



SHIVAMOGGA DISTRICT
District Disaster Management Plan-
2019-20

GLOSSARY

Affected

People who are affected either directly or indirectly, by a hazardous event. Directly affected are those who have suffered injury, illness or other health effects; who were evacuated, displaced, relocated or have suffered direct damage to their livelihoods, economic, physical, social, cultural and environmental assets. Indirectly affected are people who have suffered consequences, other than or in addition to direct effects, over time, due to disruption or changes in economy, critical infrastructure, basic services, commerce or work, or social, health and psychological consequences.

Build back better

The use of the recovery, rehabilitation and reconstruction phases after a disaster to increase the resilience of nations and communities through integrating disaster risk reduction measures into the restoration of physical infrastructure and societal systems, and into the revitalization of livelihoods, economies and the environment.

Building code

A set of ordinances or regulations and associated standards intended to regulate aspects of the design, construction, materials, alteration and occupancy of structures which are necessary to ensure human safety and welfare, including resistance to collapse and damage.

Capacity

The combination of all the strengths, attributes and resources available within an organization, community or society to manage and reduce disaster risks and strengthen resilience.

Coping capacity is the ability of people, organizations and systems, using available skills and resources, to manage adverse conditions, risk or disasters. The capacity to cope requires continuing awareness, resources and good management, both in normal times as well as during disasters or adverse conditions. Coping capacities contribute to the reduction of disaster risks.

Capacity assessment is the process by which the capacity of a group, organization or society is reviewed against desired goals, where existing capacities are identified for maintenance or strengthening and capacity gaps are identified for further action.

Capacity development is the process by which people, organizations and society systematically stimulate and develop their capacities over time to achieve social and economic

goals. It is a concept that extends the term of capacity-building to encompass all aspects of creating and sustaining capacity growth over time. It involves learning and various types of training, but also continuous efforts to develop institutions, political awareness, financial resources, technology systems and the wider enabling environment.

Contingency planning

A management process that analyses disaster risks and establishes arrangements in advance to enable timely, effective and appropriate responses.

Critical infrastructure

The physical structures, facilities, networks and other assets which provide services that are essential to the social and economic functioning of a community or society.

Disaster

A serious disruption of the functioning of a community or a society at any scale due to hazardous events interacting with conditions of exposure, vulnerability and capacity, leading to one or more of the following: human, material, economic and environmental losses and impacts.

Emergency is sometimes used interchangeably with the term disaster, as, for example, in the context of biological and technological hazards or health emergencies, which, however, can also relate to hazardous events that do not result in the serious disruption of the functioning of a community or society.

Disaster damage occurs during and immediately after the disaster. This is usually measured in physical units (e.g., square meters of housing, kilometres of roads, etc.), and describes the total or partial destruction of physical assets, the disruption of basic services and damages to sources of livelihood in the affected area.

Disaster impact is the total effect, including negative effects (e.g., economic losses) and positive effects (e.g., economic gains), of a hazardous event or a disaster. The term includes economic, human and environmental impacts, and may include death, injuries, disease and other negative effects on human physical, mental and social well-being.

For the purpose of the scope of the Sendai Framework for Disaster Risk Reduction 2015-2030, the following terms are also considered:

- **Small-scale disaster:** a type of disaster only affecting local communities which require assistance beyond the affected community.
- **Large-scale disaster:** a type of disaster affecting a society which requires national or international assistance.

- **Frequent and infrequent disasters:** depend on the probability of occurrence and the return period of a given hazard and its impacts. The impact of frequent disasters could be cumulative, or become chronic for a community or a society.
- A **slow-onset disaster** is defined as one that emerges gradually over time. Slow-onset disasters could be associated with, e.g., drought, desertification, sea-level rise, epidemic disease.
- A **sudden-onset disaster** is one triggered by a hazardous event that emerges quickly or unexpectedly. Sudden-onset disasters could be associated with, e.g., earthquake, volcanic eruption, flash flood, chemical explosion, critical infrastructure failure, transport accident.

Disaster management

The organization planning and application of measures preparing for responding to and recovering from disasters.

Emergency management is also used, sometimes interchangeably, with the term disaster management, particularly in the context of biological and technological hazards and for health emergencies. While there is a large degree of overlap, an emergency can also relate to hazardous events that do not result in the serious disruption of the functioning of a community or society.

Disaster risk

The potential loss of life, injury, or destroyed or damaged assets which could occur to a system, society or a community in a specific period of time, determined probabilistically as a function of hazard, exposure, vulnerability and capacity.

Acceptable risk, or tolerable risk, is therefore an important subterm; the extent to which a disaster risk is deemed acceptable or tolerable depends on existing social, economic, political, cultural, technical and environmental conditions. In engineering terms, acceptable risk is also used to assess and define the structural and non-structural measures that are needed in order to reduce possible harm to people, property, services and systems to a chosen tolerated level, according to codes or “accepted practice” which are based on known probabilities of hazards and other factors.

Residual risk is the disaster risk that remains even when effective disaster risk reduction measures are in place, and for which emergency response and recovery capacities must be maintained. The presence of residual risk implies a continuing need to develop and support

effective capacities for emergency services, preparedness, response and recovery, together with socioeconomic policies such as safety nets and risk transfer mechanisms, as part of a holistic approach.

Disaster risk assessment

A qualitative or quantitative approach to determine the nature and extent of disaster risk by analyzing potential hazards and evaluating existing conditions of exposure and vulnerability that together could harm people, property, services, livelihoods and the environment on which they depend.

Disaster risk governance

The system of institutions, mechanisms, policy and legal frameworks and other arrangements to guide, coordinate, and oversee disaster risk reduction and related areas of policy.

Disaster risk information

Comprehensive information on all dimensions of disaster risk, including hazards, exposure, vulnerability and capacity, related to persons, communities, organizations and countries and their assets.

Disaster risk management

Disaster risk management is the application of disaster risk reduction policies and strategies to prevent new disaster risk, reduce existing disaster risk and manage residual risk, contributing to the strengthening of resilience and reduction of disaster losses.

Prospective disaster risk management activities address and seek to avoid the development of new or increased disaster risks. They focus on addressing disaster risks that may develop in future if disaster risk reduction policies are not put in place. Examples are better land-use planning or disaster-resistant water supply systems.

Corrective disaster risk management activities address and seek to remove or reduce disaster risks which are already present and which need to be managed and reduced now. Examples are the retrofitting of critical infrastructure or the relocation of exposed populations or assets.

Compensatory disaster risk management activities strengthen the social and economic resilience of individuals and societies in the face of residual risk that cannot be effectively reduced. They include preparedness, response and recovery activities, but also a mix of

different financing instruments, such as national contingency funds, contingent credit, insurance and reinsurance and social safety nets.

Community-based disaster risk management promotes the involvement of potentially affected communities in disaster risk management at the local level. This includes community assessments of hazards, vulnerabilities and capacities, and their involvement in planning, implementation, monitoring and evaluation of local action for disaster risk reduction.

Local and indigenous peoples' approach to disaster risk management is the recognition and use of traditional, indigenous and local knowledge and practices to complement scientific knowledge in disaster risk assessments and for the planning and implementation of local disaster risk management.

Disaster risk management plans set out the goals and specific objectives for reducing disaster risks together with related actions to accomplish these objectives. They should be guided by the Sendai Framework for Disaster Risk Reduction 2015-2030 and considered and coordinated within relevant development plans, resource allocations and programme activities. National-level plans need to be specific to each level of administrative responsibility and adapted to the different social and geographical circumstances that are present. The time frame and responsibilities for implementation and the sources of funding should be specified in the plan. Linkages to sustainable development and climate change adaptation plans should be made where possible.

Disaster risk reduction

Disaster risk reduction is aimed at preventing new and reducing existing disaster risk and managing residual risk, all of which contribute to strengthening resilience and therefore to the achievement of sustainable development.

A global, agreed policy of disaster risk reduction is set out in the United Nations endorsed Sendai Framework for Disaster Risk Reduction 2015-2030, adopted in March 2015, whose expected outcome over the next 15 years is: "The substantial reduction of disaster risk and losses in lives, livelihoods and health and in the economic, physical, social, cultural and environmental assets of persons, businesses, communities and countries".

Early warning system

An integrated system of hazard monitoring, forecasting and prediction, disaster risk assessment, communication and preparedness activities systems and processes that enables individuals, communities, governments, businesses and others to take timely action to reduce disaster risks in advance of hazardous events.

Multi-hazard early warning systems address several hazards and/or impacts of similar or different type in contexts where hazardous events may occur alone, simultaneously, cascadingly or cumulatively over time, and taking into account the potential interrelated effects. A multi-hazard early warning system with the ability to warn of one or more hazards increases the efficiency and consistency of warnings through coordinated and compatible mechanisms and capacities, involving multiple disciplines for updated and accurate hazards identification and monitoring for multiple hazards.

Economic loss

Total economic impact that consists of direct economic loss and indirect economic loss.

Direct economic loss: the monetary value of total or partial destruction of physical assets existing in the affected area. Direct economic loss is nearly equivalent to physical damage.

Indirect economic loss: a decline in economic value added as a consequence of direct economic loss and/or human and environmental impacts.

Direct economic losses usually happen during the event or within the first few hours after the event and are often assessed soon after the event to estimate recovery cost and claim insurance payments. These are tangible and relatively easy to measure.

Indirect economic loss includes microeconomic impacts (e.g., revenue declines owing to business interruption), mesoeconomic impacts (e.g., revenue declines owing to impacts on natural assets, interruptions to supply chains or temporary unemployment) and macroeconomic impacts (e.g., price increases, increases in government debt, negative impact on stock market prices and decline in GDP). Indirect losses can occur inside or outside of the hazard area and often have a time lag. As a result they may be intangible or difficult to measure.

Evacuation

Moving people and assets temporarily to safer places before, during or after the occurrence of a hazardous event in order to protect them.

Exposure

The situation of people, infrastructure, housing, production capacities and other tangible human assets located in hazard-prone areas.

Extensive disaster risk

The risk of low-severity, high-frequency hazardous events and disasters, mainly but not exclusively associated with highly localized hazards.

Hazard

A process, phenomenon or human activity that may cause loss of life, injury or other health impacts, property damage, social and economic disruption or environmental degradation.

Annotations: Hazards may be natural, anthropogenic or socionatural in origin. Natural hazards are predominantly associated with natural processes and phenomena. Anthropogenic hazards, or human-induced hazards, are induced entirely or predominantly by human activities and choices. This term does not include the occurrence or risk of armed conflicts and other situations of social instability or tension which are subject to international humanitarian law and national legislation. Several hazards are socionatural, in that they are associated with a combination of natural and anthropogenic factors, including environmental degradation and climate change.

Hazards may be single, sequential or combined in their origin and effects. Each hazard is characterized by its location, intensity or magnitude, frequency and probability. Biological hazards are also defined by their infectiousness or toxicity, or other characteristics of the pathogen such as dose-response, incubation period, case fatality rate and estimation of the pathogen for transmission.

Multi-hazard means (1) the selection of multiple major hazards that the country faces, and (2) the specific contexts where hazardous events may occur simultaneously, cascadingly or cumulatively over time, and taking into account the potential interrelated effects.

Hazards include (as mentioned in the Sendai Framework for Disaster Risk Reduction 2015-2030, and listed in alphabetical order) biological, environmental, geological, hydrometeorological and technological processes and phenomena.

Biological hazards are of organic origin or conveyed by biological vectors, including pathogenic microorganisms, toxins and bioactive substances. Examples are bacteria, viruses or parasites, as well as venomous wildlife and insects, poisonous plants and mosquitoes carrying disease-causing agents.

Environmental hazards may include chemical, natural and biological hazards. They can be created by environmental degradation or physical or chemical pollution in the air, water and soil. However, many of the processes and phenomena that fall into this category may be termed drivers of hazard and risk rather than hazards in themselves, such as soil degradation, deforestation, loss of biodiversity, salinization and sea-level rise.

Geological or geophysical hazards originate from internal earth processes. Examples are earthquakes, volcanic activity and emissions, and related geophysical processes such as mass movements, landslides, rockslides, surface collapses and debris or mudflows.

Hydrometeorological factors are important contributors to some of these processes. Tsunamis are difficult to categorize: although they are triggered by undersea earthquakes and other geological events, they essentially become an oceanic process that is manifested as a coastal water-related hazard.

Hydrometeorological hazards are of atmospheric, hydrological or oceanographic origin. Examples are tropical cyclones (also known as typhoons and hurricanes); floods, including flash floods; drought; heatwaves and cold spells; and coastal storm surges.

Hydrometeorological conditions may also be a factor in other hazards such as landslides, Wildland fires, locust plagues, epidemics and in the transport and dispersal of toxic substances and volcanic eruption material.

Technological hazards originate from technological or industrial conditions, dangerous procedures, infrastructure failures or specific human activities. Examples include industrial pollution, nuclear radiation, toxic wastes, dam failures, transport accidents, factory explosions, fires and chemical spills. Technological hazards also may arise directly as a result of the impacts of a natural hazard event.

Hazardous event

The manifestation of a hazard in a particular place during a particular period of time.

Intensive disaster risk

The risk of high-severity, mid- to low-frequency disasters, mainly associated with major hazards.

Mitigation

The lessening or minimizing of the adverse impacts of a hazardous event.

National Platform for Disaster Risk Reduction

A generic term for national mechanisms for coordination and policy guidance on disaster risk reduction that are multisectoral and interdisciplinary in nature, with public, private and civil society participation involving all concerned entities within a country.

Preparedness

The knowledge and capacities developed by governments, response and recovery organizations, communities and individuals to effectively anticipate, respond to and recover from the impacts of likely, imminent or current disasters.

Preparedness is based on a sound analysis of disaster risks and good linkages with early warning systems, and includes such activities as contingency planning, the stockpiling

of equipment and supplies, the development of arrangements for coordination, evacuation and public information, and associated training and field exercises. These must be supported by formal institutional, legal and budgetary capacities. The related term “readiness” describes the ability to quickly and appropriately respond when required.

A **preparedness plan** establishes arrangements in advance to enable timely, effective and appropriate responses to specific potential hazardous events or emerging disaster situations that might threaten society or the environment.

Prevention

Activities and measures to avoid existing and new disaster risks.

Reconstruction

The medium- and long-term rebuilding and sustainable restoration of resilient critical infrastructures, services, housing, facilities and livelihoods required for the full functioning of a community or a society affected by a disaster, aligning with the principles of sustainable development and “build back better”, to avoid or reduce future disaster risk.

Recovery

The restoring or improving of livelihoods and health, as well as economic, physical, social, cultural and environmental assets, systems and activities, of a disaster-affected community or society, aligning with the principles of sustainable development and “build back better”, to avoid or reduce future disaster risk.

Rehabilitation

The restoration of basic services and facilities for the functioning of a community or a society affected by a disaster.

Residual risk

The disaster risk that remains in unmanaged form, even when effective disaster risk reduction measures are in place, and for which emergency response and recovery capacities must be maintained.

Resilience

The ability of a system, community or society exposed to hazards to resist, absorb, accommodate, adapt to, transform and recover from the effects of a hazard in a timely and efficient manner, including through the preservation and restoration of its essential basic structures and functions through risk management.

Response

Actions taken directly before, during or immediately after a disaster in order to save lives, reduce health impacts, ensure public safety and meet the basic subsistence needs of the people affected.

The institutional elements of response often include the provision of emergency services and public assistance by public and private sectors and community sectors, as well as community and volunteer participation. “Emergency services” are a critical set of specialized agencies that have specific responsibilities in serving and protecting people and property in emergency and disaster situations. They include civil protection authorities and police and fire services, among many others. The division between the response stage and the subsequent recovery stage is not clear-cut. Some response actions, such as the supply of temporary housing and water supplies, may extend well into the recovery stage.

Retrofitting

Reinforcement or upgrading of existing structures to become more resistant and resilient to the damaging effects of hazards.

Risk transfer

The process of formally or informally shifting the financial consequences of particular risks from one party to another, whereby a household, community, enterprise or State authority will obtain resources from the other party after a disaster occurs, in exchange for ongoing or compensatory social or financial benefits provided to that other party.

Structural and non-structural measures

Structural measures are any physical construction to reduce or avoid possible impacts of hazards, or the application of engineering techniques or technology to achieve hazard resistance and resilience in structures or systems. Non-structural measures are measures not involving physical construction which use knowledge, practice or agreement to reduce disaster risks and impacts, in particular through policies and laws, public awareness raising, training and education.

Underlying disaster risk drivers

Processes or conditions, often development-related, that influence the level of disaster risk by increasing levels of exposure and vulnerability or reducing capacity.

Vulnerability

The conditions determined by physical, social, economic and environmental factors or processes which increase the susceptibility of an individual, a community, assets or systems to the impacts of hazards.

Reference: United Nations Office for Disaster Risk Reduction (UNISDR) National Institute of Disaster Management, India (NIDM)

CHAPTER:-1

INTRODUCTION

Disaster is a sudden event, such as an accident or a natural catastrophe that causes great damage or loss of life, denoting a genre of films that use natural or accidental catastrophe as the mainspring of plot and setting. A **disaster** could be natural or man-made (or technological) hazard resulting in significant physical damage or destruction, loss of life, or drastic change in the environment. A disaster can be ostensibly defined as any tragic event stemming from events such as earthquakes, floods, catastrophic accidents, fires, or explosions. It is a phenomenon that can cause damage to life and property and destroy the economic, social and cultural life of people. A proper management plan is absolutely essential in preventing, mitigating and addressing a disaster. A systematic plan also should embody in itself Rescue, Relief and Rehabilitation measures in respect of the affected people. All the core departments under the guidance of the Deputy Commissioner of the district should work collectively on war footing basis in order to save life and property of the citizens and minimize the impact of the disaster. The departments like Revenue, Police, Fire force, Home guards, PWD, Health and forest should respond to the Disaster Management call without loss of time. Hence the DDMP is designed to act swiftly in case of emergency circumstances.

“This plan encompasses the actions taken by an organization in response to unexpected events that are adversely affecting people or resources and threatening the continued operation of the organization.”

An occurrence of disaster with severity and magnitude that normally results in deaths, injuries, and damage to property and that cannot be managed through the routine procedures and resources of government demands a comprehensive Disaster Management Plan. It usually develops suddenly and unexpectedly and requires immediate, coordinated, and effective response by multiple government agencies, voluntary and private sector organisations to meet the human needs and ensure speedy recovery of the situation in all respects.

In contemporary academia, disasters are seen as the consequence of inappropriately managed risk. These risks are the product of a combination of both hazards and vulnerability. Hazards that strike in areas with low vulnerability will never become disasters, as is the case in uninhabited regions.

What is a Disaster?

“A **Disaster** is a sudden, calamitous event that causes serious disruption of the functioning of a community or a society involving widespread human material economic or environmental losses and impacts which exceeds the ability of the affected community or society to cope using its own resources.”

---- **UN International Strategy for Disaster Reduction,**
(UNISDR)

A Disaster is a "Situation or event, which overwhelms local capacity, necessitating a request to national or international level for external assistance; an unforeseen and often sudden event that causes great damage, destruction and human suffering".

----- Centre for Research of Epidemiology of Disaster (CRED), Belgium

Hazard: is a natural physical event which has a potential to convert into a disaster, causing widespread injury or deaths and damage to public or private property or the environment.

Vulnerability: means inability to resist a hazard or respond when a disaster has occurred. It depends on several factors such as people's age and state of health, local environmental and sanitary conditions, as well as on the quality and state of local buildings and their location with respect to any hazards.

--- UNISDR

Disaster Preparedness: Pre-disaster activities that are undertaken within the context of disaster risk management and are based on sound risk analysis. This includes the development/enhancement of an overall preparedness strategy, policy, institutional structure, warning and forecasting capabilities, and plans that define measures geared to helping at-risk communities safeguard their lives and assets by being alert to hazards and taking appropriate action in the face of an imminent threat or an actual disaster.

--- Office of Commissioner for Humanitarian Affairs (OCHA)

Disaster risk reduction (DRR), attempts to look back at the root causes of risks and vulnerabilities in a society, state, town or even a single household. Factors can be broad or specific, depending on the scope of risk and vulnerability assessments.

Natural hazard: Natural process or phenomenon that may cause loss of life, injury or other health impacts, property damage, loss of livelihoods and services, social and economic disruption, or environmental damage.

The **Natural disasters** were split into 3 specific groups:

1. **Hydro-meteorological disasters:** Floods and wave surges, storms, droughts and related disasters (extreme temperatures and forest/scrub fires), and landslides & avalanches;
2. **Geophysical disasters:** Earthquakes & tsunamis and volcanic eruptions;
3. **Biological disasters:** Epidemics and insect infestations.
4. **Man made disasters:** Disasters due to human activities could be unintentional, but lack of safety measures and abiding by certain safety rules and regulations, Most of these (barring coordinated terrorist activities) are due to certain accidents. Terrorism, Bomb blast, Wars, Riots, technology related, Accidents (Road, Ship, Air), Chemical and Nuclear, Industrial accidents etc.

Worst Disasters in the world

Bam earthquake, Iran, Dec 2003, magnitude 6.6 and 26,271 dead, 30,000 injured

1. **South Asian tsunami,** Dec 2004, magnitude 9.3 and 230,000 dead in 14 nations, 125000 injured, 45,752 missing and 1.69 million homeless
2. **Sichuan earthquake, China,** May 2008, magnitude – 7 and 8 69,195 dead, 18,392 homeless and 374,643 injured and 115 billion dollars loss
3. **Haiti earthquake,** Jan 2010, magnitude 7 and 150,000 dead, 300,000 injured and 100 million dollars loss
4. **Pakistan floods,** Jul 2010 --- 2,000 dead, 20 million affected and loss of 43 billion dollars
5. **Japan tsunami,** Mar 2011, magnitude 9 and 15,188 dead, 5,337 injured, 8,742 missing and loss of 300 billion dollars

The Indian scenario

India has been vulnerable to many disasters in the past both natural and man made. Nearly, 60% of the landmass is prone to earthquake, 8% for cyclones (east and west coast) and 68% for drought. Some of them are mentioned below along with number of people dead and the economic losses incurred.

A. Natural disasters in India

1. **Latur earthquake**, Sept. 1993, magnitude 6.4 and 20,000 dead and 30,000 injured
2. **Orissa super cyclone**, Oct 1999, 15,000 dead 275,000 homes destroyed and 8,119 injured and 4.9 billion dollars loss.
3. **Gujarat earthquake**, Jan 2001, magnitude 7.7 and 20,000 dead and 167,000 injured and 400,000 homes destroyed and 5.5 billion dollars loss
4. **South Asian Tsunami**, Dec 2004, magnitude 9.3 and 12,405 dead, 5,640 missing and 647,599 homeless.
5. **Cyclone Aila**, 25 May 2009, 325 dead and 8,000 missing, one million homeless and loss of 552.6 million dollars and 7,000 infected with diarrhea due to floods

B. Manmade disasters in India

1. **Bhopal gas tragedy**, Dec1984 and 3,787 dead and 558,125 affected with disabling injuries.
2. **Gujarat riots**, Mar 2002
3. **Serial bomb blast**, Mumbai, Mar1993
4. **Bomb blast in suburban trains, Mumbai, Jul 2006**
5. **Terrorist attack, Mumbai, Nov 2008**
6. **Air plane accident**, Mangalore, May 2010

Thus, we can notice that most of the disasters have occurred within the last two decades, and the frequency, intensity and magnitude of the disasters are ever increasing.

National Disaster Management (NDMA) Act, 2005

The National emergency management authority was constituted in Aug 1999, which submitted a report in 2001, to have separate department for Disaster management in India Government enacted the National disaster management act on 23rd Dec 2005, which lead to the creation of National disaster management authority (NDMA).

Nodal ministries responsible for various categories of disasters

Earthquakes, Tsunami, Floods	MHA/Ministry of Earth Sciences/IMD
Resources/CWC	MHA/Ministry of Water
Cyclones	MHA/Ministry of Earth Sciences/IMD

Drought	Ministry of Agriculture
Biological Disasters	Ministry of Health and Family Welfare
Chemical Disasters	Ministry of Environment & Forests
Nuclear Disasters	Department of Atomic Energy
Air Accidents	Ministry of Civil Aviation
Railway Accidents	Ministry of Railways
Terrorism, bomb blast, Riots	Ministry of Home Affairs

DISTRICT DISASTER MANAGEMENT PLAN (DDMP)

The District Disaster Management Action Plan (DDMP) has been prepared for its operationalisation by various departments and agencies of the Shimoga district and other Non-Governmental Agencies expected to participate in disaster management. This plan provides for institutional arrangements, roles and responsibilities of the various agencies, interlinks in disaster management and the scope of their activities. An elaborate inventory of resources has also been formalised.

The purpose of this plan is to evolve a system to:

- To ascertain the inventory of existing resources and facilities available with the various agencies involved in the management of disaster in the district.
- Assess their adequacies and short falls if any in providing a multi disaster response.
- Suggest institutional strengthening, technology support, up gradation of information system and data management for improving the quality of administrative responses to disaster at the district level and finally.
- To evolve DDMP as an effective managerial tool and effective response mechanism to tackle the situation that may arise out of disaster.

The DDMP addresses the district's response to demands from the taluk administration and in extraordinary emergency situations at multi-taluk levels. It is associated with disasters like road accidents, major fires, earthquakes, floods, cyclones, epidemics and off-site industrial accidents. The present plan is a multi-disaster response plan for the disasters which outlines the institutional framework required for managing such situations.

The DMAP specifically focuses on the role of various governmental departments and agencies like the Emergency Operations Centre in case of any of the above mentioned disasters. This plan concentrates primarily on the response strategy.

Objectives of DDMP

The objectives of any DDMP should be to localize a disaster and to a maximum extent possible contain it so as to minimize the impact on life, environment and property. The DDMP has been formed keeping in view of past experiences, suiting to the needs under the able leadership of Deputy Commissioner and in co-operation of all other departments and public at large. The officers at the district level have attended several meetings and have given their valuable suggestions and to tackle the problems most efficiently in a short period keeping inter departmental co-operation.

Need for DDMP

In the absence of a defined plan, response to a disaster would be arbitrary leading to over emphasis on some actions or other actions, which would be critical. Moreover, due to absence of a defined response structure and allocations of responsibilities, there would be mismanagement of resources and overlap of actions among various agencies, which may aggravate the situation which would adversely affect the life and property of the citizens.

The Preparedness of DDMP is necessary,

1. To ascertain the status of existing resources and facilities available with the various agencies involved in the management of disaster in the district.
2. Assess their adequacies and short falls if any, in providing a multi disaster response.
3. Suggest institutional strengthening, technology support, up gradation of information system and data management for improving the quality of administrative responses to disaster at the district level and finally,
4. To evolve DDMP as an effective managerial tool.

A formal planning for managing disaster is therefore necessary to ensure minimization of hardship. This can be achieved only through;

- a) Preplanning of proper sequence of response actions.
- b) Allocation of responsibilities to the participating agencies.
- c) Effective management of resources, and
- d) Developing codes and standard operating procedures for smooth coordination between various departments and relief agencies involved.

Who formulates and carryout the plan?

The disaster management plan has been formulated starting from the district level up to the village level. The deputy commissioner, sub-divisional officers and Tahasildar will head the management teams at their respective levels. Urban & rural local bodies, various engineering wings & civil society forms an essential component of DDMP. The DDMP is executed by the district disaster management committee, chaired by the Deputy Commissioner.

CHAPTER-2

SHIMOGA DISTRICT PROFILE

Brief Introduction to Shivamogga District:

Shivamogga District is a district in the Karnataka state of India. “Shivamogga” is alternatively spelt as “Shimoga”. A major part of this district lies in the Malnad region of the Western Ghats; a region known for its green forests, plentiful rainfall, beautiful waterfalls and also of being the source of many rivers that flow in Karnataka. Shivamogga City is the headquarters of this district.

The Western Ghats or Sahyadri range and the numerous rivers that originate there provide Shivamogga with abundant natural beauty. The numerous lakes, ponds and water bodies make the land very suitable for agriculture. **“Shivamogga is known as the cultural capital of Karnataka and also called rice bowl of Karnataka”**.

Shivamogga district is the origin of the rivers Kali, Gangavathi, Sharavathi and Tadadi. But the two major rivers that flow through this district are Tunga and Bhadra which meet at a place called Koodli (in Bhadravathi Taluk) and flow together as Tungabhadra.

Agro-based, Automobile-based and engineering are the major industries present in Shivamogga district. Maximum investment has been made in the Food and Beverages sector followed by Engineering/Mechanical goods sector. To encourage rural industry, rural youth are being imparted training in tailoring, embroidery, motor winding, hand pump repair and other areas. Other rural industries in this district are related to carpentry, blacksmith, leather, pottery, beekeeping, stone cutting, handlooms, agarbathi (incense sticks) and sandalwood carving. Ranking 9th in terms of the total area among the districts of Karnataka, Shivamogga district is spread over an area of 8477 Sq.km.

