	Govt.	
	Portable suction unit	-	Govt.	
LIFESAVING EQUIPMENT	Mechanical ventilators	-	Govt.	
	Defibrillators	-	Govt.	
MOBILE UNITS	Mobile OT unit	-	Govt.	
	Mobile blood bank	-	Govt.	
	Mobile lab service	-	Govt.	
	Mobile hospital	-	Govt.	
	Mobile medical van	-	Govt.	
HYGIENE	Water filter	-	Govt.	
	Water tank	10	Govt.	
	Reservoirs treatment tank	-	Govt.	
SANITATION		-	Govt.	
CRITICAL SUPPLIES	Anti-snake venom	-	Govt.	
	Halogen tablets	-	Govt.	
	Bronchodilators	-	Govt.	
	Vaccines	-	Govt.	
	Chlorine tablets	-	Govt.	
SKILLED HUMAN RESOURCE	General physician	4	Govt.	
	Trauma specialist	-	Govt.	
	Surgeon	-	Govt.	
	Anaesthetist	-	Govt.	
	Gynaecologist	-	Govt.	
	Radiologist	-	Govt.	
	Paramedics	-	Govt.	
	Lab technicians	-	Govt.	
	OT assistants	-	Govt.	
	Medical first responders	3	Govt.	

5. SHELTERS

Category	Details	Number	Govt.,Private	Nodal Person
TENTS	Tent 80 Kgs	-	Govt.	
	Tent 40 lbs	-	Govt.	
	Tent MK - III Private	-	Govt.	
	Tent Store	-	Govt.	
	Tent extendable 4 meters	-	Govt.	

SHEETS	Tent extendable 2 meters	-	Govt.	
	Tent Arctic	-	Govt.	
	Tarpaulin	-	Govt.	
	Plastic Sheet	-	Govt.	
	Poythene Sheet	-	Govt.	
PRE - FAB SHELTERS	Corrugated Galvanized Iron sheet	-	Govt.	
	Polypropylene Corrugated Unifold shelter	-	Govt.	
FRP Shutter		-	Govt.	
		-	Govt.	
CRITIC AL SUPPLI ES		-	Govt.	
SKILLED HUMAN RESOUR CE		-	Govt.	

6. TRANSPORTATION

Category	Details	Number	Govt.,Private	Nodal Person
LIGHT VEHICLE S	4 wheel drive vehicle	21	Govt.	
	Matador	1	Govt.	
MEDIUM VEHICLE S	Truck	2	Govt.	
	RTV	-	Govt.	
	Mini Bus	-	Govt.	
HEAVY VEHICLE S	Bus	-	Govt.	
	Tractor	5	Govt.	
	Trailer	-	Govt.	
	Heavy truck	1	Govt.	
SPECIAL VEHICLES	Light Ambulance Van	-	Govt.	
	Medium Ambulance Van	-	Govt.	
	Equipment Towing Tender	-	Govt.	
	Mobilization Truck	-	Govt.	
	Water Tanker - Medium capacity	5	Govt.	
	Water - Large capacity	-	Govt.	
CRITIC AL SUPPLI ES		-	Govt.	

SKILLED HUMAN RESOURCE		-	Govt.	
-------------------------------	--	---	-------	--

7. TELECOMMUNICATION

Category	Details	Number	Govt.,Private	Nodal Person
WIRELESS SYSTEMS	VHF Sets Static		Govt.	
	VHF Sets Mobile		Govt.	
	UHF Sets Static		Govt.	
	UHF Sets Mobile		Govt.	
	Walkie Talkie Sets		Govt.	
	HF Sets Static		Govt.	
SAT PHONES	Mini - M3		Govt.	
	V - SAT		Govt.	
	INMARSAT		Govt.	
MOBILE PHONES	Mobile Phone GSM		Govt.	
	Mobile Phone CDMA		Govt.	
GPS	GPS Hand Sets		Govt.	
VIDEO SYSTEMS	Video Phone Set		Govt.	
	Video Camera Digital		Govt.	
	Video Camera Beta		Govt.	
	Camera Digital		Govt.	
	Video Camera DVD		Govt.	
CRITICAL SUPPLIES			Govt.	
SKILLED HUMAN RESOURCE	HAM Radio Operators		Govt.	