1.1 History of Shivamogga District

The history of the Shivamogga region is very much the history of Karnataka itself, considering that all the great kingdoms that came to power here have vied for control of and ruled this land of rich resources. Prior to the beginning of the first millennium, the Shivamogga region formed a part of the Maurya empire. The Satavahana then came to control in central India and Shivamogga must have formed one of the southern most provinces of the kingdom.

Shivamogga district is a part of the Malnad region of Karnataka and is also known as the **"Gateway to Malnad"** or **“Malenaada Hebbagilu”** in Kannada. Located in the central part of Karnataka state, Shivamogga district is landlocked, i.e. neither does it have a coastline, nor does it border any other state of India. It is bounded by Haveri District to

the northeast, Davanagere District to the east, Chikmagalur District to the southeast, Udupi District to the southwest, and Uttara Kannada to the northwest.

After the fall of the Shatavahana empire around 200 C.E., after a brief interlude of confusion that existed, the area came under the control of the Kadambas of Banavasi around 345 C.E. The Kadambas were the earliest kingdom to give administrative status to Kannada language. Banavasi is just across the border from Shivamogga inside Uttara Kannada district. Later the Kadambas became feudatories of the Badami Chalukyas around 540 C.E.

Shivamogga passed into the hands of the Rashtrakutas in the 8th century. It was only under the Kalyani Chalukyas who overthrew the Rashtrakutas did Shivamogga come into prominence in Southern India. Balligavi in Shivamogga district had its greatest and grandest time during their rule. Later in the 12th. century with the weakening of the Kalyani Chalukyas the Hoysalas annexed this area. Shivamogga continued to play an important role in the development of Kannada culture and arts during this time. After the fall of the Hoysalas to the invasion of the Khilji dynasty around 1343 C.E. the entire region came under the Vijayanagar Empire without any bloodshed. The Saluva kings of the Vijayanagar empire find their roots in this region. After the defeat of Vijayanagar empire in 1565 C.E. in the battle of Tallikota, Shivamogga had one more last surprise in that the local Keladi Nayakas who were originally feudatory of the Vijayanagar empire took control, declared sovereignty and ruled mostly as an independent kingdom for about two centuries, often waging wars with the Mysore Kingdom, the Sultans of Bijapur and finally the Maratha. In 1763 they were finally absorbed into the Kingdom of Mysore and remained a part of it till independence from the British.

ORIGIN OF NAME:

There are various legends as to how the name Shivamogga has evolved. According to one legend, the name Shivamogga is related to the Hindu God Shiva. “Shiva-Mukha” (Face of Shiva), Shivana-Moogu (Nose of Shiva) or Shivana-Mogge (Flowers to be offered to Shiva) can be the origins of the name "Shivamogga". Another legend indicates that the name Shivamogga is derived from the word “Sihi-Moge” which means sweet pot. According to this legend, Shivamogga once had the ashram of the sage Durvasa. He used to boil sweet herbs in an earthen pot. Some cowherds, found this pot and after tasting the sweet beverage named this place “**Sihi-Mog**”.

Location: Shivamogga lies between the latitudes 13o27' and 14o39' N and between the longitudes 74o37' and 75o52' E at a mean altitude of 569 meters above sea level. The peak of the hill Kodachadri at an altitude of 1343 meters above sea level is the highest

point in this district.

HISTORY OF THE DISTRICT AS AN ADMINISTRATIVE UNIT;

Previously, Shimoga was consisting of nine taluks. However, in the year 1999, the District was bifurcated into two Districts namely Shimoga and Davanagere District. Shimoga District was formed with 7 Taluks namely Shimoga, Bhadravathi, Thirthahalli, Sagar, Shikaripura, Soraba and Hosanagara with Shimoga town as District Headquarters and the rest of the two taluks are identified in Davanagere district.

Shimoga District comprising Seven taluks divided into two Sub Division viz; Shimoga, Bhadravathi and Thirthahalli Taluks in Shimoga Sub Division and Sagar, Shikaripura, Soraba, Hosanagara Taluks in Sagar Sub Division. It has 1443 villages with 9 town areas dividing into 36 Revenue Hoblies with 260 Gram Panchayats.

District Profile:

The district is spread in an area of 8477 Sq. KMs having Agriculture and animal husbandry are the major contributors to the economy of Shivamogga district. Rice, Areca nut, Cotton, Maize and Ragi are the major crops cultivated in this district. Karnataka is the largest producer of areca nut in India, majority of which is cultivated in the Shimoga district. The farmers from Shimoga are said to be very innovative and have managed to cultivate crops like Vanilla and Jatropha previously unheard of in India; yielding high monetary benefits. The Agriculture area covers 1.85 Lakh hectares. The annual rainfall of the district is 1819 mm. with rainy days of 86 days.

The population of district was 17,55,512 as per 2011 Census (Provisional List), of which males and females were 8,79,817 and 8,75,695 respectively. The sex ratio i.e., number of female per 1000 male was 995 in the district. The population living in rural area was 11,32,286 and remaining was urban population. The main official language is Kannada and other spoken languages are Telugu and Urdu.

Shimoga Institute of Medical Sciences is the medical sciences college at Shimoga and managed by Government Department. Subbaiah Institute of Medical Sciences is newly opened private owned medical college. It started functioning from the year 2012-13 Sharavathi Dental College is also located in Shimoga. Shimoga also has two engineering colleges, Jawaharlal Nehru National College of Engineering and PES Institute of Technology and Management. Sahyadri College for Science, Commerce and Arts is one of the oldest in Karnataka, run by the Government. TAMES Ayurvedic medical is situated near Bhadravathi. It has also a government veterinary college, government Ayurveda College besides university of Agriculture and Horticulture.

Places of importance in and around Shimoga:

Jog Falls is the second-highest plunge waterfall in India, Located near Sagara, Karnataka, these segmented falls are a major tourist attraction. It is also called by alternative names of Gerusoppe falls, Gersoppa Falls and Jogada Gundi. Jog Falls are a large series of waterfalls, located 105 km from Shimoga in Sagar taluk. The Sharavathi River takes a spectacular jump from a height of 292 meters (958 ft) in four distinct falls to form the highest waterfalls in India. The best time to visit is soon after the monsoon season during July and August.



Agumbe is a village located in Thirthahalli taluk and the Malnad region, Agumbe is among the places in India that receive very heavy rainfall earning it the sobriquet, "Cherrapunji of the South". Agumbe Rainforest Research Station, the only permanent rainforest research station in India is established here. The renowned herpetologist, Romulus Whitaker called Agumbe the capital of King Cobra. An area near Agumbe has been converted into a protected area for Medicinal Plants to help conservation. Agumbe forests (as well as nearby Someswara Wild Life Sanctuary) are included in World Heritage sites as a part of Western Ghats.

Kodachadri is a mountain peak with dense forests (altitude - 1343 meters above sea level) in the Western Ghats. It is declared as natural heritage site by Government Karnataka. Kodachadri forms a background to the famous temple of Mookambika in Kollur. It is located at a distance of 21 km from Kollur and 15 km from Nagodi village, in Hosanagara taluk. There are different routes to reach the Peak of Kodachadri and the difficulty varies highly with respect to the route chosen. However it is challenging to reach the peak in monsoon due to heavy rains that make the routes slippery.



Fig. Kodachadri View



Fig. Tiger at Safari

Tyavarekoppa Lion Safari 10 Kms from Shimoga enroute Sagar town Lions, Tigers and other wild life animals roam around in the deep forests freely. The lion-tiger safari started way back in 1988 is a ideal picnic spot . The safari is spread around an area of 200 Hectares of dense forest. You can witness to the grace, diversity, color and marvel of nature and catch enlivening glimpses of Lions, Tigers, Cheetah, Bear, Deer, and rare migratory birds as they amble around in luxuriant habitat.

Sakrebayalu Elephant Camp On the way to Thirthahalli from Shimoga, 14 kms away from the city you can hear elephants reciting their lessons. Elephant from the adjoining forests bathe at this spot before they re-enter their forest abode. Every morning these majestic creatures waddle down to waters and after playfully cleansed their bodies and satiated their thirst, they leave the waters before the rays of the sun get stronger. They are off to deal with their day's routine only to return the following day.



Fig. Elephant Training Camp



Fig. MandaGadde Bird Sanctuary

Mandagadde Bird Sanctuary 32Kms from Shimoga city on the way to Thirthahalli you can hear the birds tweeting. This place is picnic spot for birds migrating from far places around the world. The place is surrounded by dense lush green forest and the flow of river Tunga has created a small island which adds to the beauty. The dense trees on the island provides shelter to migrating birds. Birds like Egrets, Bellakki Cormorant, Darter, Snake bird etc immigrate from different parts of the world during may season for breeding A high platform is built on the edge of river Tunga for bird watching.

Guduvi Bird Sanctuary is unique for many reasons but is the only sanctuary located in the midst of dense forest. Guduvi is one of the 5 famous bird sanctuaries of Karnataka. The place is 16 Kms from Soraba taluk of Shimoga district. This bird sanctuary is spread over an area of 73.68 Hectares. As per 1993 survey, it is told that 191 varieties of birds are found at this place. Some important birds found are White Pebis, Stone Bill, Egret, Cormorant, Snake bird, Heron etc. Different birds immigrate from other parts of the world in different seasons for breeding. A platform is built for a closer look of birds.



Fig. Gudvi Bird Sanctuary



Fig. Rameshwara Temple

Koodli 16 Kms from Shimoga , a place where rivers Tunga and Bhadra embrace and flow together from here, hence the name Koodali. A cultural place with rich heritage and temples around. It has a noted Smartha Monastery stated to have been founded in the 16th century by Jagadguru Narsimha Bharathi Swamigalu of Sringeri. Within the premises of the matha, there are shrines of Sharadamba and Shankaracharya. Outside ,there are two temples of hoysala times dedicated to Rameshwara and Narasimha. Koodali is also known as Varanasi of the south, it is home to Rushyashrama, Brahmeshwara, Narasimha and Rameshwara temples. The 600 years old mutt of Shankaracharya still stands with inscriptions of Hoysala and Ikkeri Kings.

Ikkeri situated 76 Kms to the north of Shimoga and about 3 Kms to the south of Sagar taluk. The word means "Two Streets". This place was the capital of Keladi Nayakas for some years. The walls of the city were of great extent, forming three concentric enclosures. In the citadel was the palace build of mud and timber, adorned with carvings and false buildings. The only vestige of the former greatness of Ikkeri is the temple of Aghoreshvara, a large and well proportioned stone-building, constructed in a mixed style with a unique conception. This temple was ransacked by Tippu Sultan during an invasion on Nayakas of Ikkeri.



Fig. Ikkeri Temple



Fig. Keladi Temple

Keladi was the first capital of Keladi Nayakas. The place is 6 Kms to the north of Sagar taluk. At almost the northern end of the village, there is a large courtyard which is enclosed in modern tiled verandah. In the middle of the courtyard stand 3 temples Rameshvara temple which is in the centre, Veerbhadreshvara temple which is to the right and the Parvati temple which is to the left. The Rameshvara & Veerbhadreshvara temples are a mixed pattern of hoysala & southern or Dravidian style. The Parvati temple is a small building which has old back portion built of stone and the front modern portion built of brick. There is also a well maintained Keladi Museum, which has a collection of copper inscriptions, palm

leaves and coins from Nayaka's period.

Ballegavi is situated 21 Kms from Shikaripura taluk. This place is also known as Dakshina Kedara was the capital of Banawasi rulers in the 12th century. The place is associated with several eminent Veershaiva saints like Allama prabhu, Akka-Mahadevi, Animishayya and Ekantada Ramayya. There are remains of many temples, shrines, Mastikals, viragals and nisidigals. Some important temples are Kedareshvara temple made out of soap stone and is a fine specimen of late Chalukyan type, Tripurantakeshvara temple resembling the works of Belur and halberd, Prabhudeva temple is a smaller Trikutchala structure, etc..



Fig. Bellagavi Temple



Fig. Shivappa Naik Palace

Shivappa Naik Palace situated on the banks of river Tunga in the busy lanes of Shimoga city. A 16th century palace built by Shivappa naik of Keladi. A good architectural piece built with rose wood. The palace is equipped with museum which has several interesting and rare archaeological collections of stone carvings and antiques of Keladi period. Recovered idols of Hoysala and Chalukya period from the early 16th century to late 18th century are displayed here.

Kuppali, is a small village in Thirthahalli taluk. It is famous for being the birthplace and childhood home of the renowned Kannada playwright and poet Kuvempu and Poornachandra Tejaswi, the son of Kuvempu and a famous Kannada writer himself. The childhood home of Kuvempu at Kuppali has been converted into a museum by Rashtrakavi Kuvempu Pratishtana (a trust dedicated to Kuvempu). Kavishaila is a rock monument made of megalithic rocks and dedicated to Kuvempu. It is on the top of a small hill in Kuppali. Arranged in a circular fashion, the rocks have been placed to resemble the Stonehenge in England. At the centre of this rock monument is the place where Kuvempu was laid to rest after his death and a memorial has been constructed at that location. Near this monument, is a small rock where Kuvempu used to sit and discuss about literature and other topics with his other litterateur friends. A rock containing the etched signatures of Kuvempu, B. M. Srikantiah and T S Venkannaiah is present near the monument.

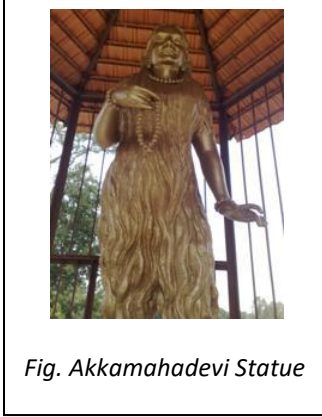


Fig. Akkamahadevi Statue

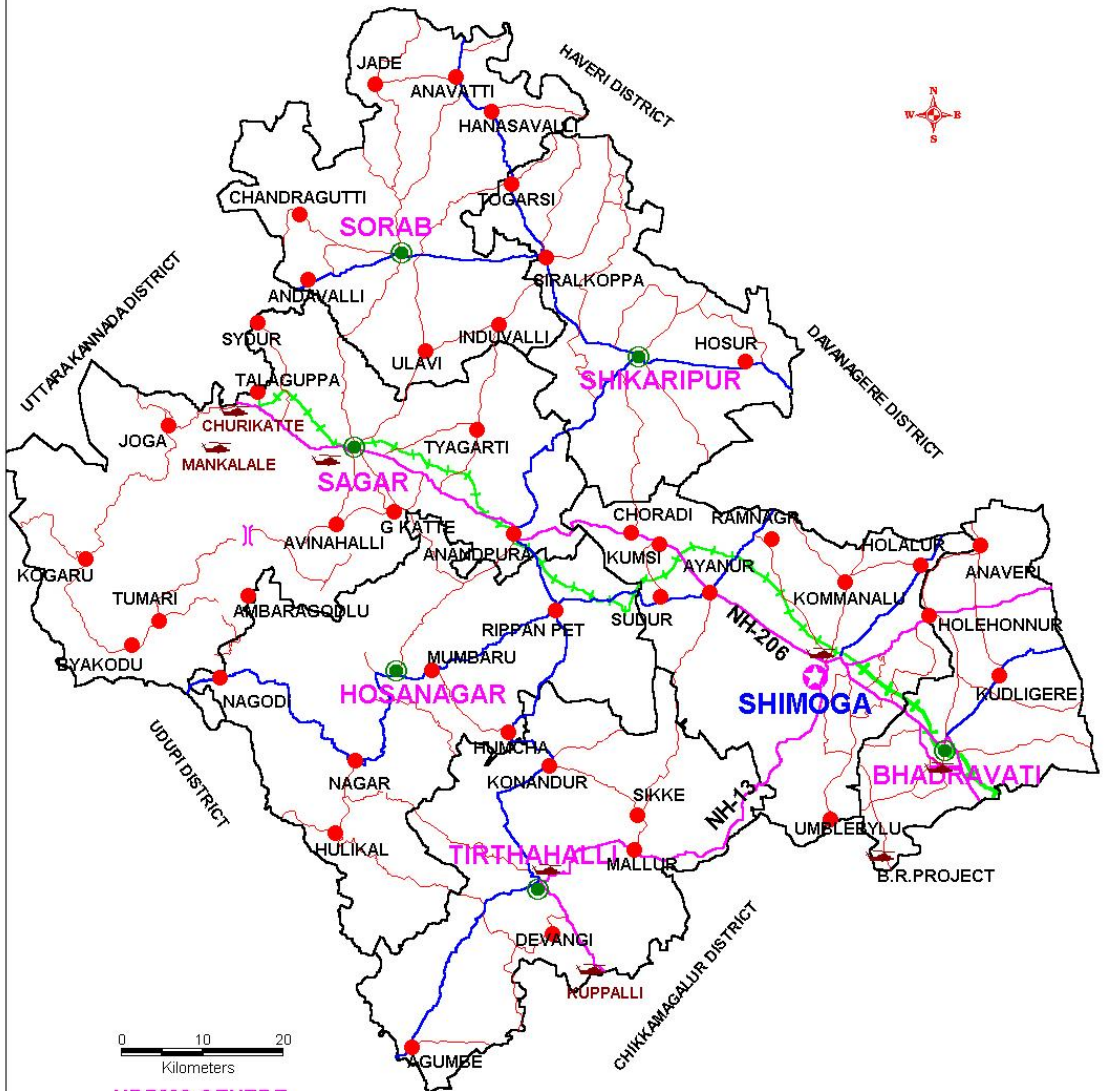
Udutadi (or Udugani), a small village in Shikaripura taluk where the prominent figure of the Veerashaiva Bhakti movement of the 12th century Karnataka Akkamahadevi was born. She was born in 1130CE and lived until 1160. She worked for the welfare of women. Her Vachanas in Kannada, a form of didactic poetry are considered her greatest contribution to Kannada Bhakti literature. In all she wrote about 430 Vachanas which is relatively fewer than that compared to some other saints of her time.

BASIC MAPS

SHIMOGA DISTRICT MAP



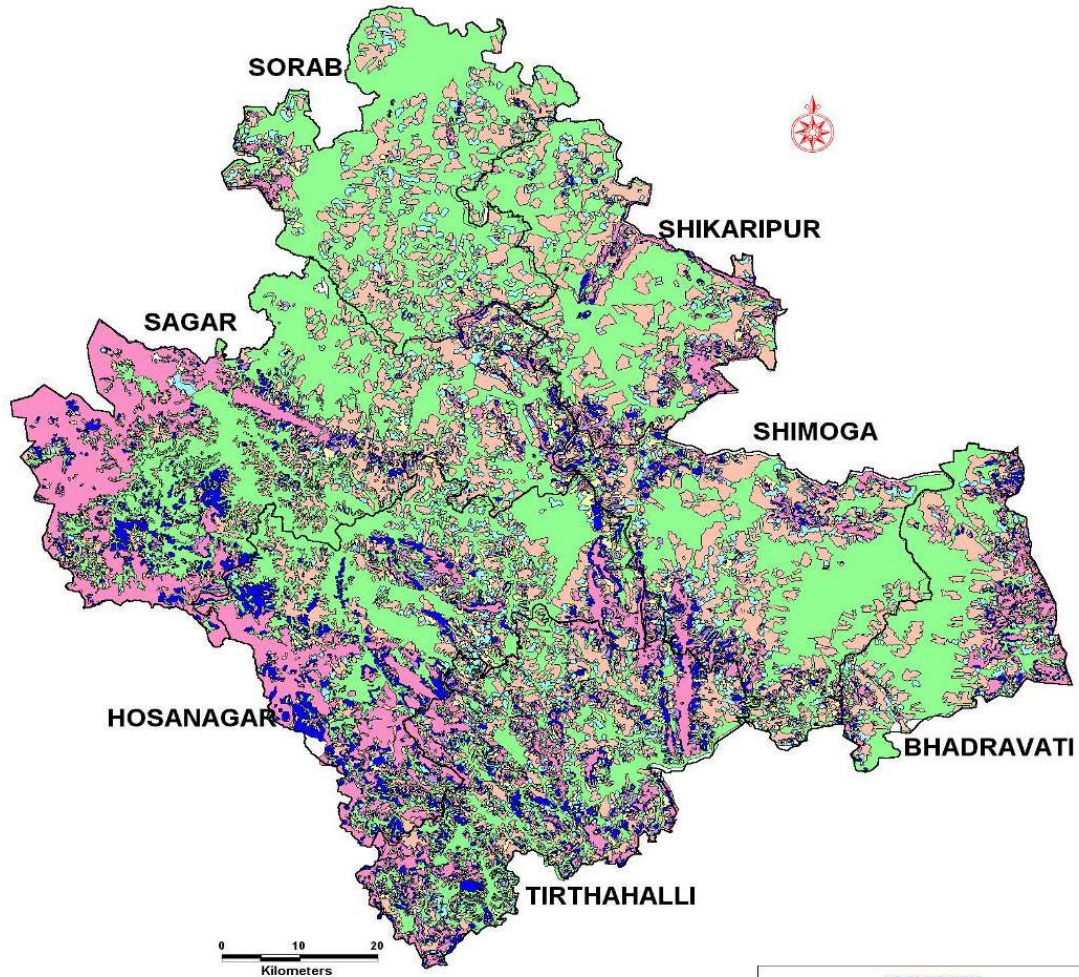
TRANSPORT NETWORK MAP OF SHIMOGA DISTRICT



**NRDMS CENTRE
SHIMOGA**
Source : SOI & PWD, Shimoga

REFERENCE	
	NATIONAL HIGHWAY
	STATE HIGHWAY
	MAJOR DIST. ROAD
	TALUK BOUNDARY
	RAILWAY LINE
	HELIPADS

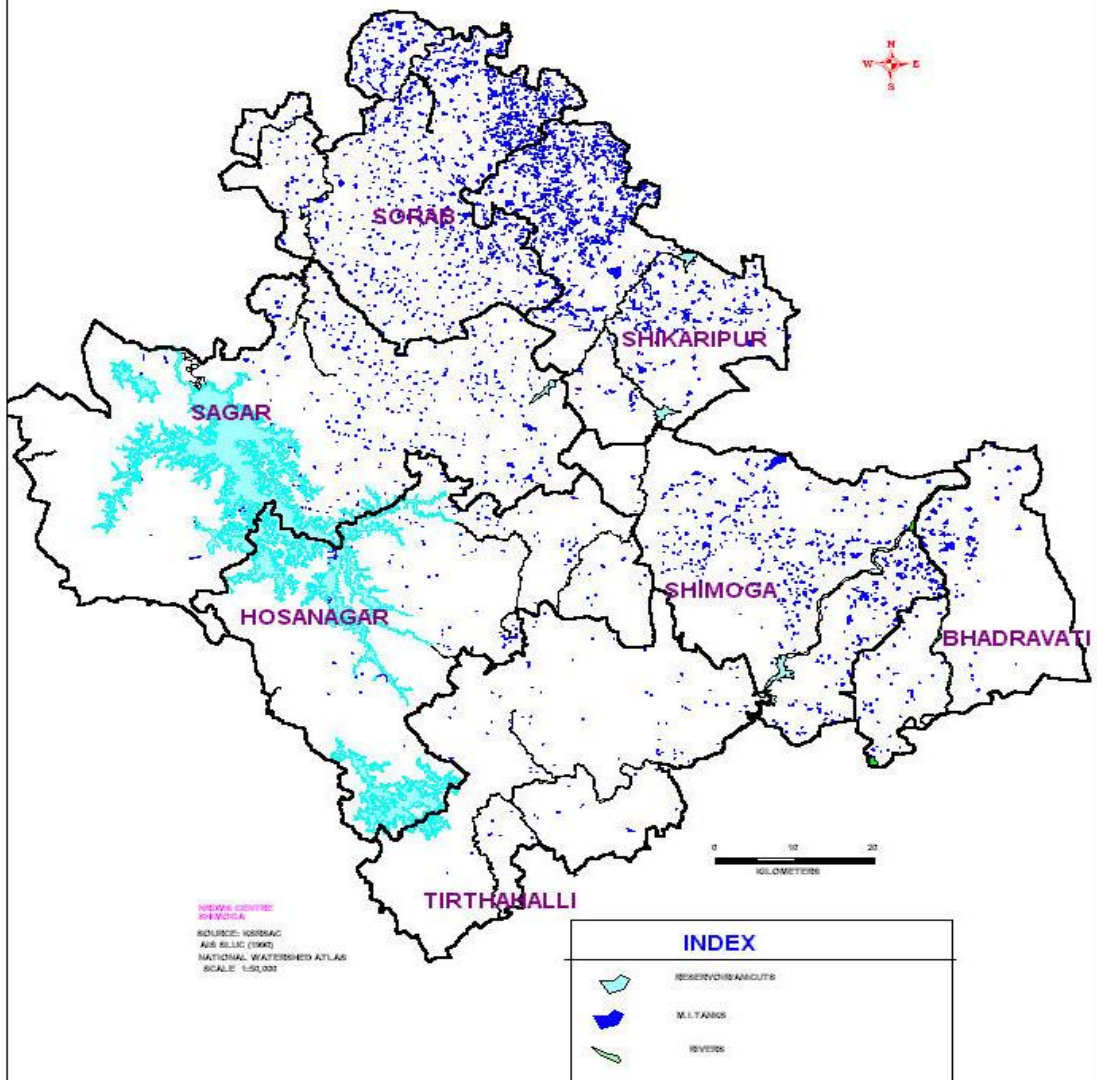
SLOPE MAP OF SHIMOGA DISTRICT



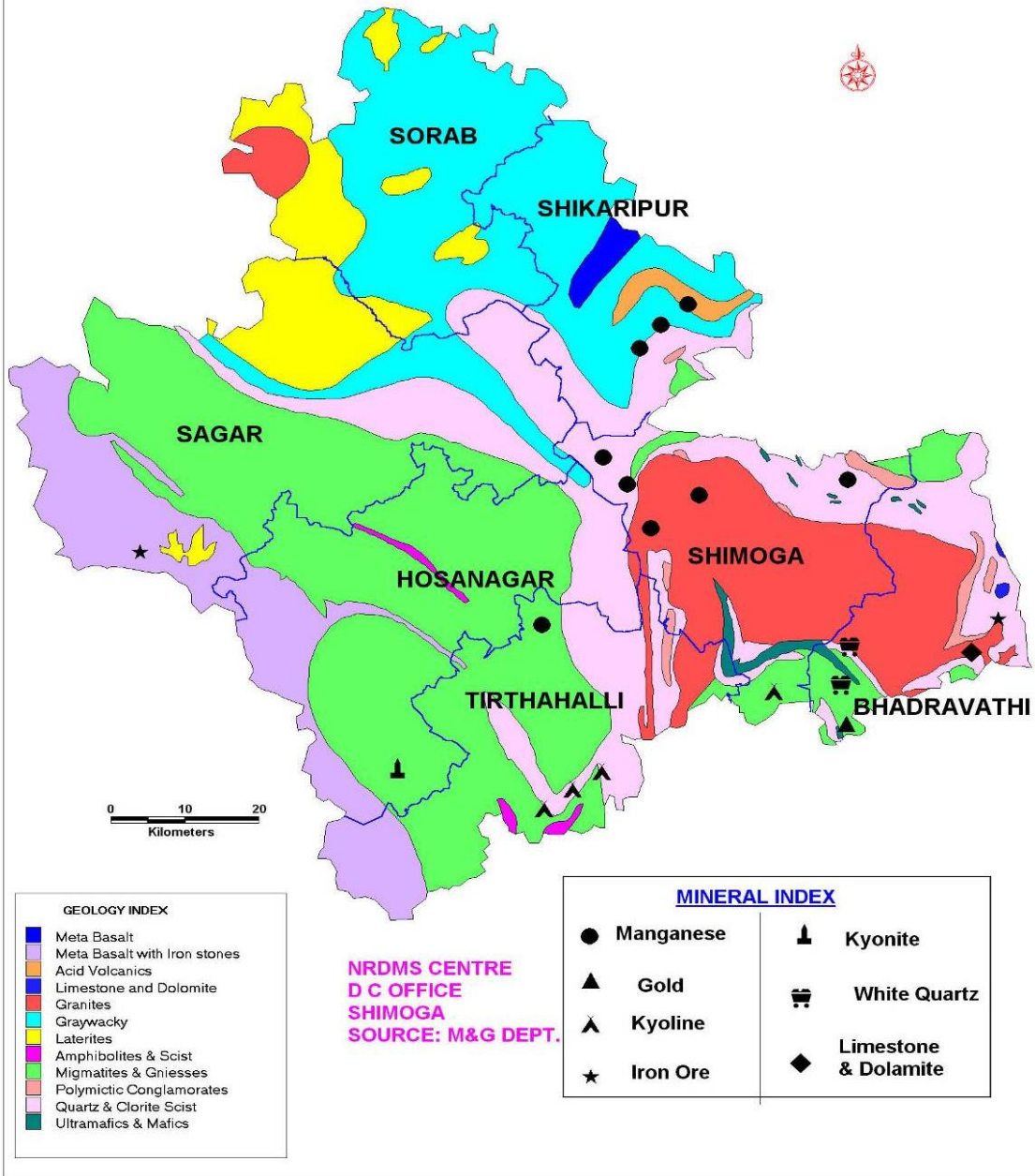
NRDMS CENTRE
SHIMOGA

REFERENCE	
Green	NEARLY LEVEL - 0-1%
Light Green	VERY GENTLY LEVEL - 1-3%
Yellow	GENTLY SLOPING - 3-5%
Orange	MODERATELY SLOPING - 5-10%
Red	STRONGLY SLOPING - 10-15 %
Dark Red	MODERATELY STEEP TO STEEP - 15-35 %
Black	VERY STEEP SLOPING - > 35 %