Category	Details	Number	Govt.,Private	Nodal Person
C R I T I C A L	Decontamination solution	-	Govt.	

8. NUCLEAR BIOLOGY AND CHEMICAL

Category	Details	Number	Govt.,Private	Nodal Person
NBC SPECIALIZED EQUIPMENTS	Air Sampler - battery operated	-	Govt.	
	NBC face mask	-	Govt.	
	Body bags	-	Govt.	
	C. D Kit danger make	-	Govt.	
	Monitor - for chemical agents	-	Govt.	
	Capping kit - for chlorine leak	-	Govt.	
	Containers of AFFF	-	Govt.	
	Containers of soda ash and hydroxide	-	Govt.	
	Monitor - for contamination	-	Govt.	
	Decontamination gears	-	Govt.	
	Direct reading dosimeter	-	Govt.	
	Distress signal unit	-	Govt.	
	Emergency response guide book	-	Govt.	
	First aid kit NBC type A	-	Govt.	
	First aid kit NBC type B	-	Govt.	
	Flame ionization detector	-	Govt.	
	GM survey meter	-	Govt.	
	High visibility vest	-	Govt.	
	Leak storing device	-	Govt.	
	Leak tester for B.A set	-	Govt.	
	LEL Meter	-	Govt.	
	Mini rad meter	-	Govt.	
	Multi gas detector with cut gum bottle	-	Govt.	
	Non sparking brush, brooms shovels	-	Govt.	
	Non - sparking tool	-	Govt.	
	PH meter	1	Govt.	
	Pipe squeezer	4	Govt.	
	Plastic Drums	-	Govt.	
Detector kit - for poison in water	-	Govt.		
Portable alpha monitor	-	Govt.		
Portable decontamination apparatus	-	Govt.		
Safety line with chemical resistant	-	Govt.		
Safety touch	-	Govt.		
Teletector	-	Govt.		

	Lodate tablets	-	Govt.	
SKILLED HUMAN RESOURCE	Search and Rescue Teams for NBC Disasters	-	Govt.	

C 8.1 Important Contact numbers

In this section, contact numbers of all the key officials at the district/tehsil/block level embracing all concerned departments such as Revenue, Forest, P.W.D, Police, Homeguard, Irrigation, Development Plans etc. are tabulated.

DC Office and Revenue Department

Sl. No	Name of the Official	Designation	Office	Residence	Mobile
1	Dr. E Ramesh Kumar	Collector, Sagar	221900 222070	222622	9425394888
2	Shri. Pramod Verma	Superintendent of Police, Sagar	267745	267700	9752271777
3	Shri. Nand Kumaram	CEO, Zilla Panchayat	222944	22104	9425163426
4	Shri. P S Jatav	Upper Collector	223308	223419	9425369386
5	Sushri. Preethi Maithil IAS	SDM, Bina	224994	222121	9977742118 9301077588
6	Shri. Dilip Mandavi	Joint Collector, Sagar	224543	225391	9425474862
7	Shri. Bhupendra Goyal	SDM, Khurai	220716	-	9926773455
8	Shri. Ravindra Chaukse	City Magistrate	224578	-	9826163083
9	Shri. Mahendra Singh	SDM, Rahatgarh	-	-	9893800307
10	Shri. Narayan Singh Thakur	SDM, Banda	253100	-	7898285777
11	Shri. V P Dwivedi	SDM, Deori	250094	-	9425158462
12	Shri. Anand Kopria	SDM, Rehli	256322	-	9425158461
13	Shri. Santhosh Srivastav	Manager, Public Works Guarantee	-	-	9425474534
14	Shri. Roshan Rai	Deputy Collector, Sagar	-	-	9770453150 9893770588
15	Shri. Rajesh Mehta	S.L.R, Sagar	224822	-	9993887923
16	Shri. R K Mathur	Commisioner, Division Sagar	224400 228087	224554	9425011055