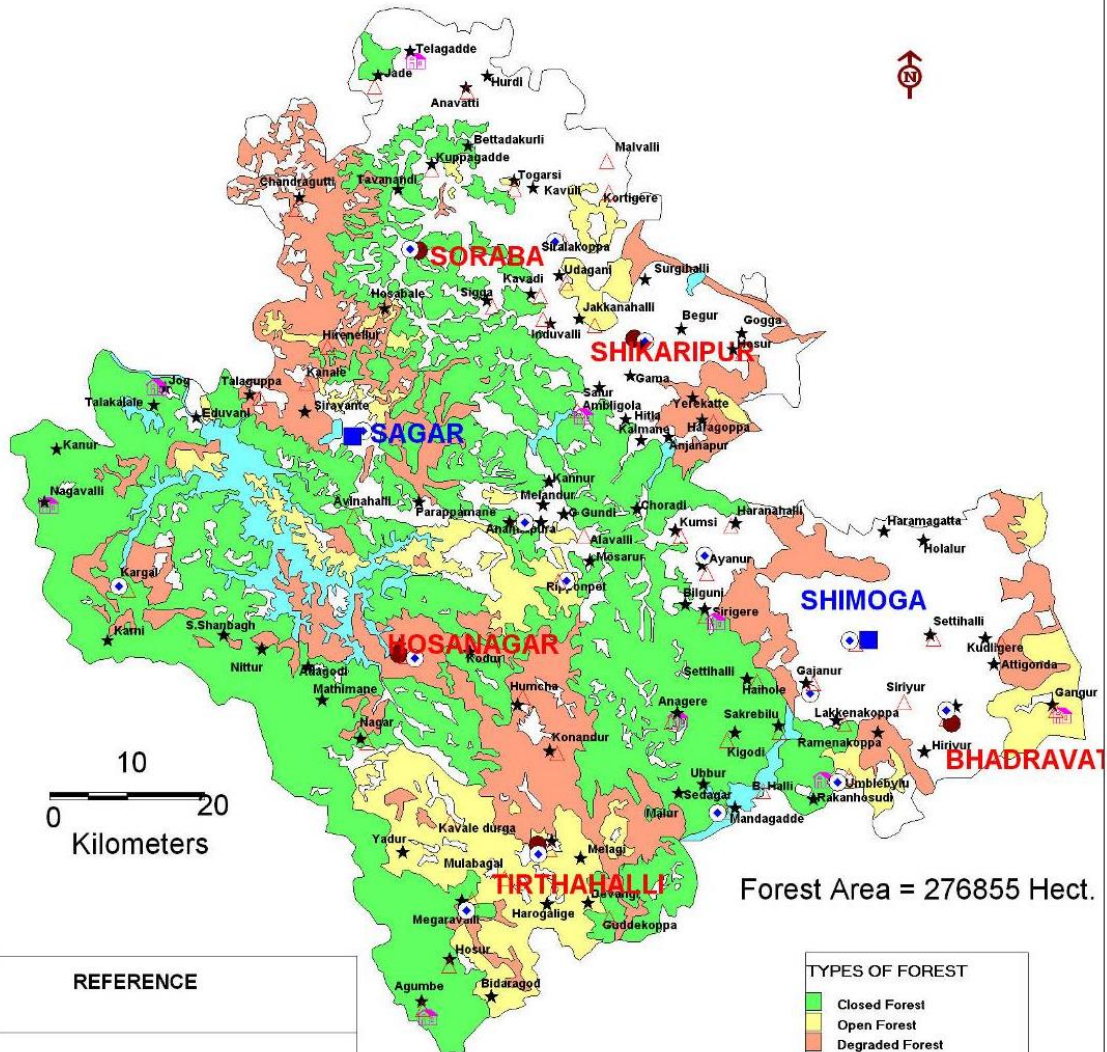
LOCATION OF MINOR IRRIGATION TANKS IN SHIMOGA DISTRICT



GEOLOGICAL AND MINERAL MAP OF SHIMOGA DISTRICT



FOREST MAP OF SHIMOGA DISTRICT



Forest Area = 276855 Hect.

REFERENCE	
	DIV. HQ.
	TALUK HQ.
	RANGE HQ.
	SECTION HQ.
	BEAT HQ.
	FRH

TYPES OF FOREST	
	Closed Forest
	Open Forest
	Degraded Forest
	Water Bodies

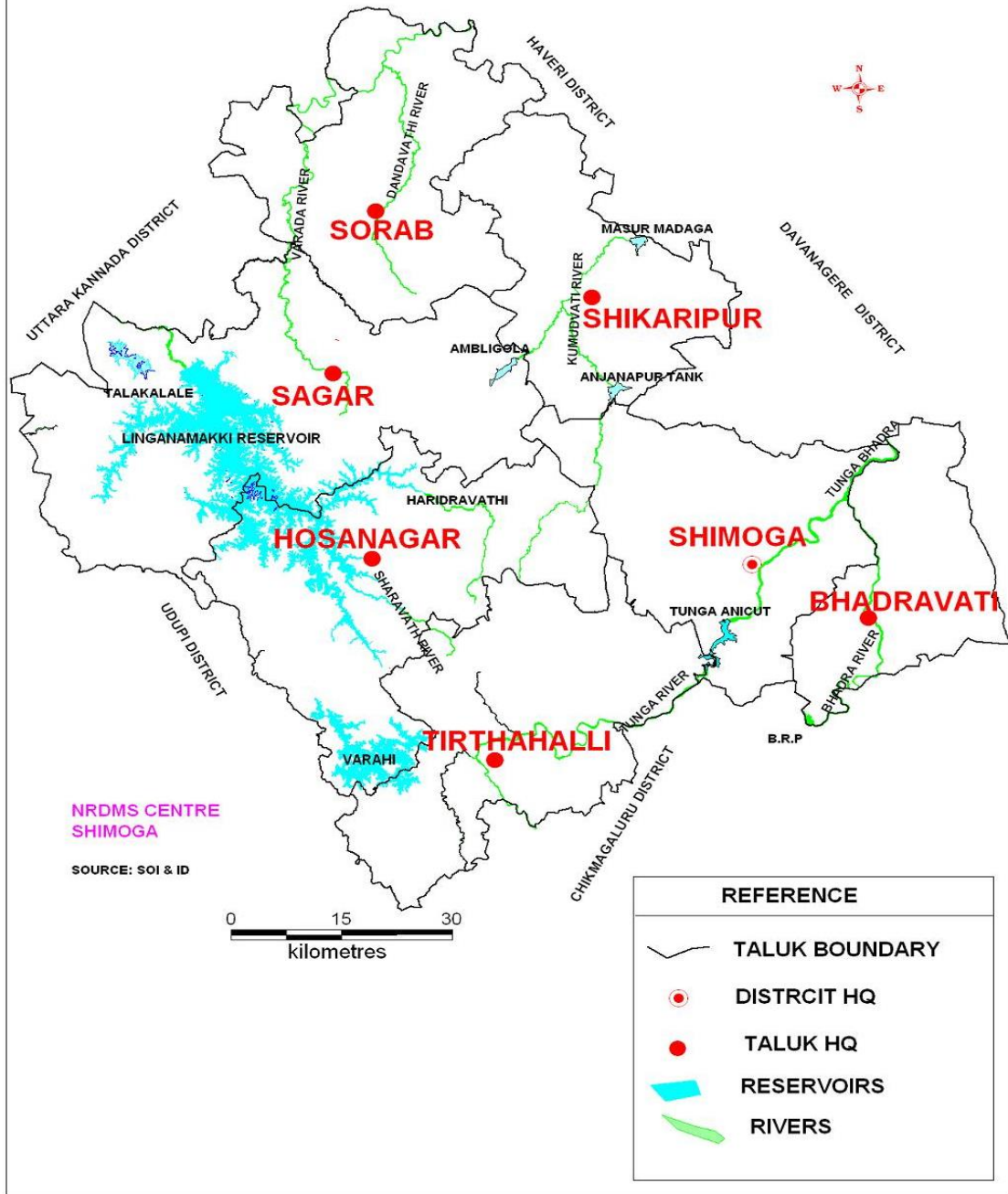
NRDMS CENTRE
D C OFFICE
SHIMOGA

Source: Forest Dept.

LOCATION OF HEALTH FACILITIES WITH GRAM PANCHAYATH BOUNDARIES IN SHIMOGA DISTRICT



RIVERS, RESERVOIRS/ANICUTS MAP OF SHIMOGA DISTRICT



Shimoga District Information:

This section describes the general statistics about the Shimoga District.

Location	Shimoga District, Karnataka, India
Latitude	13Degree 27 minutes to 14Degree 39Minutes N
Longitude	74 Degree 37 Minutes to 75Degree 52 Minutes E
Height	569 Mtrs. Altitude above M.S.L
Area	8477 Sq. Kms.
Forest Area	3809.63 Sq. Kms
Rainfall	1819.0 mm & rainy days are 86 (Dist. Average)
Road Length	2600 Kms.
Dams	Tunga, Bhadra-BRP, Linganamakki, Anjanapura, Ambligola, Maani
Tanks	4173
ULBs	09
Rivers	Tunga, Bhadra, Sharavathi, Kumudvati & Varada
Temperature	Min. 20°C Max. 35° C
Agriculture Area	Khari f - 1,80,000 ha. , Rabbi -1,000 Ha.
Horticulture Area	43,000 Ha.

Taluk, GP, Village information & Area:

Taluk	GP	ULBs	Villages inhabited	Villages Uninhabited	Area Sq. KM
Shimoga	42	1	196	18	1113
Bhadravathi	41	1	135	10	690
Thirthahalli	38	1	245	2	1254
Sagar	35	2	230	8	1940
Shikaripura	44	2	155	21	909
Sorab	41	1	281	25	1148
Hosanagara	30	1	202	2	1423
Total	271	9	1444	86	8477

Population:

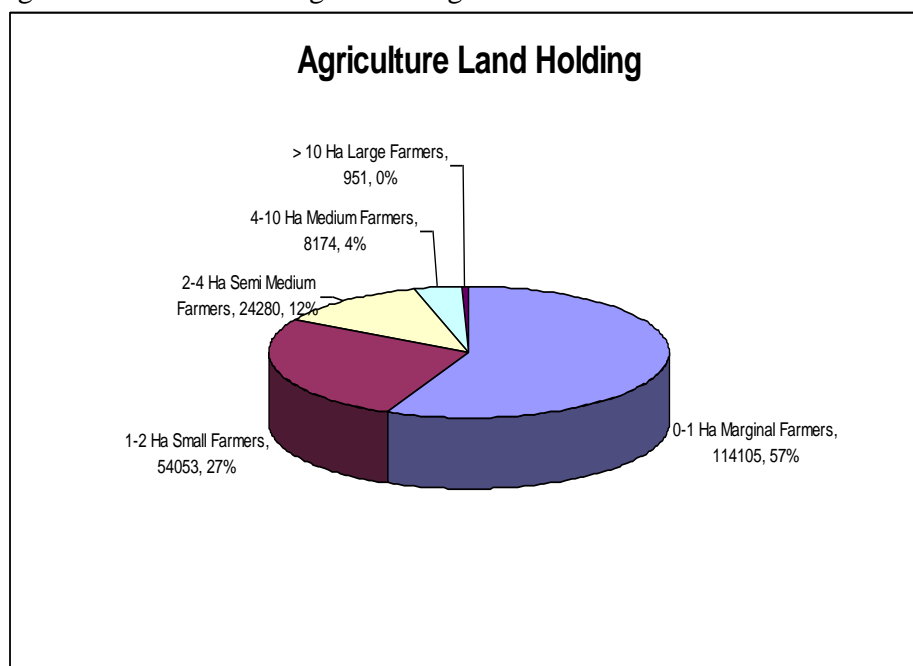
POPULATION: (2001)				POPULATION: (2011)			PROJECTED POPULATION 2019
Taluk	Male	Female	Total	Male	Female	Total	
Shimoga	226928	218264	445192	255317	251766	507083	563982
Bhadravathi	171917	167072	338989	170291	169639	339930	340526
Thirthahalli	70734	72473	143207	69593	71860	141453	141052
Sagar	100977	100018	200995	102276	103836	206112	210693
Shikaripura	108344	105246	213590	122527	119416	241943	260222
Sorab	94267	91305	185572	101297	99546	200843	213998

Hosanagara	57392	57608	115000	58503	59645	118148	120868
Total	830559	811986	1642545	879804	875708	1755512	1851341

Taluk-wise Population of Shimoga (2001 & 2011 census)

Agriculture:

a) Agricultural Land Holdings – Shimoga District



Source: District Statistical Office data (According to agricultural census 2015-16)

There are 201563 numbers of farmers, holding a total area of 260961 ha in Shimoga District. No. of small and marginal farmers are on the increase year after year.

This includes the area sown during kharif, Rabi & summer season. Out of an area of 2.61 lakh Ha. area under agricultural crops is to the extent of 1.78 lakh ha which accounts for 68.2% of the total area sown. Area under Horticultural crops Viz, Areca nut. Fruits crops, vegetable, floriculture, coconut, areca nut is 0.74 lakh ha (34%).

b) Land holding pattern in Shimoga District:

Taluk	Marginal(<1 ha)		Small (1-2 ha)		Semi (2-4 ha)		Medium (4-10ha)		Large (> 10 ha)	
	No.	Area	No.	Area	No.	Area	No.	Area	No.	Area
Bhadravathi	25151	12152	7148	9741	2876	7660	680	3684	25	393
Hosanagara	7632	4271	4515	6362	1994	5325	681	3839	68	910
Sagara	15973	8030	7014	9671	2775	7414	969	5675	149	2244
Shikaripura	17919	10114	11457	16261	4906	13164	1447	7923	97	1371
Shimoga	16379	8941	8875	12516	4385	11793	1472	8215	128	1819
Soraba	16400	8970	9364	13225	5000	13490	2110	12342	373	5859
Thirthahalli	14651	7179	5680	7821	2344	6266	815	4698	111	1623
Total	114105	59657	54053	75597	24280	65112	8174	46376	951	14219

Source: District Statistical Office data (Acc to agricultural census 2015-16)

c) Agro-Climatic Zone:

Shimoga District comprises of 7 taluks, and they come under 2 Agro-climatic zones namely *Southern transition Zone* (Zone No.7– Shimoga, Bhadravathi and Shikaripura taluks) and *Hilly Zone* (Zone No.9- Hosanagara, Sagara, Thirthahalli and Soraba taluks), The weather, cropping and rainfall pattern vary according to Agro climatic Zones.

d) Agricultural Crops:

Major Agricultural Crops viz., Paddy, Maize, Ragi, Cotton, Sunflower, Groundnut Sugarcane, Pulses and Vegetables are largely grown in Southern transition zone of the district. In this Paddy is grown under assured irrigation in summer season in Bhadravathi and Shimoga taluks. Paddy, pulses and Arecanut and plantation crops are the major crops grown Hilly zones of the district.

Land use and Land Holdings 2018-19:

Sl. No	Name of Taluks	Geographical Area(ha)	Land not available for Cultivation (ha)				
			Forest	Non Agricultural	Barren	Total	Cultivated Area
1	2	3	4	5	6	7	8
1	Bhadravathi	69010	18239	7911	789	26939	40507
2	Hosanagara	142279	35027	21112	4157	60296	19548
3	Sagara	194009	66125	29486	930	96541	27551
4	Shikaripura	90984	40173	5193	829	46195	55539
5	Shivamogga	111358	42892	8512	1798	53202	47651
6	Sorba	114767	26667	6442	3150	36259	50653
7	Thirthahalli	125377	47732	10052	1659	59443	26365
	Total	847784	276855	88708	13312	378875	267814

Source: District Statistical Office data (According to agricultural census 2017-18)

TOTAL POPULATION SEX RATIO DENSITY PROJECTED POPULATION AND CHILDREN LESS THAN 6 YEARS.

Sl. No	Name of Taluks	Total No. of Households			Projected Population 2011	Sex Ratio (per 1000 Men)	Density of Population (Per Sq. km)	Children in the age of 0-6 Years
		Rural	Urban	Total				
1	2	3	4	5	6	7	8	9
1	Bhadravathi	36253	34784	71037	339930	972	491	40758
2	Hosanagara	21645	1078	22723	118148	1004	81	14496
3	Sagara	28288	12337	40625	206112	991	104	24759
4	Shikaripura	32094	8752	40846	241943	971	235	29912
5	Shivamogga	32671	55386	88057	507083	962	400	57295
6	Sorba	34876	1566	36442	200843	969	162	24651
7	Thirthahalli	27784	3318	31102	141453	1025	114	16292
	Total	213611	117221	330832	1755512	984	1587	208163

* Average Source: District Statistical Office data.

Rainfall:

The District enjoys tropical climate throughout the year. Weather is hot and humid in the Eastern part and is very pleasant in the remaining parts of the District. Summer prevails between March to early June. Rainy months starts from early June to September. October and November months experience scanty rain by North Eastern Monsoon. The Winter commences in the Mid November and ends in the middle of February.

Rainfall is typically measured using a rain gauge. It is expressed as the depth of water that collects on a flat surface and is routinely measured with an accuracy upto 0.1 mm on 0.01mm. There are totally 104 rain gauges in the District. Observation of daily rainfall is made at 8.30 a.m and record the total precipitation for the preceding 24 hour's

The Taluk wise Rainfall data for the last 10 years suggests that the average rainfall in the District varies between 632.9 mm at Shikaripura during 2016 and 3565.0 mm at Thirthahalli Taluk during 2018.

The Taluk wise Normal and Actual rainfall data and 10 years average datas are as under.

**Talukwise Rainfall
(Normal, Pre-Monsoon & South West Monsoon, 2018)**

Sl. No	Name of Taluks	Annual Normal Rainfall	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
1	2	3	4	5	6	7	8	9	10	11	12	13
1	Bhadravathi	859.2	1302.9	748.6	965.5	769.6	1124.9	1117.7	972.3	680.4	744	872
2	Hosanagara	3040.5	3250.2	804.9	2709.7	2202.5	3321.3	3118.8	2130.8	1943.6	2435	2997
3	Sagara	2817.7	2727.5	885.2	3051.1	2346.1	3138.1	2857.4	2060.8	1918.9	2258	2992
4	Shikaripura	990.1	1247.8	986.5	1089.1	902.7	1317.8	1357.7	736.2	632.9	808	954
5	Shivamogga	979.5	1333.1	1042.2	983.3	744.3	970.0	1129.8	974.8	646.7	843	957
6	Sorba	1782.9	1796.1	1020.5	1583.3	1188.8	1675.3	1877.3	1032.5	947.2	1051	1427
7	Thirthahalli	3556.2	3532.2	945.2	3201.8	2342.2	3555.8	2981.3	2302.0	2087.7	2390	3565
	District Average	2237	2167	919	1941	1499	2158	2063	1458	1265	1504	1966

(DATA PROVIDED BY KSNDMC)

Irrigation:

Out of 267814 Hectares of cultivated land during 2018-17 143205 ha. of land was under irrigation. Out of which 45240 ha was irrigated under cannels, 53621 ha was irrigated under tanks 4932 ha was irrigated by dug wells, 30132 ha irrigated by bore wells and 30975 ha was irrigated by lift irrigation and 5255 ha by other types of irrigations.

The taluk wise irrigation details are as under during 2018-19.

Name of Taluks	Canals		Tanks		Dug wells		Bore wells		Lift irrigation	
	Length in KM	Area irrigated in hectare	No	Area irrigated	No	Area irrigated	No	Area irrigated	No	Area irrigated
Bhadravathi	132.7	23707	336	918	578	517	2689	4027	476	660
Hosanagara	0.0	0	900	5398	1724	1428	565	410	438	549
Sagara	2.0	57	760	8530	2330	1957	1094	2075	316	352
Shikaripura	119.6	7021	1276	7533	70	0	7711	13407	366	126
Shivamogga	124.0	12139	778	3515	329	320	3719	7555	672	898
Sorba	0.00	0	1186	17051	677	350	4374	13906	471	80
Thirthahalli	0.00	0	741	9498	1965	2611	818	1097	1413	1440
Total	378.3	42924	5977	52443	7673	7183	20970	424477	4152	4105

Education:

There is a bright educational scenario in the District. There are 2333 Primary Schools, 483 High Schools, 121 P.U Colleges, 46 Degree Colleges, 10 Polytechnic Colleges, 02 Engineering Colleges, 02 Medical College and 02 Dental College. Technical education is accessible in taluk head Quarters also. The literacy rate of the District is 75%. Below are the taluk wise tables showing literacy rate and educational institutions during 2017-18.

Literacy Percentage (Census 2011)

Sl.No	Name of Taluks	Male (%)	Female (%)	Total (%)
1	2	3	4	5
1	Bhadravathi	85.19	73.9	79.53
2	Hosanagara	86.46	73.45	79.87
3	Sagara	87.64	74.54	81.01
4	Shikaripura	87.97	69.44	75.77
5	Shivamogga	87.24	78.88	83.08
6	Sorba	85.63	71.62	78.67
7	Thirthahalli	88.08	77.54	83.06
	District Average	86.07	74.84	80.45

Educational Institutions:

Sl. No	Name of Taluks	Primary Schools	High Schools	PU Colleges	First Grade Colleges	Medical /Dental Colleges	Polytechnic Colleges	Engineering Colleges
1	2	3	4	5	6	7	8	9
1	Bhadravathi	359	89	19	7	0	2	0
2	Hosanagara	244	39	8	2	0	0	0
3	Sagara	363	52	15	4	0	1	0
4	Shikaripura	287	72	21	5	0	0	0
5	Shivamogga	508	145	41	23	4	4	2
6	Sorba	332	43	5	2	0	2	0
7	Thirthahalli	237	43	12	3	0	1	0
	Total	2333	483	121	46	4	10	2

GEOLOGY OF SHIMOGA DISTRICT

PHYSICAL FEATURES: -

The district is part and parcel of Malnad track. Western Ghats and large part of the district comprising of the taluks of Sorab, Sagar, Hosanagara and Thirthahalli lies in Malnad track. The Sikaripura, Shimoga and Bhadravathi are in Semi-Malnad. The Western Ghats form the basin dividing the western slope of basin forming the 'Sharavati' basin and eastern slope forming 'Tungabhadra' basin.

Geology: -

The district is composed of several rock types of diverse origin and can be classified into three groups i.e. peninsular gneiss, Dharwad super group and younger formations. The Migmatites and older Granites forms the peninsular gneiss and it forms the basement for other formations. The Dharwad super group composed of Bababudan and Chitradurga group. The Bababudan group consists of meta-volcanoes, conglomerates, quartzite's limestone dolomites and grey whacks etc. They occur in the form of belt called Shimoga belt. All the important economic minerals like Manganese, Iron ore, quartz, Titan magnetite, limestone etc are concentrated in Dharwad super group.

MINING LEASES IN SHIMOGA DISTRICT

There are 6 mining leases are existing in Shimoga district presently. Total working area of all the mining leases is 158.39 hectares.

1. LIMESTONE

Limestone mining is carried out in Bandigudda Vg in Bhadravathi Tq by M/S VISL authorities Bhadravathi over an extent of 97.12 Hectares for their own steel plant.

2. CHINA CLAY (KAOLIN)

The deposits of Kaolin were seen in Thirthahalli Tq are the results of chemical weathering of aluminous rock, Kaolin occurs in association with granitic gneiss. And it is used for Porcelains' China ware etc. The major producer of this mineral is M/S Mysore minerals Ltd. The total area of mining lease is 34.06 Hectares.

3. MANGANESE

The important manganese ore deposits were concentrated along the Shimoga schist belt particularly in Kumsi, Shankargudda Ganger – Siddharahalli and Hosur village in Sikaripura Tq. The ore occurs in association with phyllites and schist in the form of lenses and packets. The important ore minerals are psilomelone and pyrolucite. M/S Mineral Enterprises, Ltd, Bangalore is the main producer of manganese. The total area is 17.50 acres.

4. KYANITE

The only known deposits of kyanite are situated near 'Yedur vg. in Hosanagara Tq. It occurs in associations with granitic gneiss. The total area of mining lease held by Sri H. Yusuf Ali Khan Total area is 7.29 Hectares.

5. IRON ORE

Hematite iron ore occurs in association with weathered Iron-formation near Marathi vg in Sagar Tq. The mining was held by Sri B.R. Yogendranath Singh, Bangalore. Total area is 7.29 Hectares.

QUARRY LEASES

Building stones, ordinary sand and Brick earth are the important minor minerals in Shimoga district. Granite and granitic gneiss are the only important building material occurs in almost all taluks in Shimoga District.

1. Shimoga Taluk

Quarry leases of building stone material are existing in Sulebylu Village. Gajjannahalli and Kallgangur villages in Shimoga Taluk over an extent of 32.25 acres.

2. Thirthahalli Taluk

Most of the quarry leases building stone in Shimoga district are situated in Thirthahalli Taluk in Melinakuruvalli village, Buklapur village, Suralibalebylu and Geruballi villages over an extent of 52.30 acres.

3. Bhadravathi Taluk

Building stone quarry leases are situated in Moodalvitthalapur village near Holehonnur and Kudligere village and Anthergange villages in Bhadravathi Taluk over an extent of 27.00 acres.

4. Shikaripura Taluk

Building stone query leases are situated in Harogoppe village in Shikaripura Taluk over an area of 0.20 acres only.

5. Hosanagara Taluk

In Hosanagara Taluk building stone leases are situated in Ramachandrapur, Masagalli, Karadiga etc., villages over an extent of 5.20 acres

6. Sagar Taluk

In Sagar Taluk Building stone quarry leases are situated in Kanike, Gantinakoppa, Chikkamattur village and Latenite quarries are situated in Tyagarthi, Mallandur, Brahman Bedur, Kerehithlu etc village area an extent of 22.30 acres

7. Soraba Taluk

Building Stone quarry leases like granite and literate material are situated in Bastikoppa, Hurali villages over an extent of 3.00 areas.

PREVENTIVE MEASURES TO BE TAKEN IN CASE OF NATURAL DISASTER.

- ❖ Prevention of spreading of mine fires and their mitigation
- ❖ Landslides and other mass movements can be predicted and the damage minimized
- ❖ Measures of landslide control are avidness, surface drainage sub-surface drainage, vegetation, blasting and hardening.
- ❖ In case of earth quakes emergency evacuation, scarch resume and relief from important action plan in disaster management
- ❖ Programs of disaster management/ mitigation encompass a wide range of options ranging from issuance flood warnings to reduction of flooding to actual evacuation.