17	Shri. Vinod Singh Baghel	Upper Commissioner, Sagar	220010	-	9425108709
18	Shri. T K Ghosh		267733	267799	9425247031
19	Shri. Pankaj Srivastav	I.G, Sagar Range, Sagar	267721 267731	267766	-
20	Shri. J P Ahirvar	D.I.G, Sagar Range, Sagar	267742	267766	-
21	Shri. D S Bhadauria	S.P, Lokayukta, Sagar	267765	-	-
22	Shri. S P Tiwari	D.F.O, South Forest Department	236215	222922	9424793806
23	Shri. Anil Kumar Singh	D.F.O, North Forest Department	236337	236496	9424793859
24	Shri. J Devprasad	D.F.O, Nauradehi	236868	-	9424793905
25	Shri. D R Tenivar	Additional S.P	267726	267755	9425096890
26	Shri. Rakshpal Singh	C.S.P, Sagar	267720		9425025723
27	Shri. Shailendra Sehgal	Homeguard District Commandant, Sagar	267747	267746	9425378212
28	Shri. Santhosh Singh		-	-	9425471068
29	Shri. Rahat Ali		222533	-	9425196648
31	Shri. Rajendra Pachauri		223790	-	9424956354
32	Shri. S K Jain	District Food Control Officer	223594	-	9425056901
33	Shri. L P Mandlekar		222658	222410	9425388891
34	Shri. R S Dohre		236202	223549	9826220338
35	Shri. B K Dhagat	General Manager, Madhya Pradesh PMGSY	241970	265566	9425614050
36	Shri. Anil Jain	Project Manager Unit-2, 12-month PMGSY Project, Sagar	236110	-	9827342190
37	Shri. Gopal Singh	General Manager, R.T.C, Sagar	-	-	9893583799
38	Shri. M K Tripathi		223524	240176	9425611641
39	Shri. M K Nagvanshi		236537	-	9424450422
40	Shri. Bhagwat Prasad		236681	237869	9425147561
41	Shri. Prateep Rai	Women and Child Development	223510	226742	9926377522
42	Smt. Alka Sonkar		261245	261243	9425063083
43	Shri. Arun Mishra		223509	-	9425484996
44	Shri. Bharat Singh		-	-	
45	Shri. N K Jain		271223	-	9993965249
46	Dr. Yashwant Singh Rajput		228335	236899	9425170567
47	Shri. R P Pathak		236675	-	9425947730
48	Shri. S S Ghuraiya		236525	-	9826315516
49	Shri. R S Mandloi		241937	-	9425435960
50	Shri. Harish Dubey	Manager, D.P.I.P, Sagar	220812	236739	9406904637
51	Shri. S B Singh		229454	225146	9425160997
52	Shri R P Goyal		240334	240397	9425675923
53	Shri. I B Patel		227220	225556	9425406136

54	Shri. Suresh Jain		232682	-	9827253633
55	Shri. S K Ratnawat		247038	-	9826485583
56	Shri. B L Ahirvar		226624	-	-
57	Shri. Major Gajraj Singh Yadav		225589	-	-
58	Shri. O P Dubey		222871	-	9425021048
59	Shri. Ajay Gupta	R.T.O, Sagar	236420	-	9425141289
60	Dr. Ranjeet Singh		223561	-	9424445211
61	Dr. B K Mishra	Chief Medical Officer, Sagar	264390	228888	9425425388
62	Dr. Ajay Badonya	Civil Surgeon, Sagar	236548 236200	237299 223311	9425437417
63	Shri. Nikunj Dubey	District Ayurved Officer, Sagar	-	-	9425455418
64	Shri. Vichit Narayan Tyagi		236001	201844	9827366621
65	Smt. Mangala Purkam		240131		
66	Sushri. Vaishnavi Patel		237612		
67	Shri. S S Saggu		237844		9425462490
68	Shri. Prashant Karole		222199		9926353130
69	Shri. Santhosh Srivastav				9425474534

Tehsildars

Sl. No	Name of the Official	Designation	Office	Residence	Mobile
1	Smt. Tripti Patairia	Tehsildar, Sagar	225420	224190	9406931606
2	Shri. O P Sharma	Tehsildar, Bina	225788	-	9425095505 9993882841
3	Shri. Dunes Shukla	Tehsildar, Khurai	241073	-	9977643707 9425475242
4	Shri. G S Patel	Tehsildar, Malthone	-	-	9425149756
5	Smt. Jiya Fathima	Tehsildar, Banda	253031	-	9406538406
6	Shri. Ashok Avasthi	Tehsildar, Shahgarh	-	-	9893822950
7	Shri. Kuldeep Parashar	Tehsildar, Rehli	256637	-	9425068935 9753360184
8	Shri. Avinash Rawat	Tehsildar, Garhakota	258087	-	9425172007
9	Shri. Shailendra Singh	Tehsildar, Deori	250094	-	9424944923
10	Shri. Ramashankar Srivastav	Tehsildar, Kesli	224445	-	9425775919 9977083685

Upper/Nayab Tehsildar

Sl. No	Name of the Official	Designation	Office	Residence	Mobile
1	Shri. S L Vishwakarma	Upper Tehsildar, Sagar	225420	-	9826495575
2	Shri. Sanjay Dubey	Nayab Tehsildar, Rahatgarh	224485	-	9424344932
3	Shri. Shailendra Badoniya	Nayab Tehsildar, Sagar	225420	-	9406931605
4	Shri. K N Ojha	Nayab Tehsildar, Sagar	-	-	9755629187
5	Shri. P L Chaudhary	Nayab Tehsildar, Sagar	-	-	9993713700
6	Shri Kamalesh Agrawal	Nayab Tehsildar, Bina	225788	-	9425360772
7	Shri. Sanjay Jain	Nayab Tehsildar, Khurai	241073	-	9826854466
8	Shri. N R Shivhare	Nayab Tehsildar, Bandri	-	-	9752285942
9	Sushri. Vineetha Jain	Nayab Tehsildar, Banda	253031	-	9977024757

Executive Engineer:

Sl. No	Name of the Official	Designation	Office	Residence	Mobile
1	Shri. Veer Singh Chandel	Executive Engineer, R.E.S	224528	-	9425327735
2	Shri. Devesh Garg	Executive Engineer, W.R.D 2	240097	230966	9826214966 9753690966
3	Shri. U R S Chauhan	Executive Engineer W.R.D 1	223809		9425016930
4	Shri. A K Jain	Executive Engineer, P.H.E	224269	222619	9826350800
5	Shri. M S Chandel	Executive Engineer, P.H.E (M)	223019	-	9425327010
6	Shri. G S Gaud	Executive Engineer, Public Health	236383	-	9406563418
7	Shri. Hemant Rajput	E.E PWD	222296	222387	9179089507
8	Shri Surendra Rao Gorkhede	E.E, PWD National	222206	-	9424018779
9	Shri. P C Pant	E.E, PWD, Bridge Division	223996	-	9424427019
10	Shri. P C Verma	Executive Engineer, N.H, Sagar New		-	9425328359
11	Shri. R K Soni	E.E, Housing Board, Sagar	262446	-	8109343528

C 8.5 Do's and Don'ts of potential hazards**Flood**

- Before a Flood to prepare for a flood, you should:
- Avoid building in a flood prone area unless you elevate and reinforce your home.
- Elevate the furnace, water heater, and electric panel if susceptible to flooding.
- Install "check valves" in sewer traps to prevent floodwater from backing up into the drains of your home.
- Contact community officials to find out if they are planning to construct barriers (levees, beams, floodwalls) to stop floodwater from entering the homes in your area.
- Seal the walls in your basement with waterproofing compounds to avoid seepage.

- During a Flood If a flood is likely in your area, you should:
- Listen to the radio or television for information.
- Be aware that flash flooding can occur. If there is any possibility of a flash flood, move immediately to higher ground. Do not wait for instructions to move.
- Be aware of streams, drainage channels, canyons, and other areas known to flood suddenly. Flash floods can occur in these areas with or without such typical warnings as rain clouds or heavy rain.
- If you must prepare to evacuate, you should do the following:
- Secure your home. If you have time, bring in outdoor furniture. Move essential items to an upper floor.
- Turn off utilities at the main switches or valves if instructed to do so. Disconnect electrical appliances. Do not touch electrical equipment if you are wet or standing in water.
- If you have to leave your home, remember these evacuation tips:
- Do not walk through moving water. Six inches of moving water can make you fall. If you have to walk in water, walk where the water is not moving. Use a stick to check the firmness of the ground in front of you.
- Do not drive into flooded areas. If floodwaters rise around your car, abandon the car and move to higher ground if you can do so safely. You and the vehicle can be quickly swept away.
- Driving Flood Facts
- The following are important points to remember when driving in flood conditions:
- Six inches of water will reach the bottom of most passenger cars causing loss of control and possible stalling.
- A foot of water will float many vehicles.
- Two feet of rushing water can carry away most vehicles including sport utility vehicles (SUV's) and pick-ups.