CHAPTER-3

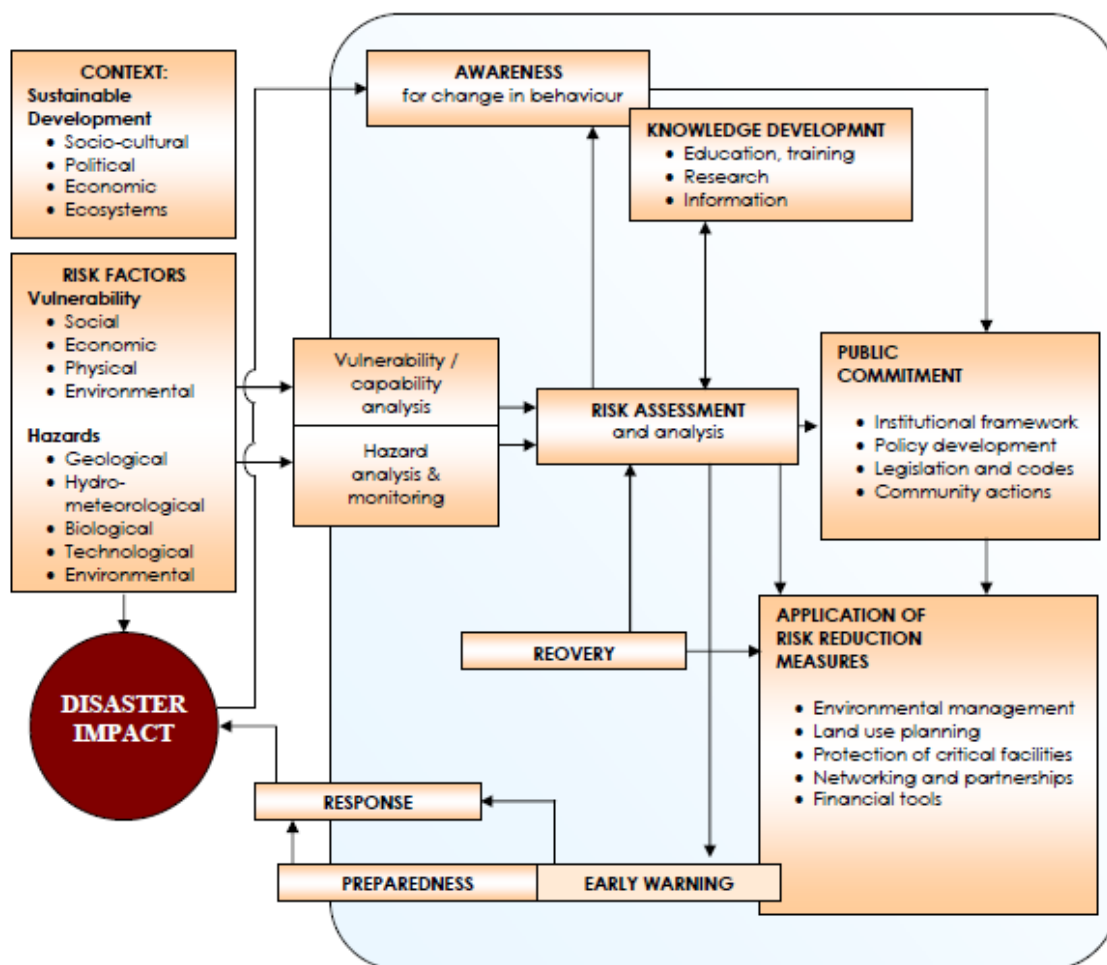
HAZARD, RISK, VULNERABILITY, CAPACITY (HRVC) ANALYSIS

This chapter deals with potential hazards which may have to be faced by the district, probable time of occurrence, vulnerability of the district to different disasters its analysis and analysis of the risk involved. This acts as a reference, upon which mitigative measures, rescue, restoration and rehabilitation plan etc. are planned successfully. Any error in HRV analysis will compound the problems / effects of a disaster. Therefore a careful attempt has been made to achieve the realistic analysis of hazard, risk and vulnerability pertaining to Shimoga District.

OVERVIEW

A disaster risk reduction strategy essentially includes a proper hazard, vulnerability and risk assessment. It also requires resources, institutional & operational capacities and infrastructural facilities like GIS tools & software to execute them. The essential features of such a strategy would require hazard mapping, assessment of hazard risks, and determination of probability of hazard event, vulnerability & capacity assessment on various environmental, social, economic and physical aspects followed by proper risk analysis.

The graphic representation in the figure below describes the main context and activities involved in disaster risk reduction strategization. For the development of any disaster risk reduction strategy, these are the elements to be taken into consideration. The sections of the global review have been organized around these issues, with exception of preparedness, response and recovery initiatives.



FRAME WORK FOR DISASTER RISK REDUCTION

KEY TERMINOLOGIES AND CONCEPTS

Before getting into the details of the document it is important to define the Terminologies used within the baseline document. In order to have a common understanding and common usage of disaster the disk reduction concepts the terminologies have been used from UNISDRs 2004 and 2009 version of “Terminology on Disaster Risk Reduction”. The most relevant definitions are as follows:

□ Hazard

A potentially damaging physical event, phenomenon or human activity, which may Cause the loss of life or injury, property damage, social and economic disruption or Environmental degradation

Hazards can include latent conditions that my represent future threats and can have different origins: natural (geological, hydro- meteorological and biological) and / or induced by human process (environmental degradation and technological hazards).

Hazards can be single, sequential or combined in their origin and effects. Each hazard is characterized by its location, intensity and probability.

□ **Vulnerability**

A set of conditions and processes resulting from physical, social, economical and environmental factors, which increase the susceptibility of a community to the impact of hazards

Positive factors, that increase the ability of people and the society they live in, to cope effectively with hazards, that increase their resilience, or that otherwise reduce their susceptibility, are considered as capacities.

□ **Risk**

The probability of harmful consequences, or expected loss (of lives, people injured, property, livelihoods, economic activity disrupted or environmental damaged) resulting from interactions between natural or human induced hazards, and vulnerable / capable conditions. Conventionally risk is expressed by the equation

$$\text{Risk} = \text{Hazards} \times \text{Vulnerability} / \text{capacity}$$

Beyond expressing a probability of physical harm, it is crucial to appreciate that risks are always created or exist within social systems. It is important to consider the social contexts in which risks occur and that people therefore do not necessarily share the same perceptions of risk and their underlying causes.

Risk assessment / analysis

A process to determine the nature and extent of risk by analyzing potential hazards and evaluating existing conditions of vulnerability / capacity that could pose a potential threat or harm to people, property, livelihoods and the environment on which they depend

The process of conducting a risk assessment is based on a review of both technical features of hazards such as their location, intensity and probability, and also the analysis of the physical, social and economic dimensions of vulnerability, while taking particular account of the coping capabilities pertinent to the risk scenarios.

□ **Coping capabilities / capacity**

The manner in which people and organizations use existing resources to achieve various beneficial ends during unusual, abnormal, and adverse conditions of a disaster event or process

The strengthening of coping capacities usually builds resilience to withstand the effects of natural and other hazards.

□ **Resilience / resilient**

The capacity of a system, community or society to resist or to change in order that it may obtain an acceptable level in functioning and structure. This is determined by the degree to which the social system is capable of organizing itself, and the ability to increase its capacity for learning and adaptation, including the capacity to recover from a disaster.

□ **Disaster**

A serious disruption of the functioning of a community or a society causing widespread human, material, economic or environmental losses which exceed the ability of the affected community / society to cope using its own resources.

A disaster is a function of the risk process. It results from the combination of hazards, conditions of vulnerability and insufficient capacity or measures to reduce the potential negative consequence of risk.

□ **Risk management**

The systematic management of administrative decisions, organization, operational skills and responsibilities to apply policies, strategies and practices for disaster risk reduction.

□ **Disaster risk reduction (disaster reduction)**

The systematic development and application of policies, strategies and practices to minimize vulnerabilities and disaster risks throughout a society, to avoid (prevention) or to limit (mitigation and preparedness) adverse impact of hazards, within the broad context of sustainable development.

□ **Prevention**

Activities to provide outright avoidance of the adverse impact of hazards and related environmental, technological and biological disasters.

Depending on social and technical feasibility and cost/ benefit considerations, investing in preventive measures is justified in areas frequently affected by disaster. In the context of public awareness raising and education, prevention refers to attitude and behaviour leading towards a “culture of prevention”.

□ **Mitigation**

Structural and non-structural measures undertaken to limit the adverse impact of natural hazards, environmental degradation and technological hazards.

□ **Preparedness**

Activities and measures taken in advance to ensure effective response to the impact of disaster, including the issuance of timely and effective early warnings and the temporary removal of people and property from a threatened location.

□ **Early warning**

The provision of timely and effective information, through identified institutions, that allow individuals at risk of a disaster, to take action to avoid or reduce their risk and prepare for effective response.

Early warning systems consist of three elements (i) forecasting and prediction of impending events, (ii) processing and dissemination of warnings to political authorities and population, and (iii) undertaking appropriate reaction to warnings.

HAZARD, VULNERABILITY, AND RISK ASSESSMENT

Shivamogga is exposed to multiple hazards, which may result in disaster if they are not controlled properly. In this section, effort has been made to identify all possible hazards in the district. These hazards have been studied further in subsequent chapters to know their possible impact during any disaster.

The various hazards that are possible in the Shivamogga have been broadly categorized as follows and the mitigative measures for each of these have been discussed in later chapters.

Meteorological disasters

- Cyclones / Storm
- Flood
- Drought

Geological disasters

- Earthquake
- Forest Fire
- Land Slide
- Tsunami

Industrial / chemical disasters

- Oil Spill
- Fire/Explosion
- Toxic Gas Release

Biological disasters

- Epidemic
- Food Poisoning
- Cattle disease

Miscellaneous disasters

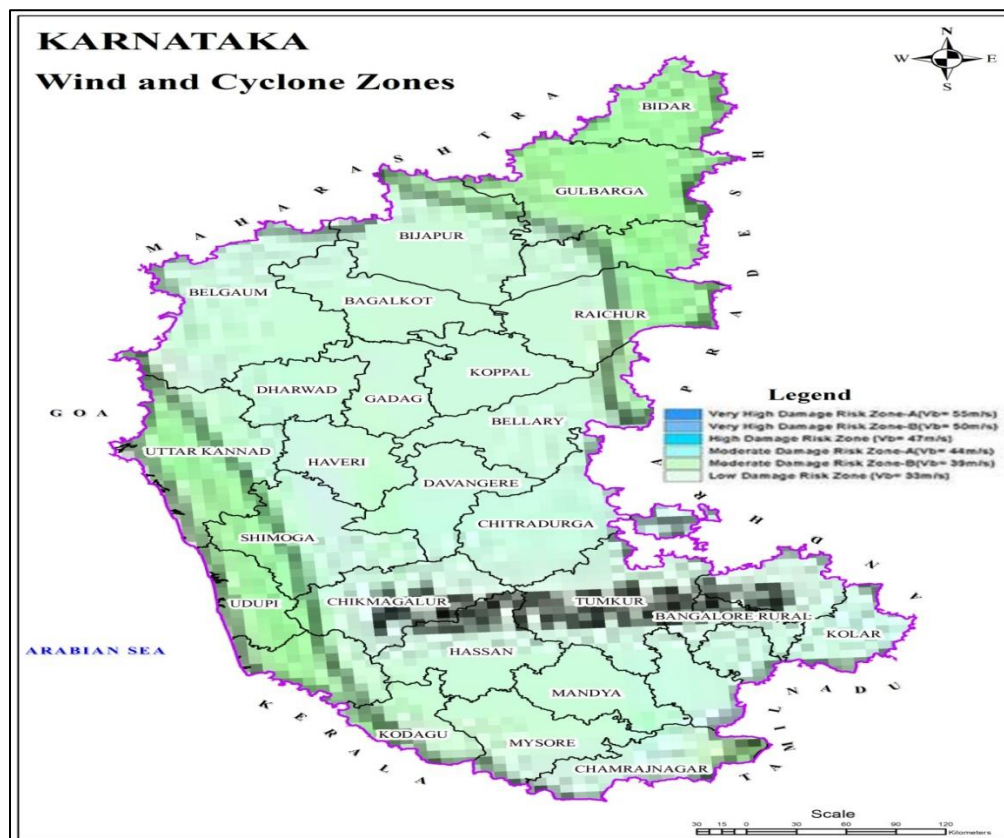
- Road Tanker Accident

- Rail Accident
- Building collapse
- Dam bursts
- Stampede
- Bomb Threat

I) Meteorological disasters

1. Cyclones / Storm

Cyclone is a vast violent whirl or vortex in the atmosphere following formation of an intense low-pressure area. Part of the District Is Falls Under the cyclone Zone. However, historically it is seen that cyclones are not as severe as and as frequent as in the Bay of Bengal along the eastern coast of India. Mitigative actions are discussed in the later chapter of this report. The below map shows the cyclone zone of the district.



2. Flood

Flood has been another Hydro-Meteorological Disaster in Shimoga causing huge loss of life & property. The Floods in 2009 several villages of shimoga destroyed huge amount of Agricultural Crops, damaged Human Settlements and displaced Thousands of People. The rehabilitation is a humungous task to the District Authority.

Causes of Floods in Shimoga

High Intensity Rainfall	Heavy Rainfall	Reservoir Water Release
The rainfall with an intensity above 50mm/hr has the potential to generate surface flow which lead to inundation / flash flood	Rainfall \geq 65mm per day in a given area, can trigger flash flood specially in the Urban areas.	Huge amount of water release from the Reservoirs will cause floods in the adjoining areas / Districts.

Occurrence of Disasters in the past in Shimoga

In last 13 years Shimoga has experienced flood 4 times.

From: 2005 To: 2018															
Sl.No	Taluk	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total no. of Taluks affected by flood		0	4	0	6	0	0	0	0	5	0	0	0	0	7
1	BHADRAVATHI				Yes										Yes
2	HOSANAGAR		Yes		Yes					Yes					Yes
3	SAGAR		Yes		Yes					Yes					Yes
4	SHIKARIPUR				Yes					Yes					Yes
5	SHIMOGA		Yes		Yes										Yes
6	SORAB				Yes					Yes					Yes
7	TIRTHAHALLI		Yes							Yes					Yes

The following villages are prone to disasters due to floods from the nearby rivers:

Villages affected by Tunga River:

Thirthahalli Taluk		
Mulubagilu, Suralibalebylu, Melige, Thirthahalli, Kuruvalli, Bharathipura,	Odalamane, Mahishi, Tuduru, Hosahalli(Hedduru) Kudige,	Kanagalakoppa, Lingapura, (Mandagadde) , Nellisara camp
Shimoga Taluk		

Arakere. Mandli. Milaghatta. Shimoga town (Gundappa Shed, SPM Road, BB Street, Mandakki Batti, Imam Bhada, Savayi Palya, Kurubara Palya, Old Mandli, Gandhi Nagar). Siddaiah Road	Gondhichatnalli. Teverachatnalli. Gajanur. Hosahalli. Lakshmipura. Matturu.Kuskuru. Uragaduru. Purale. Holebenavalli. Kelagina Hanasavadi. BB Street	Bedarahosalli. Sooguru. Holehatti. Holaluru. Hadonahalli. Pillangere. Javalli. Hale Madikechiluru. Kudli. Shanthamma Layout, vidyangar
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Villages affected by Bhadra River

Shimoga Taluk		
Kudli Village		
Bhadravathi Taluk		
Kavalagundi New Bridge Ambedker circle / BH Road Chamegowda Area	Sunnadahalli Kagekodamagge Yakinsha colony Gundurao shed	Holehonnuru Vaderapura Mangotte

Villages affected by Sharavathi River

Hosanagara Taluk		
Kodase Hilkugi Beluru Mudugoppa Basavanabyana Kadigeri Aramanekoppa	Bramanatarve Kaluru Gangankoppa Sonale Billodi	Adagodi Salageri Manasette Malali(kasaba) L Guddekoppa

Villages affected by Malathi River

Thirthahalli Taluk	
Arehalli, Changaru, Holalurubetagere, kalmene, Lakkunda,	Hosahalli, Chakkodubylu, Chikkaluru, Mulabagilu

Villages affected by Bramhi River

Thirthahalli Taluk		
Mrugavade, Munduvalli,	Bendekoppa(Hedduru) Hosalli(Hedduru)	

Villages affected by Kumudvathi River

Shikaripura Taluk		
Anjanapura Churuchigundi Esuru Kalenahalli Kotta	Kutrahalli Ambaragoppa Tumari Hosuru Surugihalli	Nembegondi Mattikote Mugulagere Kettadahalli Madagada Tank

Villages affected by Varada River

Soraba Taluk		
januru Tandige Hultikoppa Ankaravalli Kantanahalli Gudavi Chowdikoppa Dugli Hosuru Chandragutti Hole Joladagudde Nyarshi Toravanda Muguru	Nadugina Joladagudde Kade Joladagudde Katavayi Kamalapura Channapattana Holemaruru Toragondanakoppa Kerehalli Haralikoppa Katuvalli Bennuru Lakkavalli Moodi Nellikoppa Dwarahalli	Tumarikoppa Hosakoppa Kachavi Shanuvalli Bankasana Chagaturu Sabara Talagadde Tuyillkoppa Hosakoppa Jade Halekoppa Mallasamudra Kodikoppa Varadikoppa Bhommarshikoppa
Sagar Taluk		
Sidoor Tadagalale Shuntikoppa	Adarnte Kanle Hirenellur	Masuru Chikkanellur

In the year 2018-19 Shivamogga District has faced serious flood situation details of the damage and loss is below explained:-

Sl.no	Taluk	Human deaths		Cattle deaths		House damages		Other Relief Items	Total relief paid
		Nos	Amount paid	Nos	Amount paid	Nos	Amount paid		
1	Bhadravati	0	0	2	0.60	160	16.00	0.70	17.30
2	Hosanagara	4	20.00	17	2.80	64	4.20	0	46.42
3	Sagar	2	14.00	5	1.35	175	15.99	0	31.99
4	Shikaripura	0	0	3	0.85	54	7.75	0	10.00
5	Shimoga	0	0	14	0.69	46	5.36	0.45	6.76
6	Sorab	0	0	146	4.38	113	5.50	0	9.88
7	Tirthahalli	3	21.00	4	0.85	79	5.71	0.06	27.62
8	Total	9	55.00	191	11.57	691	60.51	1.21	149.97

Due to heavy rain in Monsoon 2018-19 in shivamogga the total of 9 human deaths has been happened from lightning and drowning. And 191 small and large cattels has been died, and around 691 Houses has been damaged.

Crop Loss during Monsoon:-

Crop Loss During 2018-19 Due To Heavy Rain					
SI No	Taluk	Agriculture Crop (In Hectare)	Damage In lakhs	Horticulture crop (in Hectare)	Damage In lakhs
1	ಶಿವಮೊಗ್ಗ	79.20	10.69	8.06	1.15
2	ಭದ್ರಾವತಿ	5.10	0.69	1.69	0.29
3	ತೀರ್ಥಹಳ್ಳಿ	1350.00	142.59	23.00	1.63

4	ಸಾಗರ	920.00	62.56	3279.57	590.32
5	ಶಿಕಾರಿಪುರ	241.00	16.39	995.12	177.67
6	ಸೊರಬ	230.00	27.00	4018.58	723.31
7	ಹೊಸನಗರ	1395.18	94.87	2075.00	373.50
	ಒಟ್ಟು	4220.48	354.79	10401.02	1867.87

The above table shows the crop loss during the year 2018-19 due to heavy rain

FLOOD MANAGEMENT TEAM:

Sl. No.	Designation	Appointed as	Off/ Res. Phone
1.	Deputy Commissioner	Chairman	08182-271101/271102
2.	CEO, Zilla Panchayath	Member	08182-223770/ 221866
3.	Superintendent of Police	Member	08182-261400/261413
4.	Conservator of Forest	Member	08182-227704/ 240385
5.	Deputy Conservator of Forests	Member	08182-278425/ 272210
6.	Additional Deputy Commissioner	Member	08182-221010/ 274788
7.	Regional Transport Officer	Member	08182-222209/ 259911
8.	District Information Officer	Member	08182-278638
9.	Assistant Commissioner, Shimoga Dvn	Member	08182-222204/ 223181
10.	Assistant commissioner, Sagar Dvn	Member	08183-226601/ 226602
11.	Joint Director, Food Dept.	Member	08182-222203
12.	District Health Officer	Member	08182-222382
13.	Medical Superintendent	Member	08182-271566/ 254585
14.	District Surgeon	Member	08182-222412
15.	Tehsildar Shimoga	Member	08182-279312
16.	EO.Taluk Panchayat Shimoga	Member	08182-222299
17.	District Fire Officer	Member	08182-222888
18.	Commandant, Home Guards	Member	08182-222630/ 223330
19.	KPTCL.Executive Engineer	Member	08182-272624
20.	Suprintendent Engineer, PWD	Member	08182-270926/ 225641
21.	Executive Engineer.(spl.Dvn)PWD	Member	08182-222942
22.	Executive Engineer Major Irrigation	Member	08182-257189
23.	Executive Engineer. Minor Irrigation	Member	08182-229112
24.	Colonel,NCC	Member	08182-240296
25.	Regional Officer KSPCB, (Environment officer)	Member	08182-256090/ 248783
26.	KUWS&DB, EE	Member	08182-220246
27.	Asst, Drugs controller	Member	08182-242298
28.	Deputy Director, Animal Husbandry	Member	08182-222969
29.	Senior Assistant Director Of Fisheries Shimoga	Member	08182-222716
30.	President, Hotel Owners association	Member	08182-221298
31.	NSS	Member	08182-270110
32.	Secretary, Red Cross	Member	08182-273721
33.	President, Rotary Club	Member	
34.	President, Lions Club	Member	08182-270819
35.	Office bearers of IMA	Member	08182-223278

3. Drought

Drought is a temporary aberration, unlike aridity or even seasonal aridity, which is a permanent feature of climate. Drought in contrast is a recurrent, yet sporadic feature of climate, known to occur under all climatic regimes and is usually characterized by variability in terms of its spatial expanse, intensity and duration. Condition of drought appear primarily, though not solely, on account of substantial rainfall deviation from the normal and/or the skewed nature of the spatial/temporal distribution to a degree that inflicts an adverse impact on crops over an agricultural season or successive seasons.

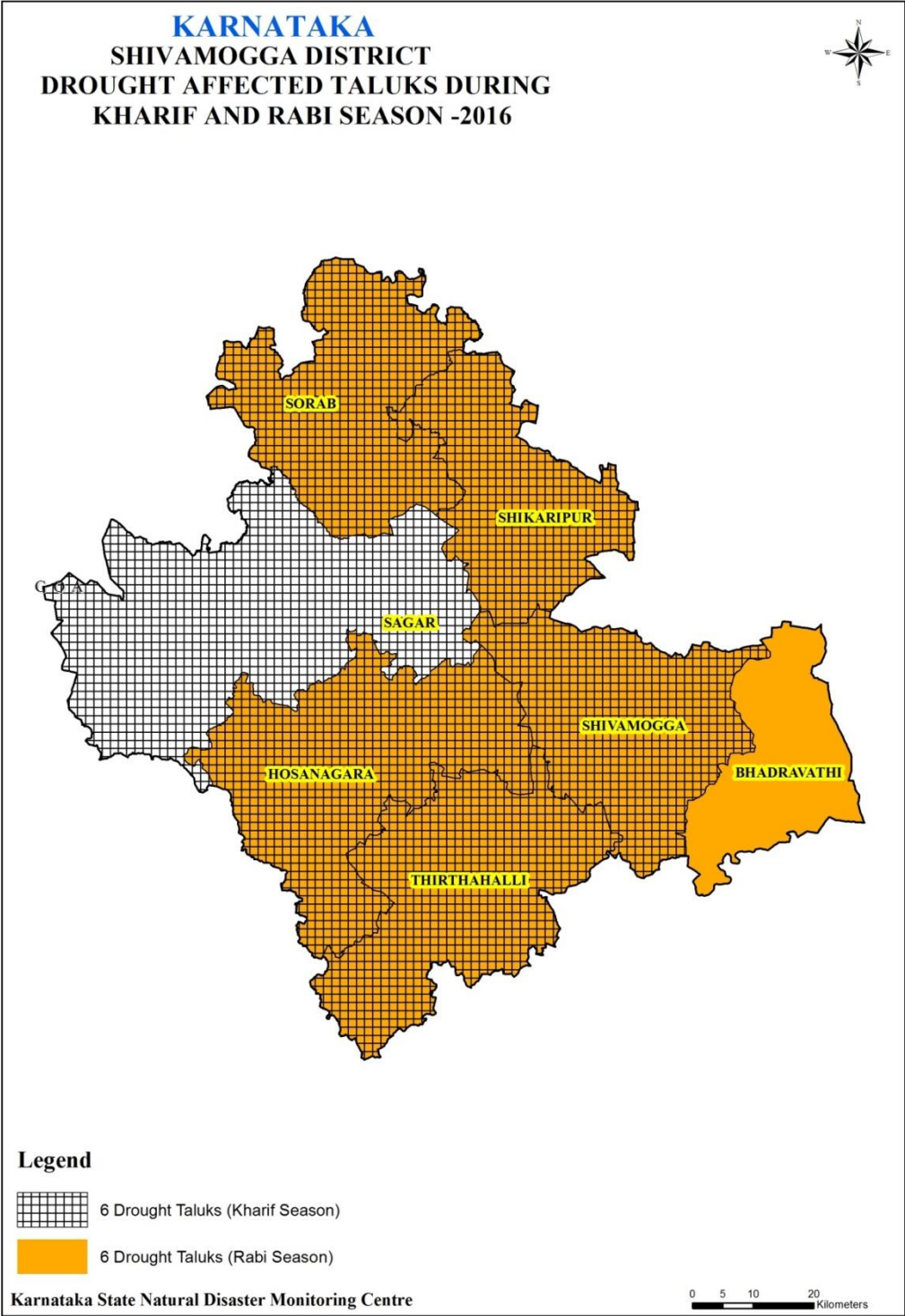
Drought differs from other natural hazards since it has a slow onset, evolves over months or even years, affects a large spatial extent but causes little structural (infrastructure) damage. The onset and end and severity are often difficult to gauge. The impact of drought spans economic, environmental and social sectors.

Occurrence of Disasters in the past in Shimoga

Drought Affected Taluks from 2009 to 2018													
From: 2009 To: 2018													
Sl.No.	Taluk Name	2009	2010	2011	2012	2013	2014	2015	2016		2017	2018	
									Kharif	Rabi		Kharif	Rabi
1	BHADRAVATHI				Yes					Yes			Yes
2	HOSANAGAR				Yes	Yes			Yes	Yes			
3	SAGAR				Yes				Yes				
4	SHIKARIPUR				Yes				Yes	Yes			Yes
5	SHIMOGA				Yes				Yes	Yes			Yes
6	SORAB				Yes			Yes	Yes	Yes			Yes
7	TIRTHAHALLI				Yes				Yes	Yes			

Shimoga Experienced a Serious drought in the year 2016 which cause loss of agricultural crops and seven taluks are declared as drought prone areas. The Below map shows the Drought intensity of Shimoga district in 2016.

Shimoga Experienced a Moderate drought in the year 2018 Rabi Season. Four taluks were declared as Drought prone area they are Shimoga, Bhadravathi, Shikaripura and Sorab. But their is no loss has been reported due to loss in the respective taluks.



In Shivamogga district Sorab, Shiakripura and Shivamogga taluks are more prone to drought because these areas are Rain fed areas. Therefore these are the major vulnerable areas for drought.

SHIVAMOGGA DISTRICT

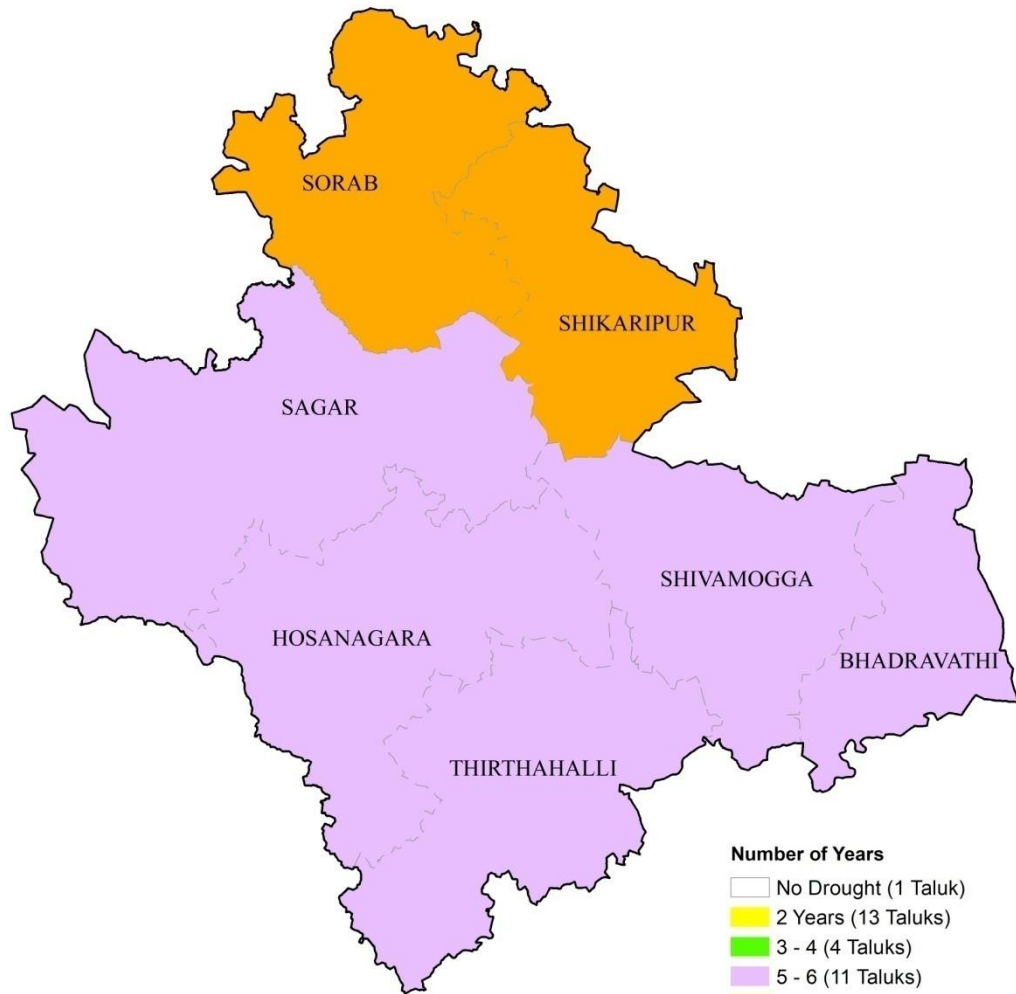
Drought Affected Taluks
From 2001 to 2018



Scale

1:729,303

1 cm = 7 km

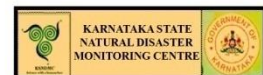


Number of Years

- No Drought (1 Taluk)
- 2 Years (13 Taluks)
- 3 - 4 (4 Taluks)
- 5 - 6 (11 Taluks)
- 7 - 8 (19 Taluks)
- 9 - 10 (44 Taluks)
- 11 - 13 Years (84 Taluks)

— District Boundary

- - - Taluk Boundary

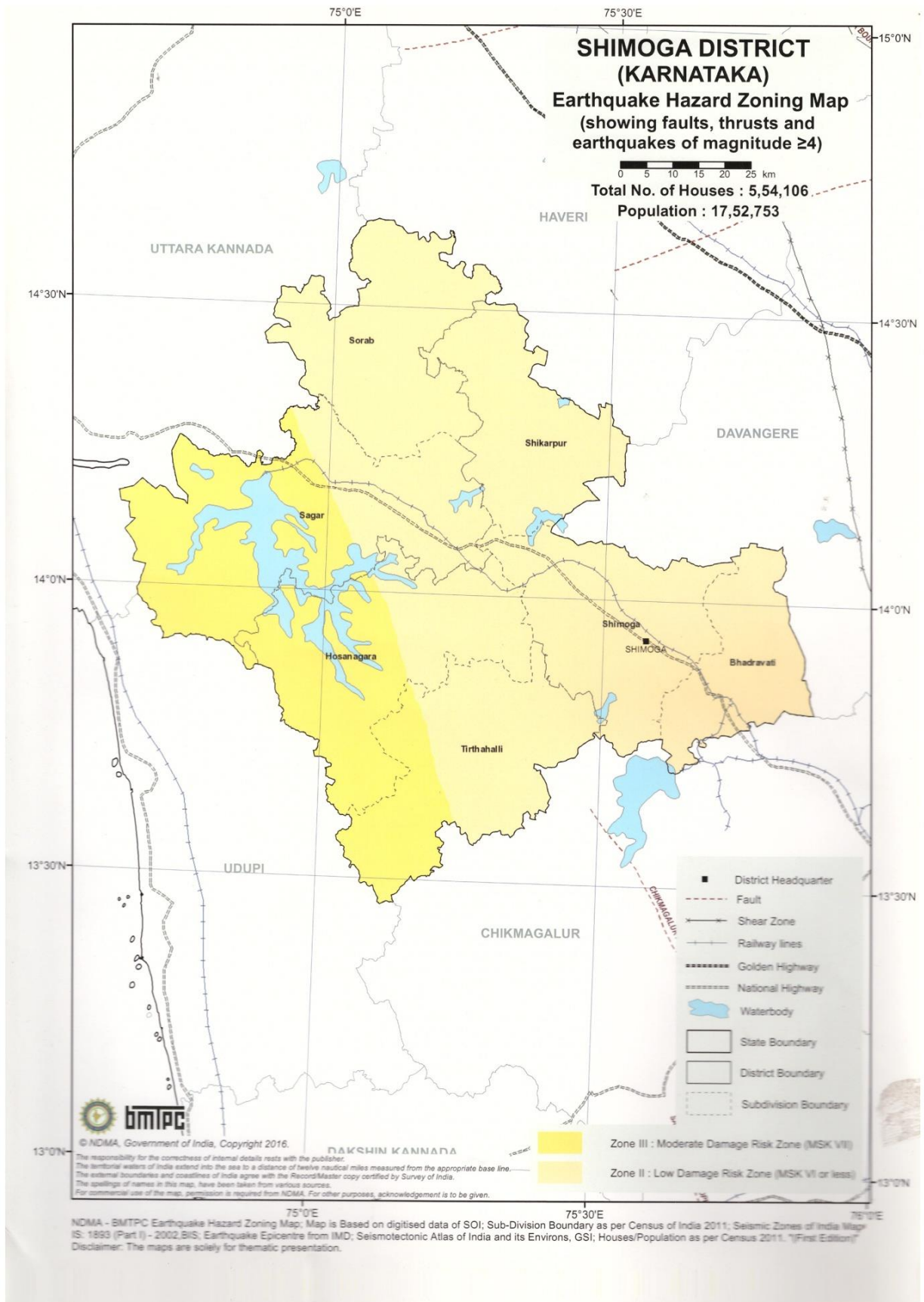


II) GEOLOGICAL DISASTERS

1. Earthquakes hazards and disasters:-

Earthquakes hazards and disasters is a series of underground shock waves and movements on the earth's surface caused by natural processes withering the earth's crust. According to the latest available seismic zoning map of Shimoga the District is primarily classified into Two Seismic Zones. Zone III: Moderate Damage Risk Zone three taluks are comes under zone III they are Sagara, Hosanagara, Thirthahalli western part of these three taluks are comes under zone III. And all the 7 taluks i.e.. Sagara, Hosanagara, Shikaripura, Shimoga, Bhadravathi, Thirthahalli and Soraba are comes under Zone II: Low Damage Risk Zone.

Nearly 31% of land area of State (Coastal and part of Malnad region) falls under Moderate damage risk zone. The rest of it falls under Low damage risk zone. Seismic Harzard map is depicited below



Occurrence of Disasters in the past in Shimoga

12 May 1975 - Shimoga area, Karnataka, Mb 4.7. 13.800 N, 75.300 E, OT=15:09:28 UTC. Maximum observed intensity V. Felt in Shimoga and the surrounding areas, within a radius of 140 kilometres. This is the first known earthquake in this region

A REPORT ON MICRO TREMOR FELT VITTALANAGARA AND SURROUNDING REGION IN THIRTHAHALLI TALUK., SHIVAMOGGA DISTRICT

In the year 2018, One micro tremor was recorded on 03.02.2019 at 01:33 am. The epicentre of the micro tremor is located at “Near Vittalanagara, Thirthahalli Taluk, Shivamogga District” and recorded at 05 VSAT Enabled Permanent Seismic Monitoring Stations Network of KSNDMC. After the first Micro tremor two to three micro tremors was happned but the magnitude is so small those were not recorded.

1. INTRODUCTION:

Shivamogga district is a part of the Malnad region of Karnataka and is also known as the 'Gateway to Malnad' or „Malenaada Hebbagilu“ locally. Shivamogga lies between the latitudes 13°27' and 14°39' N and between the longitudes 74°38' and 76°04' E at a mean altitude of 640 metres above sea level. The peak Kodachadri hill at an altitude of 1343 metres above sea level is the highest point in this district. Rivers Kali, Gangavati, Sharavati and Tadadi originate in this district. The two major rivers that flow through this district are Tunga and Bhadra which meet at Koodli near Shivamogga city to gain the name of Tungabhadra, which later joins River Krishna. As the district lies in the tropical region, rainy season occurs from June to October. Shivamoga receives an average annual rainfall of 2237 mm with an average of 86 days in the year being rainy days. The average annual temperature of Shivamogga district is around 26°C. The average temperature has increased substantially over the years. In some regions of the district, the day temperature can reach 40°C during summer. This has led to water crisis and other problems. As per the historic records and information on two Earthquakes in the Thirthahalli and Hosanagara border region, one with an Intensity of VII, (equivalent to a Magnitude of 5.0) on 01.04.1843 and another of magnitude 4.7 on 12.05.1975 at 03:09 pm. During, 03rdFebruary, 2019, the VSAT Enabled Permanent Seismic Monitoring Stations Network of KSNDMC has recorded a Micro Tremor of Magnitude of 2.2, epicentred at “Near Vittalanagara, Thirthahalli Taluk, Shivamogga District”.

Table 1: Location details of studies taken up post Micro Tremor

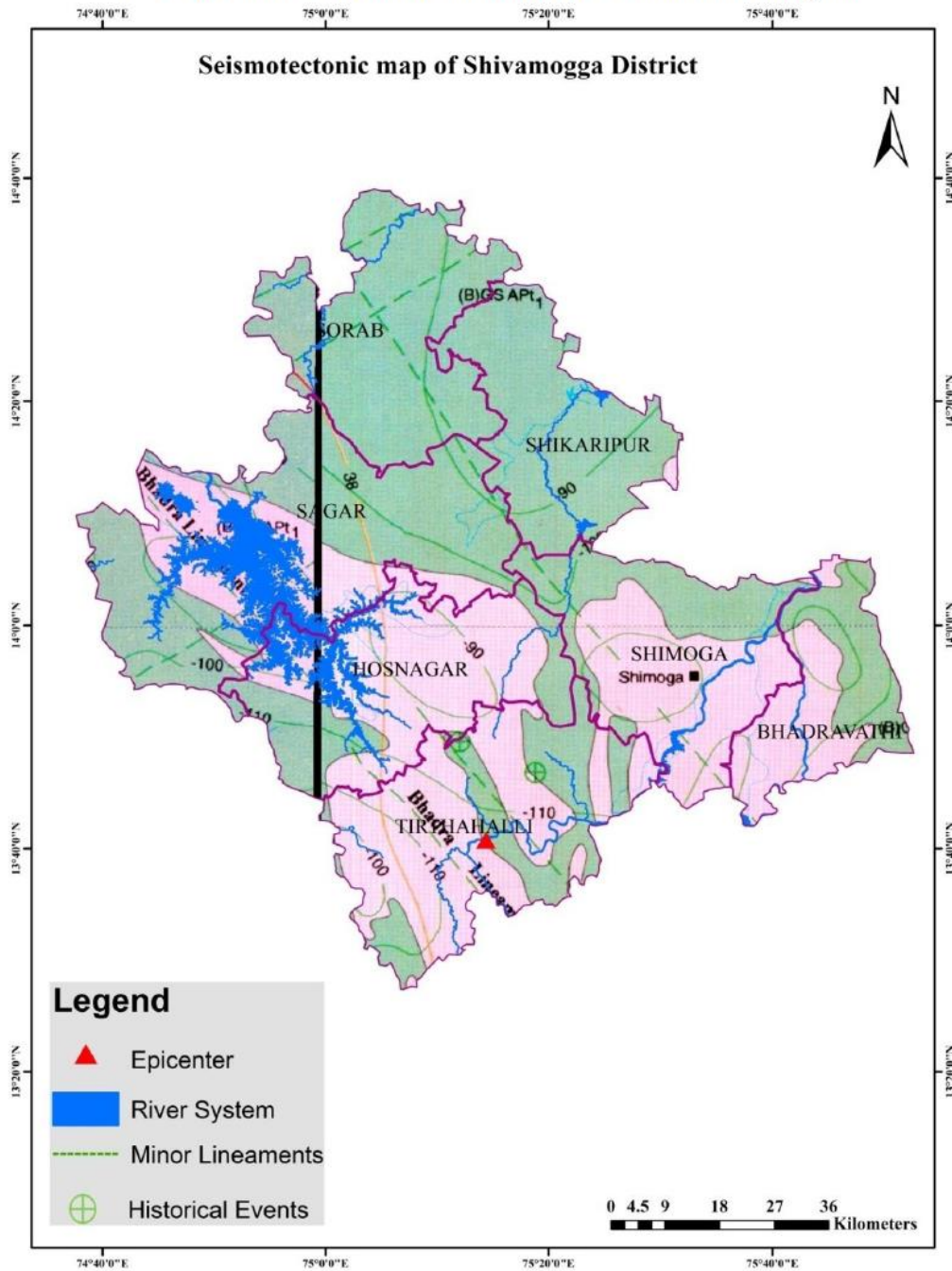
Sl. No	Latitude (°N)	Longitude (°E)	Altitude (Mtrs.)	GWL (mbgl)	Village Name
1	13° 40'44.485"	75° 14'26.481"	634	09	Vittalanagara
2	13° 40'40.195"	75° 14'23.397"	620	07	Vittalanagara
3	13° 40'46.000"	75° 14'42.762"	738	-	Melina Karuvalli
4	13° 36'43.035"	75° 06'20.550"	659	-	Hurali
5	13° 36'23.611"	75° 06'02.564"	598	-	Shivalli
6	13° 41'37.143"	75° 05'02.190"	612	11	Yadyur and Sulagod GP
7	13° 40'34.770"	75° 02'48.040"	584	-	Mani Reservoir

SUMMARY:

The summary of the field observations/inferences drawn from the analysis made are given below:

- The vibrations from the Micro Tremor recorded by the KSNDMC Network on 03.02.2019 at 01:33 am with a Magnitude of 2.2 had experienced no damage to the local structures in and around the Epicentral region at Vittalanagara Village.
- These Micro Tremors will not cause any damages to the local structures including the Dam structure except some minor cracks in a 35 years old house at Vittalanagara which again is dependent on the mode of local construction style.
- Groundwater level changes, ground deformation, soil subsidence/ landslides and other anomalous changes have not taken place from this low intensity Micro Tremor.
- The Epicentre falls in different litho units and is in the contact zone of Bababudan Schist belt and Peninsular Gneissic Complex with two minor lineaments running in NW direction.
- Further, such types of Micro Tremors are observed frequently in the Earth's Crust as a process of Crustal readjustments which is quiet common globally. Many such Tremors go unnoticed locally but this event has been captured due to the presence of the VSAT Enabled Permanent Seismic Monitoring Stations Network of KSNDMC.
- Recorded tremor region falls under the Seismic Zone – II (Low Damage Risk Zone) with a liability of Intensity VI or less. The IS code assigns zone factor of 0.10 (maximum horizontal acceleration that can be experienced by a structure in this zone is 10% of gravitational acceleration) for such Zones.
- As the recorded Tremor is Low in Intensity and Magnitude the possibilities of occurrence of Landslides in and around the region are completely ruled out.
- The micro seismic activity is being continuously monitored at Master Control Facility (MCF) of KSNDMC through the VSAT Enabled Permanent Seismic Monitoring Stations Network established at nearby Observatories.
- The Local Community need not be in Panic as these local vibrations are a part of maintaining crustal Isostasy and will diminish in a very short course of time.

Figure 1: Seismo Tectonic map showing the Epicenter location of the Micro Tremor recorded on 03.02.2019 at 01:33 am with Seismo Tectonic details around the region.



2. Landslide:

A landslide or landslip is a geological phenomenon which includes a wide range of ground movement, such as rock falls, deep failure of slopes and shallow debris flows, which can occur in offshore, coastal and onshore environments. Although the action of gravity is the primary driving force for a landslide to occur, there are other contributing factors affecting the original slope stability. Typically, pre-conditional factors build up specific sub-surface conditions that make the area/slope prone to failure, whereas the actual landslide often requires a trigger before being released.

Landslides occur when the stability of a slope changes from a stable to an unstable condition. A change in the stability of a slope can be caused by a number of factors, acting together or alone. Natural causes of landslides include:

- groundwater (pore water) pressure acting to destabilize the slope
- Loss or absence of vertical vegetative structure, soil nutrients, and soil structure (e.g. after a wildfire)
- erosion of the toe of a slope by rivers or ocean waves
- weakening of a slope through saturation by snowmelt, glaciers melting, or heavy rains
- earthquakes adding loads to barely stable slope
- earthquake-caused liquefaction destabilizing slopes
- volcanic eruptions

Landslides are aggravated by human activities, Human causes include:

- deforestation, cultivation and construction, which destabilize the already fragile slopes
- vibrations from machinery or traffic
- blasting
- earthwork which alters the shape of a slope, or which imposes new loads on an existing slope
- in shallow soils, the removal of deep-rooted vegetation that binds colluviums to bedrock
- Construction, agricultural or forestry activities (logging) which change the amount of water which infiltrates the soil.

Landslide instances in Shimoga:

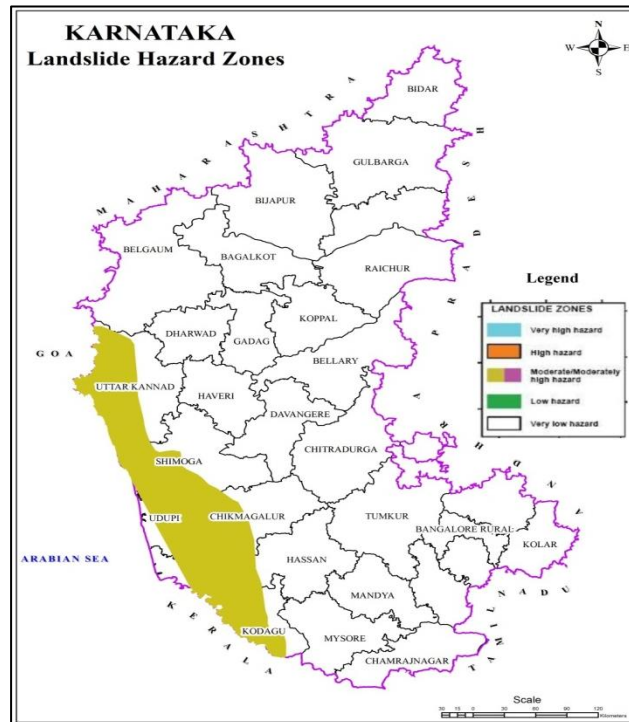
Thirthahalli Taluk limits:

Agumbe- Someshwara Road connects Shimoga, Udipi, Mangalore, which comes under Western Ghats is a hilly road. The existing road is not wide and regular buses or lorries cannot pass through it. Only mini buses and mini lorries are allowed. During rainy season, every year there will be landslide instances in this ghat section. Therefore, the road requires to be widened, necessary supporting walls to be constructed beside formation of RCC road.

Hosanagara Taluk limits:

Hulikal ghat which connects Hosanagar (Shimoga District) to Kundapur taluk of Udipi district is a hilly road. Immediately after this ghat section, the road connects upto Hosangady, where underground hydro electric project of KPCL exists. This is also a major road, which experiences landslide and soil erosion due to heavy rains in Western Ghats. This road also requires to be widened, protection wall to be constructed to avoid landslides and accidents.

There are chances of landslide in the Nagara hobli of Hosanagara taluk as the land is hilly area and submergence of water in the backwater of Sharavathi.



LANDSLIDE MANAGEMENT TEAM

Sl. No.	Designation	Appointed as	Off/ Res. Phone
1.	Deputy Commissioner	Chairman	08182-271101/271102
2.	CEO, Zilla Panchayath	Member	08182-223770/ 221866
3.	Superintendent of Police	Member	08182-261400
4.	District Health Officer	Member	08182-222382
5.	Medical Superintendent	Member	08182-271566/ 254585
6.	District Surgeon	Member	08182-222412
7.	Road Transport Officer	Member	08182-222209/ 259911
8.	District Fire Officer	Member	08182-227328
9.	Commandant, Home Guards	Member	08182-222630/ 223330
10.	Assistant Commissioner, Shimoga Dvn	Member	08182-222204/ 223181
11.	Assistant Commissioner, Sagar Dvn	Member	08183-226601/ 226602
12.	SE, Public Works Department	Member	08182-270926/ 225641
13.	Regional Officer KSPCB, (Environment officer)	Member	08182-256090/ 248783
14.	KUWS&DB, EE	Member	08182-220246
15.	Tehsildar, Thirthahalli	Member	08181-228239 228120
16.	Tehsildar, Hosanagar	Member	08185-221235 221314
17.	EO.Taluk Panchayat Thirthahalli	Member	08181-228250
18.	EO.Taluk Panchayat Hosanagar	Member	08185-221226
19.	KPTCL. Executive Engineer	Member	08182-272624
20.	EE, Public Works Department	Member	08182-222942

3. FOREST FIRE

Shimoga district comprises of three Territorial Forest divisions namely Shimoga, Sagar and Bhadravathi Forest divisions and one Shimoga wildlife division having two Sanctuaries i.e. Shettihalli and Sharavathi wildlife Sanctuaries. The total forest area of the Shimoga Wildlife Division is 82754.5 Ha, Bhadravathi Division is 43864.00 Ha, Shimoga Division is 81319.9 Ha and Sagar Division is 152146.80 Ha.

Most of the forest in the district being deciduous in nature, occurrence of fire in the dry season (February to May) is very common. There was gregarious flowering of bamboos during 2005 due to which bamboo has totally dried up in all divisions which is also a potent burning material for fire.

FOREST FIRE DISASTER MANAGEMENT TEAM:

Sl. No.	Designation	Appointed as	Off/ Res. Phone
1.	Chief Conservator of Forests	Chairman	08182-227704/ 240385
2.	Deputy Commissioner	Member	08182-271101/ 271102
3.	CEO, Zilla Panchayath	Member	08182-223770/ 221866
4.	DCF Shimoga	Member	08182-272210/278425
5.	DCF Sagar	Member	08183-226071/226203
6.	DCF Bhadravathi	Member	08282-266355/266631
7.	DCF Wildlife Shimoga	Member	08182-222983/274983
8.	District Fire Officer	Member	08182-227328
9.	Superintendent of Police	Member	08182-261400
10.	Additional Deputy Commissioner	Member	08182-221010/ 274788
11.	Assistant commissioner, Shimoga Dvn	Member	08182-222204/ 223181
12.	District Health Officer	Member	08182-222382
13.	Medical Superintendent	Member	08182-271566/ 254585
14.	District Surgeon	Member	08187-222412
15.	Assistant commissioner, Sagar Dvn	Member	08183-226601/ 226602

16.	Tehsildar Shimoga	Member	08182-228239/ 228120
17.	EO.Taluk Panchayat Shimoga	Member	08182-222299
18.	Regional Officer KSPCB, (Environment officer)	Member	08182-256090/ 248783
19.	KUWS&DB, EE	Member	08182-220246
20.	Commandant, Home Guards	Member	08182-222630/ 223330
21.	KPTCL. Executive Engineer	Member	08182-272624
22.	Superintendent Engineer, PWD	Member	08182-270926/ 225641
23.	Executive Engineer.(Spl.Dvn)PWD	Member	08182-222942
24.	Colonel, NCC	Member	08182-240296
25.	NSS	Member	08182-270110
26.	Secretary, Red Cross	Member	08182-273727
27.	President, Lions Club	Member	08182-270819
28.	Office bearers of IMA	Member	08182-223278
29.	Asst, Drugs controller	Member	08182-242298
30.	DD, Animal Husbandry	Member	08182-222969

III) CHEMICAL AND INDUSTRIAL DISASTER:

Definition:

Major Accident or disaster: An incident involving loss of life inside or outside the site or ten or more injuries inside or one or more injuries outside or release of toxic chemical or explosion or fire or spillage of hazardous chemical resulting in on site or offsite emergencies or damage to equipment leading to stoppage of processes or adverse effects to the environment.

Chemical accident: Accident involving a fortuitous or sudden or unintended occurrence while handling any hazardous chemicals resulting in continuous, intermittent or repeated exposure to death, or injury to any person or damage to any property but does not include an accident by reason only of war or radio-activity

Chemical disasters in general may result from:

- i) Fire.
- ii) Explosion.
- iii) Toxic release.
- iv) Poisoning.
- v) Combinations of the above

Total 238 registered factories in Shimoga District. Out of 238 industries 3 industries are classified as Major accident Hazard industry. The details of these units are as below.

Sl. No	Name and address	Manufacturing details	Contact person
1	Visveswaraya Iron & Steel Plant (unit of SAIL) Taluk: Bhadravathi Dist: Shimoga	Manufacture of Steel, Alloy Castings, Pig Iron, Foundry.	V.S.Hedge GM Works 08282-271667 94498-70724 Nageshwara Rao.M. Factory Manager 08282-270091 94498-70692
2	The Mysore Paper Mills Limited Paper Town Post, Bhadravathi, Dist.: Shimoga	Integrated factory with rated capacity of Newsprint – 75,000 Tons/Annum Cultural paper –	D.P.Raveendranath Chief Operating Officer 08282-270780 9945176693 S.N.Malavalli,

		37,000/Annum Sugarcane Crushing – 2,500 Tons/day	Gen. Mgr-HRDA Administrative head 08282-270743 (O) 9008444186 Dharmappa, Sr.Manager, HRD 270794, 9945708976
3	Indian Oil Corporation Ltd LPG bottling unit, KIADB Industrial Area Machenahalli, SHIMOGA	Bottling LPG cylinders	Y.Mangalur Plant manager – 08182 246112, Mobile : 9448285559 Y.A. Nagaraju Dy. Manager – 9880895580

Visveswaraya Iron & Steel Plant (unit of SAIL) Taluk: Bhadravathi Dist: Shimoga and **Mysore Paper Mills Limited Paper Town Post, Bhadravathi, Dist.: Shimoga** are currently not working. **Indian Oil Corporation Ltd LPG bottling unit, KIADB Industrial Area Machenahalli, SHIMOGA** is near to the nidige village and the LPG stored in mounded bullets (3 nos) with total capacity of 1800 MT. In case of any emergency in the plant it affects the nearby village and peoples who are working in other factories which are adjacent to the **Indian Oil Corporation Ltd LPG bottling unit there** therefore make a separate contingency paln for evacuation and rehabilitation for the humans and livestock near by it.

INDUSTRIAL HAZARD MANAGEMENT TEAM

Sl. No.	Designation	Appointed as	Off/ Res. Phone
1.	Deputy Commissioner	Chairman	08182-271101 /271102
2.	CEO, Zilla Panchayath	Member	08182-223770/ 221866
3.	Superintendent of Police	Member	08182-261400
4.	Additional Deputy Commissioner	Member	08182-221010/ 274788
5.	DCT & Senior RTO	Member	08182-222209/ 259911
6.	District Health Officer	Member	08182-222382
7.	Medical Superintendent	Member	08182-271566/ 254585
8.	District Surgeon	Member	08182-222412
9.	District Fire Officer	Member	08182-227328
10.	Commandant, Home Guards	Member	08182-222630/ 223330
11.	Assistant Commissioner, Shimoga Dvn	Member	08182-222204/ 223181
12.	Regional Officer KSPCB, (Environment officer)	Member	08182-256090/ 248783
13.	District Information Officer	Member	08182-278638
14.	SE, Public Works Department	Member	08182-270926/ 225641
15.	Joint Director of Agriculture	Member	08182-222635
16.	Tehsildar, Shimoga	Member	08182-228239/ 228120
17.	Tehsildar, Bhadravathi	Member	08282-267283, 268097
18.	City Corporation Commissioner	Member	08182-226565
19.	KPTCL. Executive Engineer	Member	08182-220345 272624
20.	EE, Public Works Department	Member	08182-222942
21.	EE, KSHIP	Member	08182-228089
22.	Occupational Health & safety experts	Member Member Member	08182-226921 08282-271621
23.	Joint Director of Factories, Shimoga Division	Member	08182-278302

IV) BIOLOGICAL DISASTERS, EPIDEMIC, AND FOOD POISONING:

Epidemic:

Epidemics of infectious disease are generally caused by a change in the ecology of the host population (e.g. increased stress or increase in the density of a vector species), a genetic change in the parasite population or the introduction of a new parasite to a host population (by movement of parasites or hosts). Generally, an epidemic occurs when host immunity to a parasite population is suddenly reduced below that found in the endemic equilibrium and the transmission threshold is exceeded. In Shimoga district, Kyasanur forest Disease (KFD) which spreads by ticks assumes a proportion of epidemic leading to loss of human lives.

Disasters caused by living organisms such as bacteria, virus, fungus, etc. are termed as biological disasters. These organisms may cause epidemics.

As shown in the above table, most of the outbreaks/epidemics reported in India are due to water-borne diseases, vector-borne diseases and vaccine preventable diseases. While National Vector Borne Diseases Control Programme (NVBDCP) is the key programme for prevention/ control of outbreak of epidemics of malaria, dengue, Chikungunya etc, vaccines administered under UIP/EPI reduce the morbidity and mortality due to diseases like measles, diphtheria, pertussis, poliomyelitis etc. Availability of safe water and adoption of personal and domestic hygienic practices are important measures to prevent/control epidemics of water-borne diseases like cholera, viral hepatitis etc.

Since epidemics are major health hazards it is necessary to have trained persons to handle disasters of such nature. Proper training in first aid, hygiene and treatment is essential to deal with biological disasters.

To effectively treat cases of epidemics public awareness and education, before and after the epidemic, is vital. Studies have related that the following are major problems faced before and during the outbreak of epidemics.

- Inadequate medical and health facilities.
- Inadequate supply of pure water.