After a Flood

- The following are guidelines for the period following a flood:
- Listen for news reports to learn whether the community's water supply is safe to drink.
- Avoid floodwaters; water may be contaminated by oil, gasoline, or raw sewage. Water may also be electrically charged from underground or downed power lines.
- Avoid moving water.
- Be aware of areas where floodwaters have receded. Roads may have weakened and could collapse under the weight of a vehicle.
- Stay away from downed power lines, and report them to the power company.

- Return home only when authorities indicate it is safe.
- Stay out of any building if it is surrounded by floodwaters.
- Use extreme caution when entering buildings; there may be hidden damage, particularly in foundations.
- Service damaged septic tanks, cesspools, pits, and leaching systems as soon as possible. Damaged sewage systems are serious health hazards.
- Clean and disinfect everything that got wet. Mud left from floodwater can contain sewage and chemicals.

Flood: Know Your Terms

- Familiarize yourself with these terms to help identify a flood hazard:
- Flood Watch: Flooding is possible. Tune in to Local Radio for Weather Services, commercial radio, or television for information.
- Flash Flood Watch: Flash flooding is possible. Be prepared to move to higher ground; listen to Local Radio for Weather Services, commercial radio, or television for information.
- Flood Warning: Flooding is occurring or will occur soon; if advised to evacuate, do so immediately.
- Flash Flood Warning: A flash flood is occurring; seek higher ground on foot immediately.

You and Your Family

Do's

- Educate your children wife and other family member in respect of natural and manmade disasters and other crises. In case of your being unaware, take help of Civil Defense and Home Guard organization and other NGOs. Develop habit in you and your children to spare 1% of you busy time to think about Individual security and security interests.
- Keep the phone numbers of the local police station, police control rooms, fire stations, and schools, colleges, TV station, All India Radio, ambulance services and Chemists for emergency use.
- Guide children to remain at schools in emergency.
- Prepare an emergency kit of items and essentials in the house including essential documents and valuables.
- Store food and water for survival in case you had a pre-warning.
- Any suspicious incidents observed be reported to police on 100. Callers do not have to give their identity on the phone. Information of immediate use be conveyed to control rooms to help early relief.
- Carry your identity card, residential telephone number or address or personal card with you. Have your blood group and any medical allergies recorded with you.

- Check information in case of disasters and crises from Ward, Civil Defense / Home Guard, and BMC, TV and All India Radio Control room.
- Learn to fight such emergencies untidily.
- Support authorities and NGOs.
- Identify scooters, cars, vehicles parked in society and identify vehicles which are unknown and parked for long.
- Organize societies and muhalla committees to educate people.

Don'ts

- Do not encourage rumors.
- Do not blame any community for any crises.
- Do not encourage communal hatred in such situations.

Your Place of Work

Do's

- Your mode of travel by car, bus, train and taxi be known to your people.
- High rises buildings must check their electric and water supplies and organize periodic mockup drills for fire fighting and escape routes.
- Drills for bomb blast, threats be organized and practiced.
- Air/Helicopter evacuation be examined and organized from selected rooftops of high rises.
- Firefighting equipment be kept serviceable and periodic check is effected.
- Office societies be organized and prepared to coordinate such emergencies of fire brigade, medical help and other assistance. Such people be nominated and they should guide relief.
- Everyone must know use of fire extinguisher in emergency.
- Security guards are trained to coordinate in such crises.

Do's

During Transit

- Be concerned and develop habit of surveillance when out of our house. Check your seat in cinema hall, train, bus and air. Have you observed a bird, she jumped around and looks in all directions before selecting a spot on a tree for her security. Do we learn anything from this bird instinct?
- Look for the objects, baggage, at bus stand, railway stations, compartments, airport, which is unclaimed.
- Unknown vehicles parked at airports, Railway Stations and bus stands have to be kept under surveillance by common citizens, and this alertness may help authorities.