- Lack of medical and health assistance.
- Absence of effective control of common diseases.
- Unsanitary conditions.
- Malnutrition.

Steps for effectively tackling biological disasters,

- Setting up emergency health service.
- Preparing a contingency plan.
- Training of personnel to deal with such emergencies.
- Awareness camps for epidemic prone areas.

Local health authorities will be instructed to be in preparedness with medicines and other infrastructure to deal effectively with outbreak of any epidemic in the district.

Food poisoning is a phenomenon where a large number of people could get affected after consuming contaminated food. This happens mostly during religious and social functions during which food is prepared in make shift kitchen on mass scale. This calls for immediate action by the district administration to provide medical attention, identify the source of poisoning and take corrective actions.

Livestock population in Shimoga District largely comprises of cattle, Buffaloes, Sheep rearing being a traditional activity is taken up by shepherds, which is mostly migratory in nature. The health coverage and breeding programmes are being extended through 135 Veterinary Institutions located throughout the district.

In the event of an outbreak of cattle diseases like foot and mouth disease, large population of cattle can get affected. Such emergencies will require help of veterinary doctors and possible disposal of large quantity of milk, milk products and meat.

MAJOR EPIDEMICS OUTBREAK DETAILS -SHIMOGA DIST.

Sl.No.	Disease	Year
1	Leptospira	2017
2	KFD	2018
3	Chikungunya & Dengue	2006-2017

Leptospirosis is primarily a zoonotic disease found in South-Asia, Australia, etc with high number of morbidity rate and case fatality rate varies from 20%-30%. In India this disease is prevalent in Maharashtra, Karnataka, Gujarat and recently some northern states showing cases in recent years. As this is a zoonotic disease maximum number of cases will find in Agriculture and Animal handling workers where maximum rainfall will be noticed. In Shimoga 817 cases are recorded from 2002-2017.

Kyasanur forest disease (KFD) was first discovered in the forested areas of Shimoga district; Karnataka in 1957. KFD endemic area was restricted to about 200 sq.km. of Shimoga district where Thirthahalli, Sagar, Sorab and Shikaripur taluks are reporting cases now but initially areas of Sagar, Sorab and Shikaripur taluks of Shimoga district. KFD remained confined to these 3 taluks until 1972. At present disease is prevalent in Shimoga, Uttarakannada, Chikmagalur Udupi and Mangalore.

Initially the disease found in monkeys of Kyasanur forest where the deaths of monkeys take place so locally this disease is known as monkey disease.

Transmission of Disease:

This is a seasonal disease-prevalent between December to June with peaks usually occurring between Feb and May. Man acquires infection through forest exposure sometimes indirectly by the bite of infected ticks in nymphal stage. Man is a terminal host as no man to man transmission because the domestic environment can't sustain the ticks. Sometime disease may be transmit from monkeys usually from died monkeys.

In Shimoga From 2005-2017, 379 cases and 9 deaths are happen due to this disease.

Dengue is a vector borne viral disease with acute febrile condition, clinical feature varying from fever, Headache, retro-orbital pain, myalgia, arthralgia, rash, haemorrhagic manifestations, and leucopenia illness of 2-7 days duration. Disease has reporting repeatedly developing and underdeveloped countries, and in India the prevalence rate high in states where poor sanitation, unhygienic condition, poor socio economic condition is noted.

Chikungunya is an acute illness with fever, skin rash and incapacitating arthralgia. Arthralgia (Poly arthritis -in small joints) is the Hall mark of the disease vis-à-vis dengue fever. Most cases recover from CHICK arthropathy within several weeks but some cases may prolong up to 2 years. Not generally life threatening. However, relationship between Chick Virus and multi organ failures, neurological complications meningo-encephalitis, are under investigation.

The cases recorded from 2006-2017 are shown in the bellow table

Year	Chikungunya	Dengue
2006	7	0
2007	0	8
2008	34	7
2009	68	25
2010	17	23
2011	8	16
2012	0	133
2013	0	0
2014	0	0
2015	68	130
2016	53	412
2017	10	117
2018	15	202

Avian Influenza:- As the poultry birds are vulnerable to H5N1 infections which they get from migratory birds, a regular surveillance mechanism is in place to periodically check this infection in poultry birds. Rapid Response Teams consisting of Assistant Directors & Veterinary Officers in all the Taluks have been formed and instructed to visit Households and poultry farms daily for consistently surveillance and to check extraordinary deaths in poultry. Surveillance is being conducted and Serum samples are being collected from Mandagadde and Gudavi bird sanctuaries surrounding area and sent to IAH & VB Bangalore for testing every fortnightly. Till now there are no positive results reported in Shimoga.

As a precautionary measure adequate personal protection kits and fogging machines have been stocked at each Taluka Veterinary Hospitals.

V) MISCELLANEOUS DISASTER

Rail Accident

There could be two types of rail accident namely the one involving rail carrying cargo, where the consequential impact could be wide spread and the other being an accident involving passenger train where there could be large casualties. In either case the district administration would have to play a crucial role in meeting such emergency.

Building Collapse

During recent years, many multi-storied structures have come up in the district especially in Shivamogga City. There are chances of these structures collapse either due to earthquake or due to poor quality of construction leading to large-scale loss of human life. This may require rescue operation on war footing with available means and constraints like narrow roads, poor approach etc.

Dam Brust

A dam burst is a sudden release of large quantities of water causing havoc in downstream areas, damaging structures & installations, disrupting socio-economic activities, loss of life & property and causing ecological and environmental damage.

Dams and barrages need careful planning and analysis to ensure minimum environmental intrusion. Dams of all sizes must be submitted to careful review of environmental criteria and assessment. With advancements in technology, frequency of dam bursts or breaches has reduced considerably. The structural stability of a dam can be threatened by floods, torrential rains, rockslides, landslides, earthquakes, deterioration of the heterogeneous foundation, poor quality of construction, improper management, sabotage, acts of war etc. Out of this, floods and seismic disturbances are the primary causes of dam bursts or breaches. The Earth fill dams have been involved in the largest number of failures, followed in order by gravity dams, rock fills, and multiple and single arches.

The failure of dams causes economic losses that transcend immediate property damages and loss of life. Predicting the consequences of dam breach is the first step in ensuring dam safety.

Possible impacts of dam bursts:

- Loss of life and high number of injuries demanding immediate attention
Separated families and missing people causing family disorganization Extensive damage to houses, personal belongings, livestock, crops and plantations, land etc
- Extensive damage caused to infrastructure including buildings, bridges, railway line, power supply, water supply, sewer lines, underground cables, communication lines etc.
- Extensive damage to environment like soil erosion, water pollution, silting, denudation of land etc.
- Loss of livelihood
- Loss of production
- Migration causing social disruption and breakdown of social order
- Law and order problem

Stampede

The district has many places of worships where there will be large congregation of people during annual festivals. There could also be a large gathering on other occasions like election meetings, field dramas or during a sporting event etc. There are chances of stampede during this period due to failure of crowd control measures leading to loss of human life mostly of women, children and handicapped.

Bomb threat:-

Most bomb threats are made over the telephone by anonymous callers. Some threats are received in the mail or by other means, but these methods are rare. In each case, though, it must be remembered that the communication should be taken seriously and that the person receiving it should be prepared.

No solution can be offered to eliminate either bomb threats or planted bombs, but one can be well or badly prepared to cope with them when such incidents happen. It is essential for organizations to design and implement both good physical security and a comprehensive bomb threat response plan.

There must be a comprehensive bomb threat response plan in place long before the first scare so that when a threat is received, everything works expediently: the reporting of the threat; the analysis; the decision on a course of action; and the

implementation of that response. Policies and procedures regarding such incidents must be established before the fact, and personnel must be trained and practiced in their roles before they are called on to perform them in a real situation.

Even the best contingency plan will not prevent bomb threats from disrupting normal daily activities. However, this disruption can be minimized if the employee who receives the bomb threat knows how handle it. It is very important that the people most likely to receive bomb threats be trained to handle such incidents in the most profitable manner.

VULNERABILITY AND RISK ASSESSMENT

There are instances of many man-made disasters such as terrorist attacks, riots, strikes, incidents of fire (burning of buses and vehicles at the time of strikes) and Road and Rail accidents.

Proneness to different disasters: Shimoga Pattern

SINo.	Type of hazard	Time of occurrence	Potential impact	Vulnerable area
1.	Floods	June - August	Loss of crops, human life, damage to infrastructure such as roads, houses, bridges, etc.	Along the river courses in the district.
2.	Heavy rainfall	June - August	Loss of crops.	Entire district.
3.	Drought	Jan - May	Wilting of crops, scarcity of drinking water, fodder, etc.	In parts of Shimoga, Bhadravathi and Shikaripura talukas.
4.	Forest Fire	Jan- May, any time	Loss of forest flora & fauna	Thirthahalli, Hosanagara, Sagar Talukas
5.	Epidemic of Kyasanur Forest Disease	October to May	Loss of human life	Thirthahalli, Hosanagara, Sagar Talukas
6.	Fire accident	Jan - May, any time	Loss of life and property	Entire district especially during festivals/jathre, etc.

Occurrence of Disasters in the past in Shimoga

Disasters	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	
Earthquake	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Floods	-	-	-	Yes	-	Yes	Yes	Yes	Yes	-	-	-	Yes	-	-	-	-	-	yes
Cyclones	-	-	-	-	-	-	-	-	-	-	-	-	Yes	-	-	-	-	-	
Droughts	-	Yes	Yes	-	-	-	Yes	-	-	-	-	Yes	-	-	Yes	Yes	-	-	
Epidemics	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Industrial accidents	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Fire/Forest Fire	-	-	-	-	-	-	-	-	-	-	-	Yes	-	-	-	-	-	-	
Road/rail accidents	Yes	Yes	Yes	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Boat capsize	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Mine accidents	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Heat/cold wave	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Avalanches	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Building collapse	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Bomb blasts	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Pests	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
River bank erosion	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

Color Photos

2018 ಮುಂಗಾರು ಹಂಗಾಮಿನಲ್ಲಿ ಅತಿವೃಷ್ಟಿಯಿಂದಾಗಿಹೊಸನಗರ ತಾಲ್ಲೂಕಿನ ಜಮೀನುಗಳಲ್ಲಿ silting
(ಮರಳು ಜಮೆ) ಆಗಿರುವ ಬಗ್ಗೆ



Color Photos

2018:-19 ಮುಂಗಾರು ಹಂಗಾಮಿನಲ್ಲಿ ಅಧಿಕ ಮಳೆಯಿಂದಾಗಿ ವರದಾನದಿ ಪ್ರವಾಹ ಸಾಗರ ಮತ್ತು ಸೊರಬ ತಾಲ್ಲೂಕು



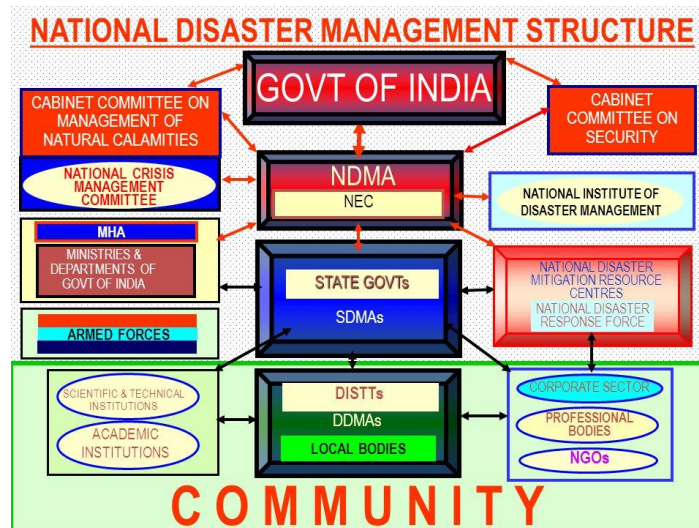
ಶಿವಮೊಗ್ಗ ಜಿಲ್ಲೆಯಲ್ಲಿ 2018:-19 ನೇ ಸಾಲಿನಲ್ಲಿ ಮಳೆಯಿಂದ ಹಾನಿಯಾದ ತೋಟಗಾರಿಕಾ ಬೆಳೆ ಹಾನಿ



CHAPTER-4

INSTITUTIONAL MECHANISM

A) National Disaster Management Authority (NDMA) :



National Disaster Management Authority has been constituted with the Prime Minister of India as its Chairman, a Vice Chairman with the status of Cabinet Minister, and eight members with the status of Ministers of State. Each of the members has a well defined functional domain covering various states as also disaster specific areas of focus and concern to carry out the mandated functions, NDMA has evolved a lean and professional organization which is IT-enabled and knowledge based. Skills and expertise of the specialists are extensively used to address all the disaster related issues. . A functional and operational infrastructure has been built which is appropriate for disaster management involving uncertainties coupled with desired plans of action.

The concept of the organization is based on a disaster divisions-cum-secretariat system. Each member of the Authority heads disaster-specific divisions for specific disaster and functional domains. Each member has also been given the responsibility of specified states and UTs for close interaction and coordination. The NDMA Secretariat, headed by a Secretary is responsible to provide secretarial support and continuity. It is proposed to have two Disaster Management Wings under the Secretariat. They are:-

- DM I wing dealing with mitigation, preparedness, plans, reconstruction, community awareness and dealing with financial/administrative aspects.
- DM II wing is proposed to be composed of the National Disaster Management Operations Centre with the state-of-the-art multi-redundant communication systems, to carry out the tasks of capacity development, training and knowledge management.

B) Karnataka State Disaster Management Authority (SDMA):

THE DISASTER MANAGEMENT ACT, 2005 (NO53 / 2005) DATED 23rd Dec 2005

received the assent of the President, Government of India.

- Based on the provisions contained in the Disaster Management Act 2005, the Karnataka State has adopted the DM Act 2005 and as per the section 14(1) the state has established State Disaster Management Authority. The Chief Minister of Karnataka is the Ex-officio Chairperson of the Karnataka State Disaster Management Authority and 8 Cabinet Ministers are members to the Authority.
- As per the DM Act 2005, the State Government has constituted the District Disaster Authority in each of the district with Deputy Commissioner's of the district as the chair person of the authority and concern department as its members (including ZP).
- The State Executive Committee (SEC) is chaired by the Chief Secretary, Government of Karnataka and Principal Secretaries of Agriculture, Home, Rural Development and Panchayat Raj and Director General of Fire & Emergency Services (permanent invitee) are members of the SEC. SEC meets every quarter or whenever there is emergency situation to take stock of the situation and give necessary instructions to all stakeholders to address the situation. The Chief Secretary and SEC Chairperson is the Commander (Incident Command System) at the State level.
- Government has constituted the State Crisis Management Committee under the Chairmanship of Chief Secretary of Government of Karnataka and other stake holders as its members, vide G.O number RD 61 ETC 2007(P-1) dated 27-04-2010.
- The Administrative structure in the Government for Disaster Management is under the Revenue Department and is being headed by the Secretary to Government, Revenue Department (Disaster Management), the Deputy Secretary, Under Secretary and DM section with supporting staff.
- The KSDMA co-ordinates with all departments of the state to effectively implement the DM Act 2005. It has got responsibility to address Disaster Management issues and Disaster Risk Reduction programs.
- KSDMA has prepared Disaster Management Guidelines, Policies, Standard Operating Procedures for 11 key departments, State Disaster Management Plan and District Disaster Management Plan.

C) District Disaster Management Authority (DDMA):

The Disaster Management function at district level is assigned to the district disaster management authority (DDMA), headed by the deputy commissioner. The Shivamogga district comprises of members from various govt. Department, major industries & institutions in the district.

THE DISTRICT DISASTER MANAGEMENT AUTHORITY, SHIVAMOGGA.

- | | | |
|----|--|------------------------|
| 1. | Deputy Commissioner, Shivamogga. | Chairman |
| 2. | President of the Zilla Panchayat of the District | Co- Chairperson |
| 3. | Addl. Deputy Commissioner, Shivamogga | Co-ordinator |
| 4. | Chief Executive Officer, Zp, Shivamogga | Member |
| 5. | Superintendent Of Police, Shivamogga | Member |
| 6. | District Health Officer, Shivamogga | Member |
| 7. | Executive Engineer, ZP, Shivamogga | Member |
| 8. | Joint Director, Agriculture Dept Shivamogga | Member |

The District Disaster Management Committee (DDMC), Shimoga comprises of following officers:

1.	Deputy Commissioner, Shimoga District	Chairman
2.	Additional Deputy Commissioner, Shimoga.	Co-ordinator
3.	Superintendent of Police, Shimoga	Member
4.	CEO, Zilla Panchayath, Shimoga.	Member
5.	District Commandant, Home guards and Civil Defence, Shimoga	Member
6.	Regional Fire Officer, Shimoga	Member
7.	District Fire Officer, Shimoga	Member
8.	District Health Officer, Shimoga	Member
9.	The District Surgeon, Health Dept, Shikaripura.	Member
10.	The Medical Superintendent, Mc.Gann Hospital, Shimoga.	Member
11.	Deputy Chief Controller of Explosives, Shimoga	Member
12.	Regional Environmental Officer, Shimoga	Member
13.	Commissioner, Municipal Corporation Shimoga	Member
14.	Regional transport Officer, Shimoga	Member
15.	Information and Publicity Officer, Shimoga	Member

16.	Joint Director of Agriculture, Shimoga	Member
17.	Deputy Director, Horticulture, Shimoga	Member
18.	Trade Union Leader, Shimoga	Member
19.	Deputy Director, Animal Husbandry & Veterinary Services, Shimoga	Member
20.	Chief Engineer, UTP (Major Irrigation)	Member
21.	Chief Engineer, KPC, Jog-Kargal	Member
22.	Assistant Commissioner, Shimoga / Sagar	Member
23.	Assistant Director, Factories, Shimoga	Member
24.	Joint Director Food and Civil Supplies Department	Member
25.	Executive Engineer, National Highways, Shimoga.	Member
26.	Superintendent Engineer, PWD, Shimoga.	Member
27.	Executive Engineer, PWD, Shimoga	Member
28.	Executive Engineer, Irrigation, Shimoga	Member
29.	Executive Engineer, PRED, Shimoga	Member
30.	Superintendent Engineer, MESCOM, Shimoga.	Member
31.	Deputy Director, Drugs, Shimoga	Member
32.	Department of Industries and Commerce, Shimoga	Member
33.	IMA, Shimoga	Member
34.	Tahasildar of all Taluks	Members
35.	Commissioner/Chief Officer of concerned ULBs	Members
36.	All Taluk Executive Officers of Taluk Panchayaths in the district	Members
37.	All the Dy. SPs and CPIs in the District	Members
38.	Red Cross office bearers	Member
39.	Colonel, NCC	Member
40.	Coordinators of NSS groups in all the colleges	Members
41.	Self Help Groups	Members
42.	Representative of Scouts and Guides	Member
43.	Representatives of Rotary and Lions	Member

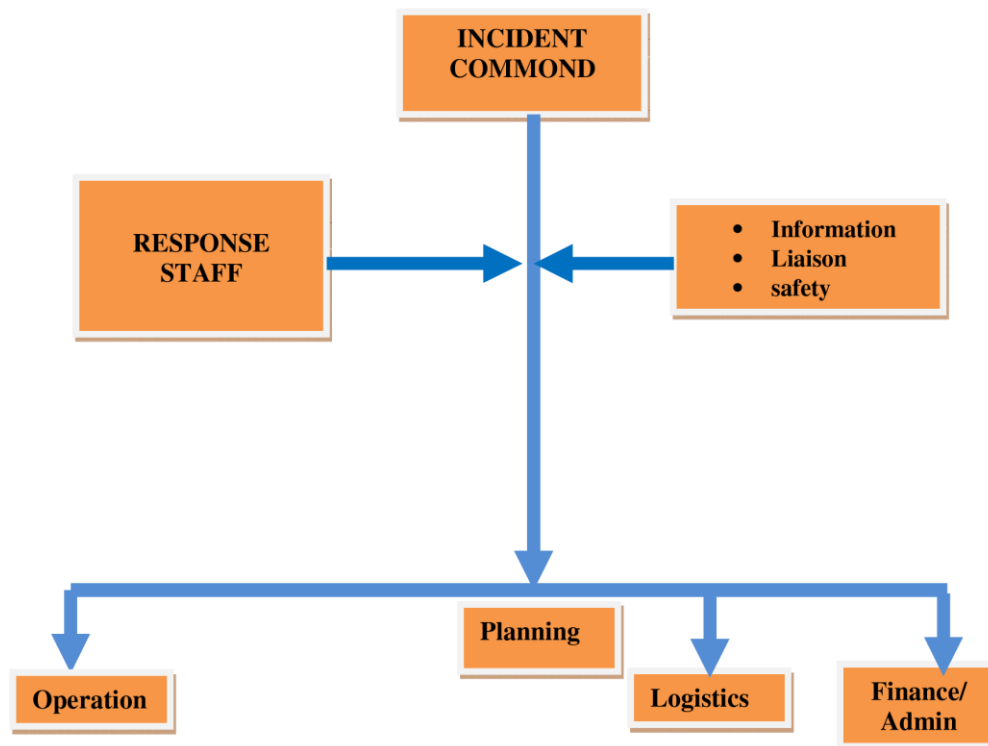
Incident Response System at District level:

Effective response planning requires realistic likely identification of response functions, assigning specific tasks to individual agencies and supply of goods commodities and services to given agencies this crisis response plan requires incident command system in

place. The ICS is an on scene management system to deal with wide variety of disasters the ICS management function includes following 5 functions,

- Command
- Operations
- Logistics
- Planning
- Finance

Incident command teams forms an important component of IRS.



Flowchart showing command flow in IRS

The Deputy Commissioner as a district incident commander does the following;

- Assessment of situation
- Determine objectives and formulate strategy
- Establish immediate priorities
- Establish incident command post
- Set up organizational structure & response
- Overall planning
- Approve & authorize implementation of actions by different agencies
- Ensure public safety measures
- Co-ordinate between incident command post & general staff
- Co-ordinate between people & officers.
- Approve request for additional resources
- Approve the use of students NGO's etc
- Authorize the release of information to the media
- Order the demobilization of teams at appropriate times.

The following officers act as deputy to the district incident commander

I. Information officer (district information officer) – Keep a close watch & organize media briefings.

II. Liaison officer- (ADC)

III. Safety officer (sub-division/ taluka police officer) **Functions of ICS**

- 1 Operation functions – to mobilize
 - Ground or surface based tactical resources
 - Aviation resources
 - Staging areas (temporary location)
- 2 Planning function – collects evaluate processes and disseminates information to manage an incident. Involves the activation of following a. Resources unit
 - Situation unit
 - Documentation unit
 - De-mobilization unit
- 3 Logistic function.- responsible for facilities transportation, communication, supplies, equipment maintenance food services, medical services & ordering services. This involves following 6 units a. Supply unit

- Facilities unit
- Ground support unit
- Communication unit
- Food unit
- Medical unit

4 Finance/ administrative functions- to manage all financial aspects of an incident.

Comprises following units

- Time unit
- Procurement unit
- Compensation/claim unit

Duties and responsibilities of key functionaries in the district

- The emergency responsibilities of key persons in the district are listed below. These duties and responsibilities are common to all types of major emergencies or disasters,(i.e., Natural or Manmade). The Emergency Organization Members will prepare, maintain and be guided by these during any major disaster in the district. Individuals assigned to these functions are expected to co-ordinate their actions with the Deputy Commissioner, who is the District Disaster Manager, will co-ordinate the overall action with all other agencies involved including the District Administration.
- It may be noted that depending on the type of emergency and also availability of staff and resources, functions of various agencies may vary. At times, each person may be required to assume additional responsibilities in addition to their normal duties. This would be the prerogative of Deputy Commissioner to assign the additional responsibilities to the members of the emergency organization.
- It may be necessary to develop agreements with neighboring districts or other organizations if resources are not available within the district for some of these functions
- Following are the duties and responsibilities of the members of the Emergency Organization. These are general in nature and applicable to all types of emergencies.

District Disaster Manager :-Deputy Commissioner

AND:- Additional Deputy Commissioner

The Deputy Commissioner prepares, maintains and keeps updated the District Disaster Management Plan for prevention and minimization of injury and damage caused by a

major emergency or disaster. Prompt and effective response to a major emergency or disaster, relief and recovery, is in consonance with the District Disaster Management Plan. The responsibility includes initiating and maintaining co-ordination and cooperation with various agencies involved , provide prompt information, take decisions and providing infrastructure facilities as requested, to mobilize, direct, and co-ordinate the emergency management staffs during emergency.

Following are the main functions of the Deputy Commissioner during any emergency

- Declaration of emergency after confirming the magnitude of the disaster.
- Activate the Emergency Control Room at Deputy Commissioner's office and make it functional.
- Co-ordinate and establish contact with all agency involved in the emergency actions.
- Ensure setting up of Local Emergency Control Room close to the scene of accident or at Taluk headquarters where the disaster has struck.
- Ensure actions have been initiated to contain the emergency.
- Have overall supervision of all the emergency relief operations.
- Initiate evacuation of people from affected area with the assistance of police, fire and other agencies.
- Depending on type of emergency, mobilize additional resources like heavy lifting gears line cranes, bulldozers for rescue and mitigation operation.
- Set-up safe shelters for evacuated people and ensure they are provided with food and medical attention as the need be.
- Monitor progress or disaster especially in case of natural disasters like cyclone or floods by getting information from various agencies involved and mobilize additional support to mitigate the effects of disaster.
- Keep the State Administration informed regarding the disaster and the steps taken to contain the same.
- Issue statement to the press (both print and electronic media) on the prevailing conditions and the steps being taken by the District Administration to mitigate effects of the disaster.
- Get mutual aid from neighboring districts the Major Hazard Industries or seek the assistance of voluntary organization.

- If required, set-up mobile first aid centre or temporary health centres in the affected area or in the safe shelters.
- Visit the scene of the disaster to have first hand information about the rescue or mitigative operations that are being carried out.
- In case of floods, carry out aerial survey of the affected area to have preliminary estimates of the extent of damage caused.

Disaster Manager :-Assistant commissioner

Alternate: - Tahsildar

The concerned Assistant Commissioner is Disaster Manager and he would rush to the Local Emergency Control Room (LECR) which is set up at the taluk headquarter of the affected taluk. He would function as the link between the affected area and the District Disaster Manager based at the main ECR located in the Deputy Commissioner office at Shivamogga.

Following are the main functions during any emergency

- Set up the LECR at the concerned Taluk headquarters or at a safe place close to the scene of the disaster.
- Depending on the nature of emergency, co-ordinate with the various agencies at local level.
- Initiate the rescue operation with the help of local police, fire or other voluntary organizations and mutual aid members.
- Have close interaction with the Site Controller to ensure proper actions have been taken.
- Visit the affected area to gain first hand information of various steps being taken to mitigate the effects of the disaster.
- Keep the main Emergency Control Room at district head quarters informed about the developments on a regular basis and request for additional help by way of resources or specialized manpower or equipment

TASK FORCE FOR DISASTER MANAGEMENT DURING EMERGENCIES

Assistant Commissioner

(To communicate with core committee, supervise and co-ordinate between Depts)

AEE, PWD	Dy. SP/CPI	Tahasildar	Taluk Medical Officer	AEE, ZP	Animal Husbandry & Veterinary Services
To provide transport to evacuees and Undertake repairs to roads And buildings.	To maintain law and order and provide free passage to evacuees	To provide food, drinking water and milk	To coordinate with PHCs and provide Medical relief.	To provide clean drinking water, temporary shelters (school buildings etc.,)	To provide fodder and veterinary services

SITE CONTROLLER (Tahasildar of affected Taluk)

Alternate: - Deputy Tahsildar

The Site Controller would be at the scene of the disaster or accident and would be reporting to the Disaster Manager located in the Local Emergency Control Room. He is the person who is dealing with the disaster directly in association with the various other emergency services. He would be in direct contact with the Disaster Manager based at the Local Emergency Control Room (LECR).

His responsibilities vary widely depending on the type of emergency. It could be a natural disaster like flood the effects are wide spread where rescue work would be of main concern. It could be a road accident involving a tanker carrying hazardous chemical where quick action has to be taken to arrest the leakage, if any, followed by evacuation of people if required.

Following are the main functions any emergency: -

- ❖ Take measures to mitigate the emergency in association with various emergencies services like fire and police.
- ❖ Keep in constant touch with the Local Emergency Control Room at taluk head quarters with available means of communication and keep Disaster Manager informed about the developments on regular basis.