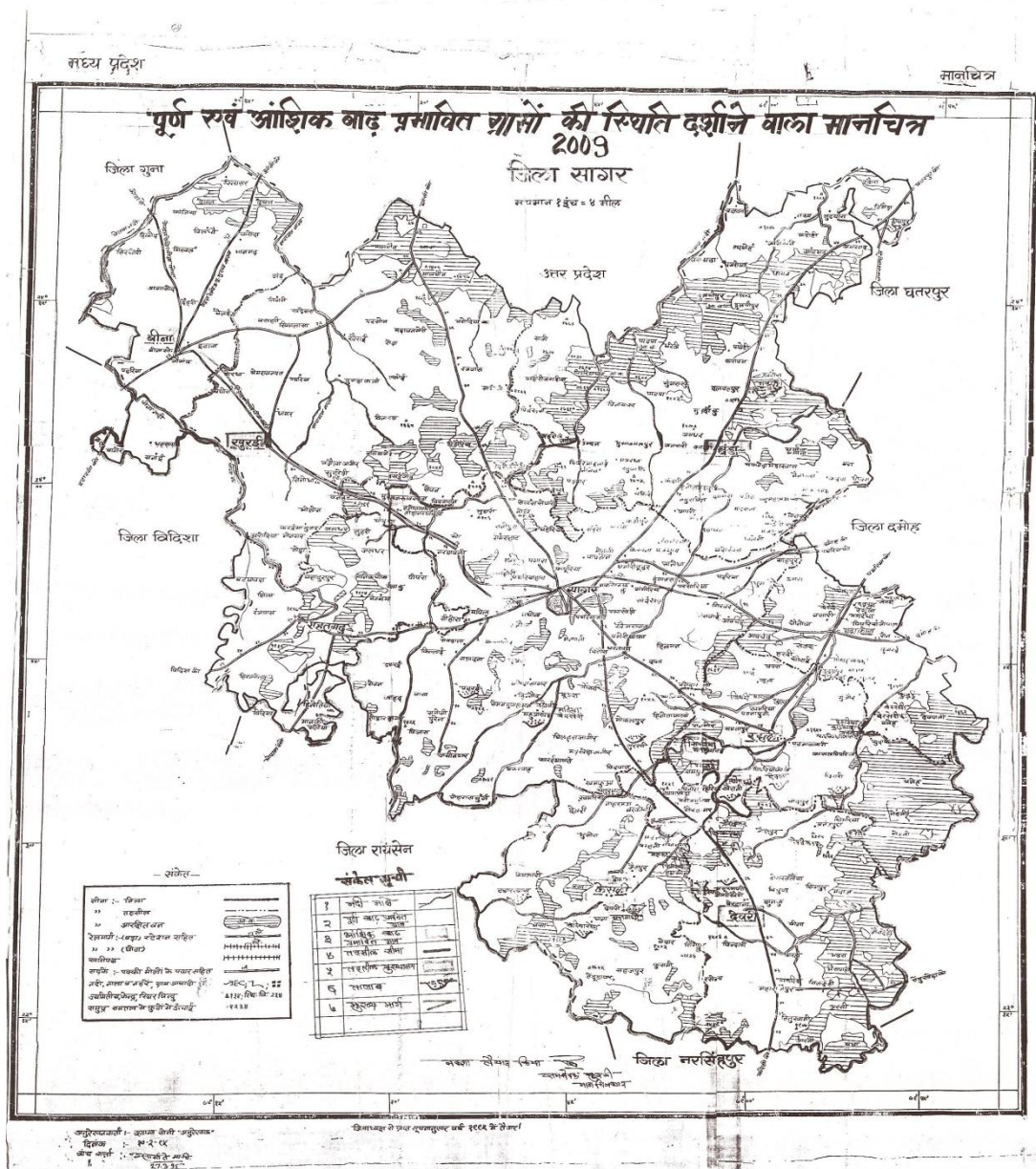
-
- Bus, trains and airlines passengers who notice any suspicious behavior of co-passengers, be brought to the notice of officials,
 - Every passenger should identify a friend or relations residence in case of requirement of staying away in emergency. The family should know about such a plan.