- ❖ Request for additional help like specialized manpower or equipment to effectively handle the emergency.
- ❖ Rescue and evacuate the people from affected area and shift them to safe shelters.
- ❖ Ensure setting up of safe shelters with basic amenities for food sanitation.
- ❖ Mobilize medical professional with the help of ECR or LECR and ensure the affected persons are given medical attentions.
- ❖ Arrange to shift the injured or sick to specialized hospitals if need be. **Law and**

order function: Superintendent of Police

Alternate: - Sub-divisional Police Officer (SDPO)

It is observed that the police are the first agency to reach the site during any emergency. The local police initiate the emergency action even before the declaration of emergency and setting up of the ECR at Deputy Commissioner Office, Hassan. Even though the main function of the Police is to maintain law and order, it is observed that most of the rescue and relief operation is initiated by the police before arrival of full-fledged rescue teams. **Following are the main functions of Police (at various) levels during any emergency**

Superintendent of Police (SP)

After receiving instructions from Deputy Commissioner, the Superintendent of Police will rush to the ECR and establish contact with the local police station. He would then direct implementation of the action plan through the police station nearest to the scene of disaster. Depending on the type of disaster, ensure cordoning off the affected area by the local police.

- Mobilize additional police force from various sources depending on the requirement.
- Ensure co-ordination with various police and other agencies involved in handling the disaster.
- If necessary mobilize the home guards.

SDPO of the concerned Sub Division:

The SDPO of the sub-division where the disaster has struck would get in touch with the nearest police station and ensure the police team is rushed to the scene of the emergency. His main function would be to act as link between scene of the accident and the Emergency Control Room at Shivamogga.

- On receiving information from the Emergency Control Room, he would rush to the site, assess the situation, obtain first hand information, take control of the overall situation.
- Alert district administration to mobilize Reserve Police personnel for deployment for traffic regulations, supervision of evacuation and security duties.
- Alert area District Commandant of Home guards to mobilize home guards, as necessary (and keep the SP informed).
- Arrange for necessary transportation vehicles for rescue operation in consultation with RTO.
- Arrange for necessary ambulances and other medical facilities for the affected persons in co-ordination with various government and non-governmental agencies.
- Arrange for removal of the dead bodies, identifications and proper preservation.
- Prepare list of missing persons and take immediate steps to trace them.
- Communicate the information to other agencies through police control room.
- Keep in constant touch with ECR to ascertain latest status and intimate police personnel with up to date information regarding response actions and further instructions.
- Arrange for relief to policemen handling the emergency situation.
- **Circle Inspector** :The Circle Inspector of the concerned area would also rush to the scene of the accident and direct the various operations like maintaining law and order, barricading and diversion of traffic away from the scene of accident. His main functions would include:
 - Maintain direct contact with the local police station through the police mobile van.
 - Keep monitoring the progress of various mitigative and rescue measures being undertaken.
 - Ensure police personnel are given updated information for announcement during the emergency.
 - Mobilize government and private buses through RTO for evacuation.
 - Ensure that the bus/vehicle drivers are properly instructed regarding areas to be visited and routes to be taken during evacuation.

- Ensure security duty personnel are at their posts and that only authorized personnel/vehicles are allowed to enter the emergency/affected area with proper identity cards.

Police Sub Inspector of nearest Police Station

The local police station plays an important role during any Industrial disaster in the industrial area around concerned area as well as during any road accident in the district involving a tanker carrying hazardous chemicals.

- Divert traffic away from the scene of accident on major roads. Set up barricades and regulate crowd in affected area.
- Warn and advice people about emergency using vehicle mounted with Public Address system in the affected area.
- Evacuate people and livestock in affected areas using rescue routes identified in advance (depending on wind direction in case of gas leak),
- Provide relief to victims till arrival of rescue team.
- Maintenance of law and order at the scene of emergency and prevention of anti social elements from taking advantage of the situation.
- Ensure law and order and maintain security in evacuated areas.
- Assist in rendering first aid medical help to those in need,
- Ensure police personnel on emergency duty receive proper briefing about possible hazardous effects and are provided with personal protective equipment.

Traffic Police:

Depending on the type of disaster, the traffic police would take control of the traffic movement in the district. During a natural disaster like cyclone or floods the roads may be cut off for a longer period and hence traffic police play a very important role in handling any such emergencies. Their duties would include.

- Stop traffic approaching the affected area and advise the crew regarding the impending danger.
- Ensure tankers containing hazardous chemicals are parked in safe places.
- Check for alternate routes and divert the traffic in a controlled manner to prevent congestion in diversions.
- Keep close liaison with other police agencies and assist in crowd control around the affected area.

- Make way for emergency and relief vehicles on priority basis.
- Monitor the condition of the blocked road and resume normal traffic only when the affected area is declared safe.

Rehabilitation function: Chief executive officer And Project Director (DUDC)

Alternate; Executive Officer, Tq. Panchayath & Chief Officer of affected town

The first and the foremost challenge after a relief operation is rehabilitation of victims.

The CEO & PD sits in DCR and co-ordinates with officers of line departments and local bodies.

Main functions:

- Takes position in DCR and ensure the presence of their officers at sites of operation
- rehabilitation arrangements
- Prepare the list of govt. /pvt. Buildings which may be used as temporary shelters in advance.
- Put up temporary sheds if buildings are not available
- To ensure sanitary operations through local bodies
- To ensure repair and reconstruction of infrastructure in case of damage
- To mobilize local men and materials if required.
- Receives directions of the dy.commissioner and provides him the required feedback about

Factory Inspectorate: Dy. Chief Inspector of Factories

Alternate: - Senior Inspector of Factories.

Factory Inspectorate plays an important role during any industrial and transportation disaster in which there is large-scale release of hazardous chemicals. In case of such disaster, the Dy. Chief Inspector of Factories or Sr. Inspector of Factories would position themselves in the ECR and help the District Administration by providing expert advice for minimizing the effect of such a disaster.

Main functions:

- Ensure the on-site emergency management plan of the affected industry (in case of an industrial disaster) has been activated and the mitigate measures are taken to safeguard the people present in the premises.

- Visit the site of accident to ensure proper measures are taken to control the situation.
- Speed up help from mutual aid members, if required to contain the emergency.
- Mobilize the technical experts for advice if required.
- Inspect the area along with the tech. Co-coordinators and report to Deputy Commissioner for giving all clear signals.

Fire fighting function: District Fire Officer

Alternate: - Station Fire Officer

The Divisional fire Officer/Station Officer will place himself in the main Emergency Control Centre and maintain continuous contact on VHF with the Station Officer at the site. Depending on the need, the Divisional Fire Officer will place himself at the site and maintain contact with the Deputy Commissioner in the Main Emergency Control Centre. The Station Officer/ Sub-Officer/Asst. Sub-Officer of the fire station closest to the scene of disaster will direct fire-fighting operations at the site and keep the Divisional fire officer/station officer informed of the developments at the site.

Main functions:

- Initiate rescue and fire fighting operation with available means. Ensure that all fire fighters use proper personnel protective equipment while fighting a fire or controlling gas leak.
- Help the District Administration in evacuation of people from affected zones using escape routes decided in advance depending on the wind direction.
- Continuously evaluate the situation and decide the necessity to call in additional Fire Engines from neighboring taluks/district.
- Mobilize the services of the home guards for firefighting through the police.
- He will advise the Deputy Commissioner on the extent of evacuation necessary.
- Preserve valuable evidences, which may be useful for investigation later on.
- Ensure availability of water and make arrangement for private water tanker carriers.
- When the emergency is over, carry out joint inspection of affected areas along with site controller and Technical experts to ensure the emergency is under control.

- Send the message of “SAFE” to DC/SP etc to enable him to officially call off the emergency.

Civil defence function: District Commandant, (Home Guards)

Alternate: - Dy. District Commandant

District Commandant/Dy. Commandant will position themselves in the Emergency Control Room and assist the District Administration in mitigating the emergency. They would be continuous in contact with the field officer/units.

Main functions:

- Assist the Police or Fire personnel in carrying out their duties.
- Carry out rescue and evacuation operation in close association with other emergency agencies.
- Evacuated areas would need to be guarded against looting.

Public works/highway function: Superintendent Engineer

Alternate: - Executive Engineer

Depending on type and location of the disaster, the in-charge of the PWD/Highway or Irrigation department representatives would make them available at the ECR and maintain close contact with their engineers who would be at the scene of the disaster.

Main functions: -

- Help the police to divert traffic away from the scene of accident along the entire major roads.
- Ensure diversion routes are in good condition and traffic does not get jammed.
- Exhibit proper diversion signs conspicuously at suitable places.
- Provide the mobile crane/heavy earthmoving equipment for the purpose of salvage operation.
- Provide necessary assistance as required and directed by Deputy Commissioner/Superintendent of Police.

Transportation function: Road transport officer (RTO)

Alternate: Asst.RTO

The transportation department plays an important role during any type of disaster as it would involve large-scale evacuation of people in the affected area. RTO/ARTO would be based at ECR and assist the District Administration in mitigating the emergency.

Main functions:

- Deploy required number of buses with drivers to evacuate people to safe shelters.
- Mobilize various earth moving equipment and other heavy machinery from different sources required for rescue operation.
- Provide mobile workshop if required for urgent repairs/breakdown.
- Provide assistance as required and directed by Superintendent of Police/Deputy Commissioner.

Health function: District Health Officer (DHO)***Alternate: Taluk Health Officer.***

The DHO/THO would be based in the ECR and assist District Administration in ensuring prompt health care to all affected people through their network in affected areas.

Main functions:

- On receiving the information about the emergency DHO will mobilize all the available medical & paramedical Staff for handling emergency.
- Rush medical teams from the nearby hospitals to the scene of the disaster or safe shelters nearby.
- Set up first aid centre at the affected area and rescue shelters.
- Mobilize all the available ambulances and assist in shifting the injured/affected persons requiring the additional attention to hospitals.
- Alert all government & private hospitals to meet any emergency and line of treatment to be followed.
- Alert blood banks to maximize their stock.
- Set up temporary emergency wards with medical facilities to receive the affected victims.
- Inform all the doctors/para medicals regarding the nature of emergency as per the message received from the ECR and also inform about the line of treatment to be followed.
- Ensure sufficient stock of drugs and other medical facilities are available.

- Keep in touch with the district Emergency Control Room and Deputy Commissioner and appraise him of the situation and advice him on additional help required from outside agencies.

Welfare function: Dy. Director, Food and Civil Supply

Alternate: - Assistant Director, Food and civil Supply

The DD/AD, F&CS, would be based in the Emergency Control Room and assist the District Administration in running the safe shelters and relief centres set up during the disaster.

Main functions:

- Will be overall in-charge of Relief and Rehabilitation activities.
- Identify the rehabilitation centre in advance and establish them in shortest possible time.
- Arrange for orderly transportation of population from the emergency zone and adjacent villages in case evacuation has been ordered by Deputy Commissioner.
- Co-ordinate with the other departments connected with relief measures.
- Provide basic amenities such as food, drinking water and sanitation at the rehabilitation centers.
- Distribute food packets at the affected areas to the people, emergency services agencies such as police, fire fighting personnel and others.
- Exercise any other powers to seek any assistance from the local authorities' in achieving this objective.
- Establish contact with the voluntary organizations for assistance.
- To ensure that necessary arrangements are made for the orderly return of all villagers to their respective places once the Deputy Commissioner informs about the termination of the emergency.

Information function: District Information Officer

Alternate: - Assistant Information Officer.

The District Information Officer would be based in the Emergency Control Room during any disaster and assist the district authorities in smooth operation.

Main functions: -

- Upon receiving the information from District Administration, the information officer should co-ordinate with media for giving information regarding emergency.
- Co-ordinate with the affected victims' families for giving information of their dear ones if missing/dead/injured.

Pollution control function: Dy. Environment Officer

Alternate: - Assistant Environment Officer

The representative of the Pollution Control Board would be based in the Emergency Control Room during any disaster and ensure the environmental damage is kept minimum.

Main functions: -

- Mobilize all possible resources at his disposal and keep the laboratory functioning for analysis of pollutants and emissions.
- Rush the team to the affected area for collection of samples and analyze the same.
- Keep the Emergency Control Room informed about the possible effect on human life as well as environment and corrective actions taken to minimize the same.

CHAPTER 5:

AGENCIES & INFRASTRUCTURE AVAILABILITY IN THE DISTRICT

Introduction

The revenue administration for Shivamogga District is headed by the Dy. Commissioner (D.C.) whose office is based at Shivamogga. He is assisted by the Additional Dy. Commissioner and also called as Additional District Magistrate (ADM), stationed at Shivamogga. There are two Assistant Commissioners for the district – stationed at Shivamogga and Sagara.

The taluk's are headed by the Tahshildars who are based at the taluk head quarters and report to respective Assistant Commissioners. Each taluk is further divided into number of Nadakacheris, which are headed by Dy. Tahshildars.

The members of District Crisis Management Group are as follows:

Sl. No.	Designation	Name Shri/Smt.	Appointed as	Mobile	Off/ Res. Phone
1.	Deputy Commissioner	K.B Sivakumar IAS	Chairman	9481492999	08182-271101 /271102
2.	CEO, Zilla Panchayath	Vaishali. M. L KAS	Member	9480876000	08182-223770/ 221866
3.	Superintendent of Police	Shanthraju IPS	Member	9480803301	08182- 261400/261413
4.	Conservator of Forest	Srinivasulu, IFS	Member	9448274444	08182- 240385 / 271548
5.	Additional Deputy Commissioner	Anuradha G. KAS	Co-ordinator	9844488360/ 7892051418	08182-221010/ 274788
6.	Regional Transport Officer	Deepak L	Member	9449864014	08182-222209/ 259911
7.	District Information Officer	Sri Venkatesh Benakatti	Member	9242413050	08182-278638
8.	Assistant Commissioner, Shimoga Dvn	T.V. Prakash	Member	7760057149	08182-222204/ 223181
9.	Assistant commissioner, Sagar Dvn	Dr. Nagraja L	Member	9480760602	08183-226601/ 226602
10.	Joint Director, Food Dept.	A T Jayappa	Member	9448425185	08182-222203

11.	District Health Officer	Dr. Rajesh Suragihalli	Member	9449843063	08182-222382
12.	Medical Superintendent	Dr. Veerupakshappa.	Member	8095136990	08182-271566/ 254585
13.	District Surgeon	Dr. Raghunadhan	Member	9449951637	08182-222412
14.	Assistant Director Factories	Sukadev Banasode	Member	7975660300	-
15.	District Fire Officer	B R Ashok Kumar	Member	7353764130, 8618266343	08182-222888
16.	Commandant, Home Guards	S.Shivakumar	Member	9901824377	08182-222630/ 223330
17.	KPTCL.Executive Engineer	Venkatesh Prasad	Member	9448365429	08182-272624
18.	Suprintendent Engineer, PWD	Shivanand S Banakar	Member	94484-61289	08182-270926/ 225641
19.	Executive Engineer.(spl.Dvn) PWD	Sampath	Member	9986843601	08182-222942
20.	Executive Engineer Major Irrigation	B.N.Paniraj	Member	94492-23659	08182-257189
21.	Executive Engineer. Minor Irrigation	Ameer Jhan	Member	9448244213	08182-248918
22.	Colonel,NCC	K.N.N Murthy	Member	8861256363	08182-240296
23.	Regional Officer KSPCB, (Environment officer)	Harishankar	Member	9449188462	08182-256090/ 248783
24.	KUWS&DB, EE	K S Ranganatha	Member	9480813132	08182-220246
25.	Asst, Drugs controller	Sunil Patil	Member	9880076312	08182-222298
26.	Deputy Director, Animal Husbandry	Sadashiva	Member	94816-12714	08182-222969
27.	President, Hotel Owners association	Majnunath	Member	7760737433	08182-221298
28.	NSS	Srinivasaiah	Member	9448900345	08182-270110
29.	Secretary, Red Cross	Kumar V.L.S	Member	9448105071	08182-273721
30.	President, Rotary Club	Ravishankar	Member	9448727242	
31.	President, Lions Club	Tajmul Husen	Member	9844183264	08182-270819
32.	Office bearers of IMA	Prashanth Islur	Member		08182-223278

Agencies involved in disaster management

The Dy. Commissioner has the overall responsibility in handling any disaster in the district and is assisted by his team as described above. However, during any disaster, many activities have to be carried out at a short notice. Hence, the Dy. Commissioner needs to be assisted by other departments in the district. Keeping this in view, a District Crisis Management Group has been formed under the provisions of Environment Protection Act 1986. The District Crisis Management Group for Shivamogga comprises of members from various government departments, major industries and institutions in the district.

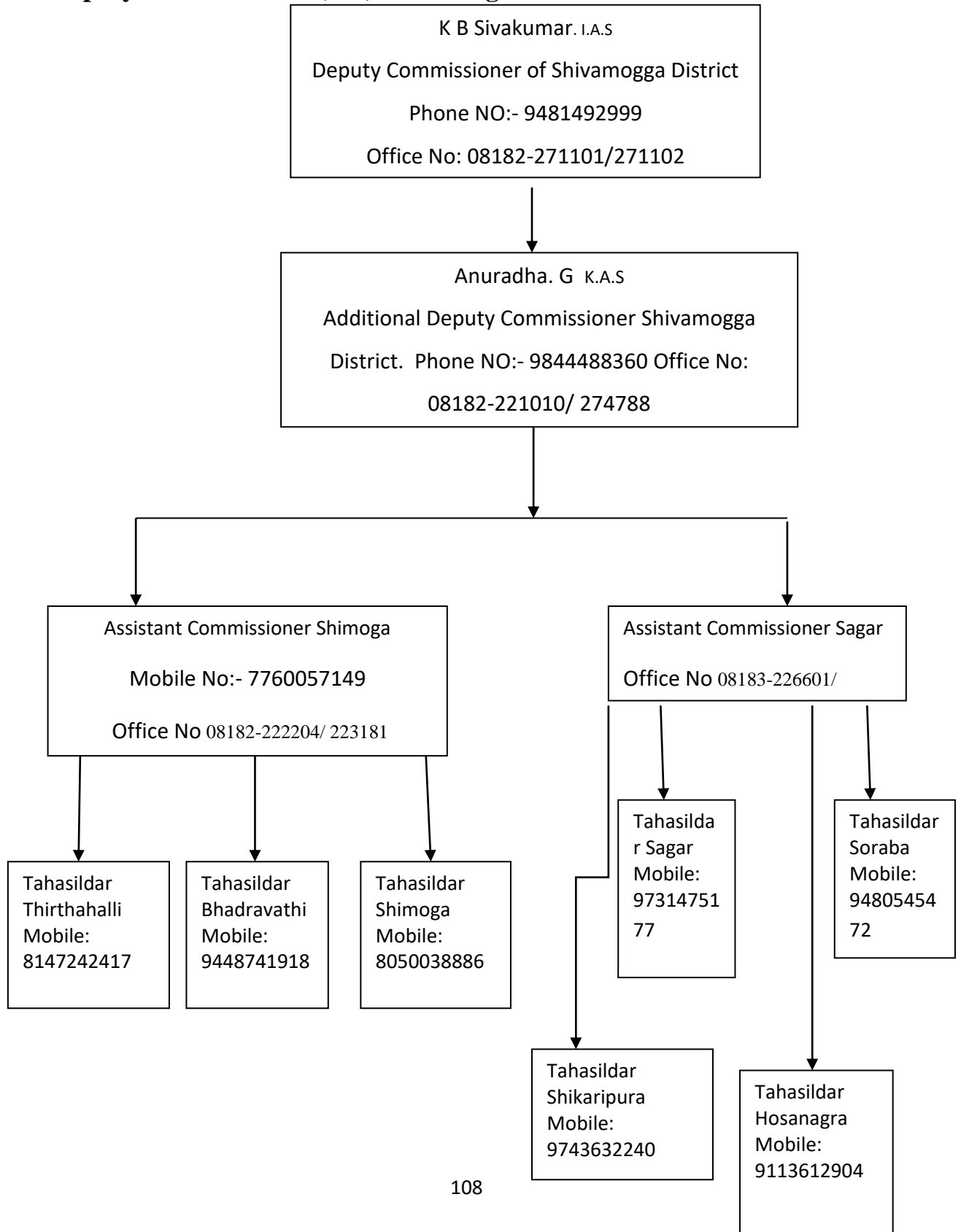
During any disaster, apart from the above member agencies, help may need to be mobilized from a number of non-governmental agencies like voluntary organizations, social service organizations, private hospitals and private transport operators.

The departments and agencies, which will be involved in execution of the Disaster Management Plan, are:

- 1 Deputy Commissioner.
- 2 CEO, Zilla Panchayath
- 3 Superintendent of Police
- 4 Conservator of Forest
- 5 Additional Deputy Commissioner
- 6 Regional Transport Officer
- 7 District Information Officer
- 8 Assistant Commissioner, Shimoga Dvn
- 9 Assistant Commissioner, Sagar Dvn
- 10 Deputy Director, Food Dept.
- 11 District Health Officer
- 12 Medical Superintendent
- 13 District Surgeon
- 14 Tehsildar Shimoga
- 15 Assistant Director Factories
- 16 EO.Taluk Panchayat Shimoga
- 17 District Fire Officer
- 18 Commandant, Home Guards
- 19 KPTCL.Executive Engineer
- 20 Superintendent Engineer, PWD
- 21 Executive Engineer.(spl.Dvn)PWD
- 22 Executive Engineer Major Irrigation
- 23 Executive Engineer. Minor Irrigation
- 24 Colonel,NCC
- 25 Regional Officer KSPCB, (Environment officer)
- 26 KUWS&DB, EE
- 27 Asst, Drugs controller
- 28 Deputy Director, Animal Husbandry

- 29 President, Hotel Owners association
- 30 NSS
- 31 Secretary, Red Cross
- 32 President, Rotary Club
- 33 President, Lions Club
- 34 Office bearers of IMA

Deputy Commissioner (DC) Office organization chart



Police Department:

The police department in the district is headed by the Superintendent of Police. The Superintendent of Police is assisted by one Additional SP.

Shivamogga Police Department**Shivamogga District Police Officers Phone No.**

NAME OF THE OFFICER	RANK/ PLACE WORK	CODE	OFF NO	BSNL M. NO
Shantaraju I.P.S	Superintendent of Police	08182	261402	9480803301
Shekar K.S.P.S	Additional Superintendent of Police	08182	261402	9480803302
1. Shivamogga Sub-division :-				
UMESH ESHWAR NAIK	DY.SP. SHIVAMOGGA	8182	261404	9480803321
Doddapete Circle				
VASANTH KUMAR R	CPI DODDAPETE	8182	261406	9480803330
SHANKARMURTHY	PSI DODDAPETE L&O	8182	261414	9480803345
-	PSI DODDAPETE CRIME	8182	261414	9480803372
MANJUNATH	PSI SHIMOGA TRAFFIC WEST	8182	261417	9480803346
-	PSI SHIMOGA TRAFFIC WEST	8182	261417	9901314958
S M UMESH KUMAR	PSI VINOBANAGARA L&O	8182	261424	9480803315
SRINIVAS	PSI VINOBANAGARA (C)	8182	261424	9480803373
Kote Circle				
MADAPPA	CPI KOTE	8182	261408	9480803331
SHIVAPRASAD	PSI KOTE (L & O)	8182	261415	9480803347
-	PSI KOTE CRIME	8182	261415	9480803374
-	PSI JAYANAGARA (L &O)	8182	261416	9480803348
BASAVARAJ	PSI JAYANAGARA (C)	8182	261416	9480803375
ABHAY PRAKASH	P I WOMEN P.S.	8182	227310	9480803349
SHARAVATHI	PSI WOMEN	8182	227310	7899383568
BHARATHI S N	PSI SHIMOGA TRAFFIC-EAST	8182	240666	8277983633
SHIVUNAİK	PSI SHIMOGA TRAFFIC-EAST	8182	240666	9449036083

Shimoga Rural Circle				
LOKESH G	CPI SHIMOGA RURAL	8182	261410	9480803332
MANJAPPA KUPPELURU	PSI SHIMOGA RURAL (L & O)	8182	261418	9480803350
-	PSI SHIMOGA RURAL (C)	8182	261418	9480803376
THIMMAIAHA H V	PSI TUNGANAGARA (L&O)	8182	261423	9480803370
SHANTHAMMA	PSI TUNGANAGARA (C)	8182	261423	9480803377
JAGADEESHA G.	PSI KUMSI	8182	262332	9480803351

2. Bhadravathi Sub-division

NAME OF THE OFFICER	RANK/ PLACE WORK	CODE	OFF NO	BSNL M. NO
SUDHAKAR S NAIK	DSP BHADRAVATHI	8282	274252	9480803320
Bhadravathi Town Circle				
NANJAPPA	CPI BHADRAVATHI TOWN	8282	266549	9480803334
-	PSI BHADRAVATHI OTPS (L&O)	8282	266343	9480803354
MANJAMMA	PSI BHADRAVATHI OT PS (c)	8282	266343	9480803380
	PSI BHADRAVATHI NT PS (L&O)	8282	274313	9480803355
SARVAMANGALA	PSI BHADRAVATHI NT PS (c)	8282	274313	9480803381
KAVITHA E	PSI BHADRAVATHI TRFFIC (1)	8282	276314	9480803356
-	PSI BHADRAVATHI TRFFIC (2)	8282	276314	9480803354
SOORAPPA Y N	PSI HOSAMANE PS	8282	266022	9480803312
Bhadravathi Rural Circle				
MANJUNATH E.O	CPI BHADRAVATHI RURAL	8282	272333	9480803335
SUNEEL KUMAR	PSI BHADRAVATHI RURAL PS	8282	266033	9480803357
BHARATHI S N	PSI BDVT Paper Town PS	8282	270456	9480803358
SURESH	PSI HOLEHONNUR PS	8282	235494	9480803359

3. Sagar Sub-division

NAME OF THE OFFICER	RANK/ PLACE WORK	CODE	OFF NO	BSNL M. NO
YATHISH N IPS	ASP SAGARA	8183	226082	9480803322
Sagar Rural Circle				
SUNEEL KUMAR M	CPI SAGARA RURAL	8183	226194	9480803336
BHARATH KUMAR	PSI SAGARA RURAL L & O	8183	226194	9480803361
SUJATHA	PSI SAGARA RURAL CRIME	8183	226194	9480803385
PUSHPA	PSI KARGAL	8186	240324	9480803362
NIRMALA	PSI JOG (ASI)	8186	244733	9480803363
PI Sagar Town PS				
MAHABALESHWAR A S NAIK	PI SAGARA TOWN	8183	226067	9480803360
THUKARAM SAGARKAR	PSI SAGARA TOWN	8183	226067	9480803384

4. Shikaripura Sub-division

NAME OF THE OFFICER	RANK/ PLACE WORK	CODE	OFF NO	BSNL M. NO
ADDURU SRINIVASALU	ASP SHIKARIPURA	8187	222442	9480803323
Shikaripura Circle				
BASAVARAJA	CPI SHIKARIPURA	8187	222430	9480803338
RAVI KUMAR A	PSI SHIKARIPURA RURAL (L&O)	8187	223430	9480803366
SHOBHARANI	PSI SHIKARIPURA RURAL (c)	8187	223430	9480803386
RAJUREADDY	PSI SHIKARIPURA TOWN (L&O)	8187	222772	9480803371
PARVATHI BAI	PSI SHIKARIPURA TOWN (C)	8187	222772	9480803386
VASANTH H C	PSI SHIRALAKOPPA	8187	234511	9480803367

Soraba Circle				
UMAPATHI	CPI SORABA	8184	272122	9480803339
-	PSI SORABA L & O	8184	272210	9480803368
-	PSI SORABA CRIME	8184	272210	9480803387

ARAVIND	PSI ANAVATTI	8184	267135	9480803369
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5. Thirthahalli Sub-division

NAME OF THE OFFICER	RANK/ PLACE WORK	CODE	OFF NO	BSNL M. NO
RAVIKUMAR G C	DSP THIRTHAHALLI	8181	220388	9480803340
Thirthahalli Circle				
G V GANESHAPPA	CPI THIRTHAHALLI	8181	228310	9480803333
-	PSI THIRTHAHALLI L&O	8181	228333	9480803352
SUSHMA	PSI THIRTHAHALLI CRIME	8181	228333	9480803378
ASHWIN KUMAR R. J	PSI MALUR	8181	235142	9480803353
-	PSI AUGUMBE (L & O)	8181	233181	9480803314
PARVATHAMMA G.	PSI AUGUMBE CRIME	8181	233181	9480803379
Hosanagar Circle				
GURANNA S HEBBAL	CPI HOSANAGARA	8185	221544	9480803337
HEERYANAIAK	PSI HOSANAGARA PS	8185	221244	9480803364
DEVARAYA	PSI RIPPONPET PS	8185	242635	9480803365
HANUMANTH APPA	PSI NAGAR PS	8185	243433	9480803313
Shimoga Circle				
KRISHNAMURTHY	DY.SP.DAR,SHIMOGGA	8182	261412	9480803306 9482017131
PRASHANTH	RPI DAR SHIMOGGA	8182	--	9480803388
RANGASWAMY	RPI DAR BHADRAVATHI	8282	270495	9480803389
VEERABHADRAIAHA E.S	DY.SP.DCRB, DPO SHIMOGGA		261422	9480803391 7022577701
-	PSI DCRB DPO SHIMOGGA			
HARISH K PATEL	PI DSB, DPO, SHIMOGGA.	08182	261436	9480803307
LAXMIKANTH	PI.DCRB DPO SHIMOGGA		261422	9480803309
KUMARSWAMY	PI DCIB, DPO,SHIMOGGA		261422	9480803308
K.V.SATHISH	PI CONTROL	8182	261413	9480800947