Don'ts

- Do not touch any suspicious object. Report to concerned people.
- Do not crowd the object.
- Passengers should not accept parcels from unknown persons in hurry while boarding train or bus

Detailed Maps

M.1 Flood affected villages in the district



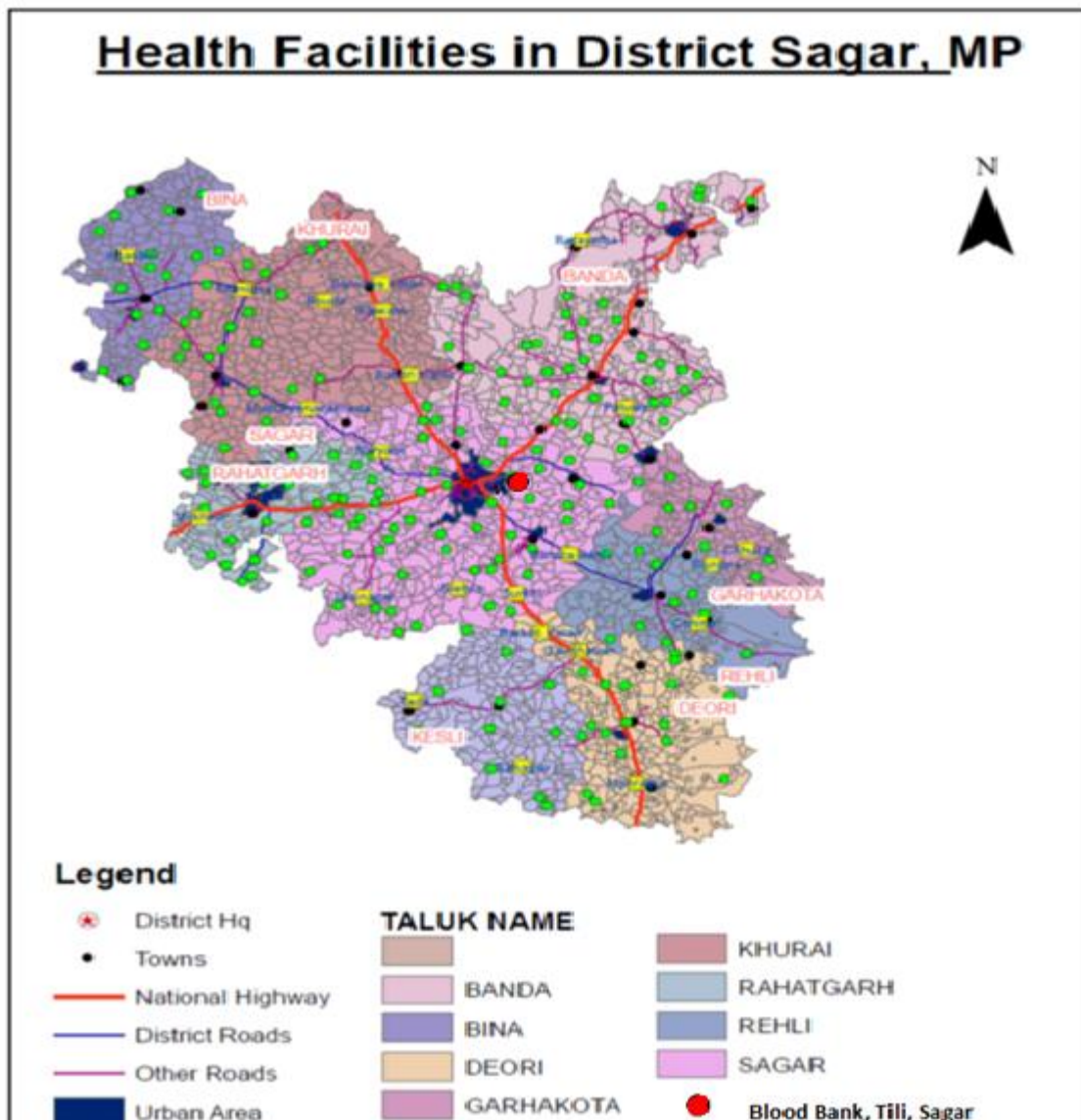
आयुक्तमंत्रालय: १. योजना विभाग, गुरुवादा
 २. विभाग, सागर-४९२०१६
 ३. जिला सागर-४९२०१६
 ४. जिला सागर-४९२०१६

विभागीय के द्वारा अद्यतनित की गई २०१६ के लेआउट

M.2 Frost affected villages in 2011



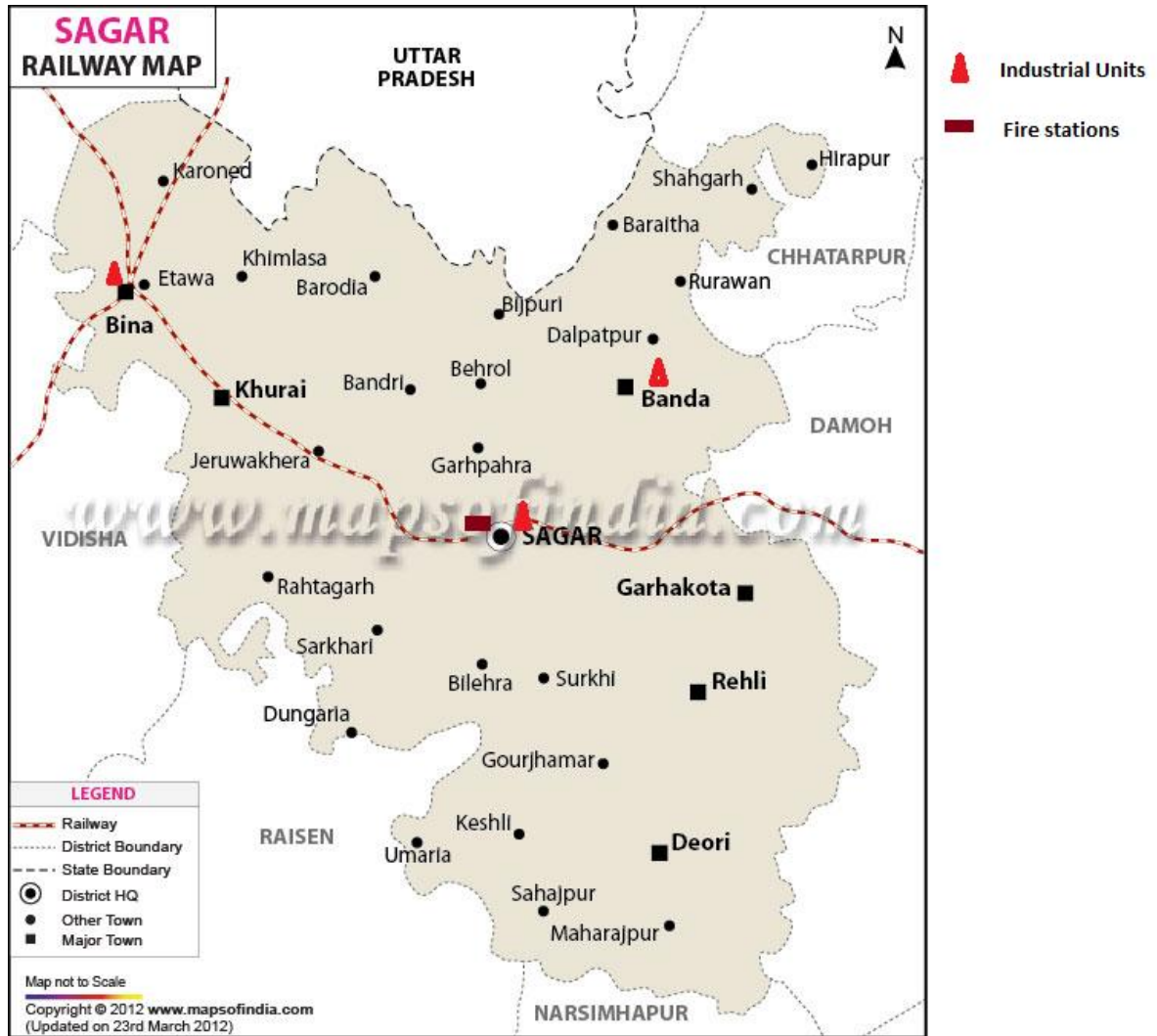
M.3 Health Centres and Blood Bank locations in Sagar



Map composed by NIC

Source: RGI, SOI, 2011

M.4 Industrial units and fire stations



Source: <http://www.mapsofindia.com/maps/madhyapradesh/railways/sagar.htm>