KUMAR	ROOM,SHIMOGA.			
GURURAJ K T	PI CEN CRIME PS			9480803383

**POLICE DEPARTMENT : SP, SHIMOGA
VEHICLE AVAILABILITY IN POLICE DEPARTMENT (2018)**

SI No	Type of Vehicle	Sanctioned Strength	Actual No.		Vehicle on Road	Vehicle Off Road	Remarks
			Petrol	Diesel			
1	Ambassador car	2	2	-	2	-	
2	Qualis/Innova	3	-	3	3	-	
3	Chevrolet Tavera	7	-	7	7	-	
4	Winger/Tavera Interceptor	2	-	2	2	-	
5	Maruti Gypsy	3	3	-	1	2	
6	Jeep/Bolero	67	-	67	53	14	
7	Tata Sumo/Vista /Spacio	16	-	16	15	1	
8	Tempo Trax/Gama	7	-	7	5	2	
9	Mini vajra/RIV	2	-	2	2	-	
10	Mahindra Minibus	2	-	2	-	2	
11	Tata 807	1	-	1	-	1	
12	Tata 407	3	-	3	3	-	
13	Eicher/Tata712 EX Truck	2	-	2	2	-	
14	Leyland Mini Bus	1	-	1	1	-	
15	Tempo/ Force Traveler	13	-	13	13	-	
16	Maruti Omni (Ambulance)	1	1	-	1	-	
17	Swaraj Mazda	5	-	5	5	-	
18	Swaraj Mazda (Ambulance)	1	-	1	1	-	
19	Swaraj Mazda (Crane)	1	-	1	1	-	
20	Tata 1109 Tanker	1	-	1	1	-	
21	Chetak Scooter	3	3	-	2	1	
22	Bullet M/C	1	1	-	1	-	
23	Yamaha YBX-125	11	11	-	10	1	
24	Yamaha FZ-16	10	10	-	10	-	
25	Hero Honda Splendor	5	5	-	5	-	
26	Bajaj Pulsar	62	62	-	62	-	
27	Bajaj CT-100	5	5	-	5	-	
28	TVS Fiero	14	14	-	12	2	
29	TVS Apache	31	31	-	31	-	
	TOTAL	282	148	134	256	26	

Fire and Emergency Department:-

Fire & Emergency Services:

Shimoga Fire Station:

Sl No	Fire Station	Name and Designation	Mobile No	Office No.
01	Shivamogga	1. Sri. Ashok Kummat B.R. District Fire Officer	7353764130	08182-222888
		2. Sri. H K Kabir Das I/c Fire Station Officer	9945569772	
02	Bhadravathi	Sri. Krishnamurthy H K I/c Fire Station Officer	9844737284	08282-270418
03	Sagara	Sri K T Rajappa I/c Fire Station Officer	9008522742	08183-226800
04	Soraba	Sri K. Mahabaleshwara I/c Fire Station Officer	9481691877	08184-272400
05	Shikaripura	Sri Haladappa K I/c Fire Station Officer	9986639235	08187-222101
06	Thirthahalli	Sri Parameshwarappa G I/c Fire Station Officer	9481691872	08181-228101
07	Hosanagara	Sri H.D. Suresh I/c Fire Station Officer	9449327941	08185-221135

Designation	Name Shri/Smt	Mobile	Office/Res. Phones
Regional Fire officer	i/c Ashok Kumar	7353764130, 8618266343	08182-227328
District Fire Officer	Ashok Kumar	7353764130, 8618266343	08182-222888
Fire Station Officer	Sri. HK Kabir Das	9945569772	08182-222888
Assistant F.S.O	Sanjeev B.M	9663407387	08182-222888
Leading Fireman-1669	H. Sadiq	9945983516	08182-222888
Leading Fireman-1811	H. Gangadaraya	8123047818	08182-222888
Leading Fireman-1950	S. Shivarudrappa	8147612021	08182-222888
Leading Fireman-1631	K. Thimanagowda	9886182634	08182-222888
Driver Mechanic-802	R. Manjunath	7847023106	08182-222888
Fireman Driver-1659	K.B Nagaraju	9964918826	08182-222888
Fireman Driver- 2082	N. Anandappa	9481257612	08182-222888
Fireman Driver – 3866	Vijay karoshi	9945587799	08182-222888
Fireman Driver - 3886	Ramesh kumar .V	9481268373	08182-222888
Fireman Driver - 4093	Sathisha .T	9483637317	08182-222888
Fireman 398	V.Nagaraj	9686191071	08182-222888

Fireman 630	B. Santhosh	9845583123	08182-222888
Fireman 3493	K.H.Panduranga	9341004582	08182-222888
Fireman 2825	K.Ravindra Naik	9986994921	08182-222888
Fireman 2753	T.R.Nagarajappa	9902160705	08182-222888
Fireman 2770	S. Vishnu naik	9483389116	08182-222888
Fireman 2926	J.K Venkatesha	7829501195	08182-222888
Fireman - 3371	C.D Ramesh Naik	8748036856	08182-222888
Fireman – 2435	H. Sunil	9886204402	08182-222888
Fireman - 2881	Mohammed Saquib Z	9964180015	08182-222888
Fireman – 2406	N. Aruna	9916317152	08182-222888
Fireman – 2614	K.M. Manjunatha	9972345267	08182-222888
Fireman – 2283	L. Ganga Naik	9845770602	08182-222888
Fireman – 443	Rajesh .K.H	9916045665	08182-222888
Fireman – 4274	G.M Vinay	9916293395	08182-222888
Fireman – 4561	Narendra babu Naik.J	7760344598	08182-222888
Fireman – 4568	Prabhu .S	8722862216	08182-222888
Fireman – 2243	Omkari Naik .R	9481257665	08182-222888
Fireman – 2142	K. Yogeesh	9945091413	08182-222888
Fireman - 2083	B. Lokeshwar rao	8050296573	08182-222888

Bhadravathi Fire Station

Fire Station Officer			08282-270418
Assistant F.S.O	Krishnamurthy H K	9844737284	08282-270418
Leading Fireman 1506	Gulam Hussain	9738863342	08282-270418
Leading Fireman 1690	B.T Nagesh	9945994154	08282-70418
Leading Fireman 198	K.S. Ramesh	9740603979	08282-70418
Fireman Driver 785	D.Shantharaj	9741156987	08282-70418
Fireman Driver 339	G.T.Srinivasa	9632308626	08282-70418
Fireman Driver 2071	S.H Kumar	9980317701	
Fireman Driver 1888	H.V Sureshachar	9481935519	
Fireman 2061	G.Kumarappa	9620731503	08282-270418
Fireman 2236	V.Gurumurthy	9901771724	08282-270418
Fireman 2321	Babu S Gowda	8880191447	08282-270418
Fireman-2753	M. Vinuthana	9060835150	08282-270418
Fireman 2604	L.N.Ananda	9731003560	08282-270418
Fireman 3075	B.S.Pradddp Kumar	9880625140	08282-270418
Fireman 3796	N.S Shashidar	8722563033	08282-270418

Fireman 2930	R. Kariyana	9844701276	08282-270418
Fireman 4303	Harish H.M	8861290122	08282-270418
Fireman 4191	Mahendra M.C	8548852728	08282-270418
Fireman 4579	Raja Naik K.H	7676562069	08282-270418

Sagar Fire Station

Assistant F.S.O	K T Rajappa	9008522742	08183-226800
Leading Fireman 1377	Abudul Razhak	9740375836	08183-226800
Leading Fireman 1454	Eshwar K Naik	9481766754	08183-226800
Leading Fireman 1791	Wilfred gonsalvis	9448921752	08183-226800
Fireman Driver 1700	K. Mahabaleswara	7022557622	08183-226800
Fireman Driver 1754	H. Chennappa	9480439467	08183-226800
Fireman 2016	S.B. Moulesappa	9886418516	08183-226800
Fireman 2194	M.Nandakumar	8105976275	08183-226800
Fireman 2220	J.Ravi	8722834415	08183-226800
Fireman 3332	S.K. Satish	9611576353	08183-226800
Fireman 3146	Prakash .K	8310748522	08183-226800
Fireman 4213	Prakasha Ilagera	7760545618	08183-226800
Fireman 4263	Sreenivasa Desalli	9164076429	08183-226800
Fireman 4529	Kumar swamy .J	9900770792	08183-226800
Fireman 4614	Sridhara N.D	8970320166	08183-226800

Soraba Fire Station

Fire Station Officer	MahaBaleshwara K	9481691877	08184-272400
Leading Fireman 1288	Anand S Gowder	9481651901	08184-272400
Leading Fireman 1510	Subramanya .A	9986413712	08184-272400
Driver Mechanic 750	Prashanth K.N	9741233437	08184-272400
Fireman Driver 1708	Suresh .N	9481253415	08184-272400
Fireman Driver 3930	Sri Syla B Chipalakatti	8497868999	08184-272400
Fireman 1580	D.B. Rajendra	9980257839	08184-272400
Fireman 2231	M.Chandra Naik	9964223524	08184-272400
Fireman 2366	Manjunatha M.R	9900695956	08184-272400
Fireman 2767	Manjunatha F Vaddar	9482548825	08184-272400
Fireman 2711	N.G.Praddp	9901594696	08184-272400
Fireman 2752	D.K Nagaraj	9480524012	

Fireman 2859	H.M.Prasanna Kumar	7618745355	08184-272400
Fireman 3466	Ramakrishna Patagar	9482751761	08184-272400
Fireman 2899	Manjunatha D.B	9902260100	
Fireman 2756	N.Parashuramappa	8105725124	08184-272400

Shikaripura Fire Station

Leading Fireman 1217	C. Anjaneya	9591346136	08187-222101
Leading Fireman 1864	Mohhamed Noorula	99163316804	08187-222101
Leading Fireman 1892	G.G Nagendra	9449759515	08187-222101
Driver Mechanic 224	Santhosh M.S	9945026521	08187-222101
Fireman Driver 194	T. Prashanth Naik	9482065897	08187-222101
Fireman Driver 236	N.Prashanth	9071207819	08187-222101
Fireman Driver 2541	S.E.Girish	9742985740	08187-222101
Fireman Driver 3566	Rakesh.S.S.	9844796669	08187-222101
Fireman 2076	R.Shankar	9164712300	08187-222101
Fireman 518	B.Avinash	9742085064	08187-222101
Fireman 1763	Gadgesh .V.K	9535831689	08187-222101
Fireman 3270	Raghu Kumar G	9901917608	08187-222101
Fireman 3291	Hanumanthappa T.M.	8951373634	08187-222101
Fireman 4246	Sankara Shekara nandihalli	7353299915	08187-222101
Fireman 4256	Shivkumar .K	8970057709	08187-222101
Fireman 2433	Ashoka .K	9986912060	08187-222101
Fireman 3723	Akram Sabh J Irani	9941044460	08187-222101

Thirthahalli Fire Station

Assistant F.S.O	Parameshwara G	9481691872	08181-228101
Leading Fireman 1651	B.H. Chandrappa	9481691872	08181-228101
Leading Fireman 1641	K.C. Hariyappa	9739275577	08181-228101
Leading Fireman 1667	H.B.Srinivas Naik	9480538067	08181-228101
Fireman Driver 1748	K.R.Manjunatha	8277454320	08181-228101
Fireman Driver 3627	K. Ravindra	8105692923	08181-228101
Fireman Driver 827	K.M Nagaraj	9731197324	08181-228101
Fireman 2891	M.K.Chethankumar	8050111064	08181-228101
Fireman 2986	Raghavendra Bovi	7760685822	08181-228101
Fireman 2713	R. Sanmuka	9902355643	08181-228101
Fireman 4367	Umesh .M	8495053687	

Fireman 4139	Anjaneya .L.B	9986683055	
Fireman 4583	Rakesh .U.A	9740172862	
Fireman 4598	Sanju Naik	7353049445	

Hosanagara Fire Station

Assistant F.S.O	-	-	08185-221135
Leading Fireman 1861	H.D. Suresh	9449327941	08185-221135
Leading Fireman 1918	P. Haleshappa	9880209689	08185-221135
Leading Fireman 1951	D. Devendra Naik	8105443451	08185-221135
Fireman Driver 3904	Shivaraj B.J Basapura	8105551889	08185-221135
Fireman Driver 3961	Swami linga	9611833457	08185-221135
Fireman Driver 3969	Sankara Gowda Haganalli	9743153328	08185-221135
1713	K. Thimmappa	9945471237	08185-221135
Fireman 2181	V. Raju moghaveer	9972995783	08185-221135
Fireman 3747	Manjunatha .B	7829361711	08185-221135
Fireman 3844	Anjaneyya .B.C	9590492598	08185-221135
Fireman 2465	G.P. Nijagunaswamy	9483115543	08185-221135
Fireman 2741	Nagaraja .T	9880950025	08185-221135
Fireman 2135	H.C Ramesha	9845706488	08185-221135
Fireman 4154	Beesmachari kamara	7349161348	08185-221135
Fireman 4157	Chikkaya malaiya matapathi	9036986859	08185-221135

DISTRICT FIRE & EMERGENCY SERVICES: RFO & DFO **EQUIPMENTS AVAILABILITY**

Sl. No.	Item Name	Shimoga	Bhadravathi	Sagara	Soraba	Shikaripura	Thirthahalli	Hosanagara
1	Water Tender	01	01	01	02	01	01	01
2	Rescue Van	01	0	00	00	00	00	00
3	Boat With Obm	01	00	00	00	00	0	00
4	Aska Light	02	02	01	01	01	02	01
5	Hydraulic Spreader & Cutter	05	00	00	00	00	00	00
6	Life Jackets	22	10	15	10	10	23	06
7	Life Buoy	08	10	10	10	10	11	06
8	Search Lights	03	02	01	05	00	05	00
9	Sharpex Steel Cutter	02	00	00	00	00	00	00
	Sharpex Chain Saw	01						
	Bullet Jack With 5 Ton	00						

	Lift							
10	Sledge Hammer Large Axe Screw Drivers	05 04 00	03 02 00	03 03 0	01 00 00	01 01 00	01 02 00	01 02 00
11	Electric Generator (Portable) Breathing Apparatus (Self Containing) Pump (Portable)	01 07 01	01 02 01	01 01 01	01 02 01	01 04 01	00 02 00	01 02 01
12	Extension Ladder	02	02	03	02	02	02	02
13	Co2 Type Fire Extinguishers	14	02	10	09	03	04	00
14	Dcp Type Fire Extinguishers	06	01	03	03	04	01	00
15	2 Wheeler TVS (Bike)	01	01	01	01	01	00	00
16	UHF Sets Static Wireless System Uhf Sets Mobile Wireless System Walkie Talkie Sets Wireless System Fire Fighting equipments	01 05 02	01 01 01	01 01 01	01 02 01	01 01 01	01 01 01	01 01 00
17	Door Breaker	00	01	01		00	00	00
18	Pick Axe	05	03	04	03	03	02	01
19	Mumty	11	03	03	04	04	01	00
20	Crow Bar	12	03	04	03	03	02	02
21	Hand Saw	02	02	04	01	01	00	00
22	Fire Hook	01	06	05	01	10	00	00

Home Guards:-

HOME GUARDS : COMMANDANT

District Commandant is the head of the Home Guards department. Next alternate officer is Dy. District Commandant. District Commandant / Dy. Commandant will position themselves in the District Emergency Control Room and assist the District Administration in mitigating the Emergency. They would be continuously in contact with the field officer/units.

The Main functions of Home Guards are:

- Assist the Police or Fire personnel in carrying out their duties.
- Carry out rescue and evacuation operation in close association with emergency agencies.
- Evacuated areas would need to be guarded against looting.

Name and Designation	Contact No
Shivakumar, Commandant	9901824377

Shimoga district Home Guards Strength pattern:

Sl. No	Unit name	Allotted strength	Actual strength	Vacant Post
Shimoga taluk				
1	Shimoga	185	172	13
2	Kumsi	30	30	00
3	Harnahalli	85	85	00
Bhadravathi taluk				
4	Bhadravathi	185	180	5
5	B.R.P	30	30	00
6	Holehonnur	115	109	6
Thirthahalli taluk				
7	Thirthahalli	25	25	00
Sagara taluk				
8	Sagara	65	64	1
9	Joga	50	47	3
11	Anandpurm	15	14	1
Shikaripura taluk				
12	Shikaripura	75	73	2
13	Shiralkoppa	25	25	0
Hosanagara taluk				
14	Hosanagara	30	30	0
15	Rippanpete	25	25	00
Soraba taluk				
16	Soraba	60	60	00
		1000	969	31

LIST OF AVAILABLE EQUIPMENTS IN HOME GUARDS

Sl.No	Description	Total	Remarks
1	Fiber Boats	2	one in Shimoga one in Sagara
2	GRP Boats	1+(1)	Two boat in Gajanur Boat club
3	Out board motor	4	Two in Gajanur Boat club and two in Shimoga
4	Life Saving Jackets	28	
5	Life Buoys	17	
6	Paddles: All Fibers	20	
7	Stretchers (Foldable)	4	
8	Rescue Rope 220 Mtr	7	
9	Search Lights	5	
10	Portable Flood Light	1	
11	Water proof Suits	26	
12	First Aid medical outfit box	3	
13	Crow bars	2	
14	Mumty	2	
15	Shovel	2	
16	Granel (without rope)	1	
17	Hydraulic jacks	1	
18	Tunder bird VHF Static seat	2	7K363, 365
19	3dB GB Antenna	1	
20	30mtrs Co-Aaxla cable with Connector		
21	0 dB gain mobile Antenna	1	
22	VRF SMF Battery 12v 100AH	2	
23	Power supply unit (SMps)	1	
24	Aerial Mast 45" Length	1	
25	Thunder bird VHF Walkie talkie with battery	4	7M351392 597,587,596
26	Thunder Bird walkie talkie spare battery	4	
27	Thunder Bird walkie talkie charger	4	
28	Aska light	14	

LIST OF SWIMMERS AVAILABLE IN SHIMOGA DISTRICT (HOME GUARDS)

Sl.No	Taluk	Name	Address	Contact No.
1	Shimoga	Sridhar Rao	-	9902206614
2	Shimoga	G. E. Shivanand	Vinobanagara, Shimoga	9880705966
3	Shimoga	S.K. Jayaram	Shidralli, Shimoga	9008035049
4	Bhadravathi	Jagadeesh	-	9900283490
5	Shimoga	Nagarajappa	Alkolla, Shimoga	8861973870
6	Bhadravathi	Jakerahamad Khan	Bhadravathi	9343510496
7	Bhadravathi	J. Kumar Venkatesh	Bhadravathi	9945336241

Sl.No	Taluk	Name	Address	Contact No.
8	Bhadravathi	T.R. Bhajantri	Bhadravathi	7899826977
9	B.R.P.	P. Mahesh	K.P.C. Colony, B.R.P.	9448207957
10	Thirthalli	B.S. Devaraj	Thirthalli	9449260111
11	Sagara	Manikantha	Jambagaru, Sagara	9480256741
12	Sagara	Nissarahamad	Sagara	8861512478
13	Sagara	S.G. Udaya	Shiruvala , Sagara	9945326598
14	Sagara	M.S. Ramakrishan	Near Ayappa Temple Sagara	9035605905
15	Sagara	S.T. Manjappa	Shiruvala, Sagara	9741698084
16	Sagara	M.S. Ramachandra	Shiruvante , Sagara	9481351249
17	Sagara	M. Ragavendra	Ashok Road, Sagara	9632614031
18	Joga	S. Prasad	Maralukore, Linganamakki	9480543395
19	Joga	Selvaraj	B.H. Road, Joga	9482032630
20	Joga	Shiddaraju	S.V.P. Colony, Joga	9449699459
21	Joga	Nilakanta	T.M. Sheed , Joga	9480023283
22	Joga	B.S. Vijay Kumar	S.V.P. Colony Joga	9277649140
23	Joga	G.S. Annappa	S.V.P. Colony , Joga	9480431994
24	Joga	G. Annadhore	Malali, Linganamakki	9480223089
25	Shikaripura	B.M. Shamanna	Shikaripura	9844401013
26	Shikaripura	K. Yathish	Shikaripura	7795470021
27	Shikaripura	G.M. Santhosh Kumar	Shikaripura	8722081390
28	Sorab	B. Revanappa	Sorab	9945066084
29	Sorab	B.N. Gopal	Sorab	9964962785

Health Department

Health department plays a very crucial following the aftermath of a disaster as specialized health care needs to be provided to large number of affected persons without wasting valuable time. Hence help may have to be taken from all hospitals in the District, both government and private, during any emergency.

ANNEXURE-1					
Service Particulars of DHO'S/Programme Officer/THO'S of D H & F W S					
SL NO	Location	Designation	Name of the Doctor	Mobile no	office /res Phone No
1	2	3	4	5	6
1	D.H & F.W.Office	Dist. Health & Family welfare office Shivamogga	Dr. Rajesh suragihalli	9449843063	08182-222382
2		Programme Officer			
3	RCH	District R.C.H. Officer, Shimoga	Dr. Nagaraj Naik. L.	9449843209	08182-222389
4	Medical Superintendent	SIMS, Shimoga	Dr. Veerupakshappa.	8095136990	08182-271566/254585
5	District Surgeon	SIMS, Shimoga	Dr. Raghunadhan	9448129688	08182-222412
6	FWO	District F.W. Officer, Shimoga	Dr. Nagaraj Nagalikal	9449843449	-
7	DMO	District Malaria Officer, Shimoga	Dr.J.R. Rudrappa	9880151245	08182-275752
8	DLO	District T.B. Officer, Shimoga	Dr.Shama begam Frakruddin	8050867643	08182-226697
9	DTO	District Leprosy Officer, Shimoga	Dr. Nagaraj Nagalikal (I/C)	9448007972	08182-228563
10	DSO	District Surveillance Officer, Shimoga	Dr.Shankarappa.B. S.	9481981739	08182-075356
TALLUKA HEALTH OFFICER (talluka wise)					

11	THO	Taluk Health Officer, Shimoga	Dr. G.C.Dinesh	9964306757	08182-220169
12	THO	Taluk Health Officer, Bhadravathi	Dr. Gayathri. M.R. (I/C)	9483683754	08282-268752
13	THO	Taluk Health Officer, Thirthahalli	Dr. Ashok. M.V. (I/C)	9480378713	08181-229155
14	THO	Taluk Health Officer, Hosanagara	Dr. Suresh (I/C)	9964462404	08185-221405
15	THO	Taluk Health Officer, Sagara	Dr. Muni venkataraju. D.	8722297749	08183-227092
16	THO	Taluk Health Officer, Soraba	Dr. Arunkumar. U.C (I/C)	9449968450	08184-272216
17	THO	Taluk Health Officer, Shikaripura	Dr. Chandrappa. M.G.	8861783912	08187-223592

AMBULANCE VEHICLES PARTICULARS

Sl no	Hospital Name	Vehicle Number	Office No.	Mobile Number Of Driver
1	COMMUNITY HEALTH CENTER, Ayanoore	K.A 14 G 611	08182-235620	9845429600
2	COMMUNITY HEALTH CENTER, Holalure	K.A 14 G 1084	01882-245450	9844147888
3	Govt. Hospital Bhadravathi	K.A 14 G 692	08282-266630	9343225524
4	COMMUNITY HEALTH CENTER, Holehonnure	K.A 14 G 610	08282-235411	9980272781
5	Govt hospital, Thirthahalli	K.A 14 G 1033	08181-228444	9739408389
6	COMMUNITY HEALTH CENTER, Kannangi	K.A 15 G 110	08181-241909	9481092906
7	Subdivision Hospital, Sagara	K.A 14 G 374	08183-226077	9480068196
8	Subdivision Hospital, Sagara	K.A 15 G 1034	08183-226077	9972569106
9	COMMUNITY HEALTH CENTER, Ananthapura	K.A 14 G 1071	08183-254134	9740761789
10	Govt hospital,, Shiakaripura	K.A 15 G 308	08187-222412	9900768813
11	COMMUNITY HEALTH CENTER, Shiralakoppa	K.A 14 G 1085	08187-234501	7353601845
12	Govt Hospital, Soraba	K.A 15 G 0324	08184-272216	9591009680
13	COMMUNITY HEALTH CENTER, Anavatti	K.A 14 G 1072	08184-267178	9481811847

14	Govt Hospital, Hosanagara	K.A 14 G 924	08185-221202	7899465477
15	Govt Hospital, Hosanagara	K.A 14 G 287	08185-221202	7899465477
16	PHC, Harnahalli, Shimoga Tq	K.A 14 G 8407	08185-221202	7899465477

Details of Staff working in Blood Banks					
Sl.No.	Blood Bank	Location/Address	Availability	Name of Contact Parson	Contact No.
1	Mc.Gann Hospital Blood Bank,	Blood Bank Medical officer, Sagar Road, Shimoga-577 201	24 /7	Hanumantha ppa S H	9916886572
2	Jeevadhara Blood Bank	Blood Bank Medical Officer, # 317, Meena Nursing Home, Madhava Nagar, Bhadravathi – 577 301	24/7	Rajesh	9980405615
3	VISL Hospital Blood Bank,	Blood Bank Medical officer, Bhadravathi.	24/7	-	-
4	Shimoga Mid Town Rotary Charity Foundation,	Blood Bank Medical Officer, Opposite Usha Nursing Home, 100 Ft. Road, Shimoga-577 201	24/7	Sathish	9449685360
5	Subbaiah Medical College,	Purle Village, Shimoga	24/7	Pradeep	9663761171
6	Red Cross Sanjeevini Blood Bank,	Blood Bank Medical Officer, Ist Floor, “Kshiti Complex” JPN Road, Shimoga-577201	24/7	Dinakar	9481210866
7	Sahyadry narayana Hrudayalaya Blood bank,	Harakere, Shivamogga	24/7	Sachin	9632933373
8	Rotary IMA Blood bank,	Rata Beedi, Thirthahalli	24/7	Praveen	9620771443

ANNEXURE-3					
Community Health Centre					
SL NO	Name of the Institution	Contact NO	Name of the Doctor	Mobile no	108 facility
1	CHC,Ayanur	08182-235620	Dr. G.P.Mallikarjuna	8073447546	No
2	CHC,Holalur	08182-245450	Dr.Venugopal,K.L.	9448256044	Yes
3	CHC Holehonnur	08282-235411	Dr.Devanand.	9449429415	Yes
4	CHC,Kannangi	08181-241909	Dr. Rubiya. M.	9449756748	No
5	CHC,Anandapura	08183-262422	Dr.Mohan.K.S.	9480038414	Yes
6	CHC,Anavatti	08184-267178	Dr. Harshapatil I/C	9449968450	Yes
7	CHC,Shiralakoppa	08187-234501	Dr. Mohan.K	9481670099	Yes

ANNEXURE-4				
Primary Health Centre				
SL NO	Name of the Institution	Contact NO	Name of the Doctor	Mobile no
Shivamogga Taluk				
1	PHC,Harannahalli	08182-230422	Dr.Sathish.M.N.	9980964962
2	PHC,Haramagatta	08182-245455	Dr. Ramya.J.P	9164976719
3	PHC,Gondichatnahalli	08182-290304	Dr. Anilkumar.A.D.	9620650725
4	PHC. Kumsi	08182-262434	Dr.Rudrambika.N.S.	9449573246
5	PHC. Mathur	08182-237596	Dr. Ananya.	9315068142
6	UPHC. Kote		Dr. Prakash.C.	8217633178
7	PHC.Sigehatti		Dr.Renuka.K.R.	8277510642
8	PHC.Vidhyanagara	08182-240005	Dr.Chandrashekar,G.B.	8277510639
9	PHC.Mandagatta	08182-235055	Dr.Suresh.S.Appaji	9448755893
10	PHC.Choradi	08182-232005	Dr.Rakesh kumar.K.C.	9964864536
11	PHC.Aladhahalli		Dr. Rajendra.V.S.	9448329755
12	UPHC. Sriramnagara	08182-254960	Dr. Shridhar.G.R.	8277510640
13	UPHC. Bommanakatte	08182-295601	Dr.Nagaraja nayak.L.	9845636929
14	UPHC. Bapujinahara	08182-270370	Dr. Uma,M.C.	8277510643
15	U Metarnity Centre, Thunganagara	08182-273065	Dr.Bheemappa	8277510648
Bhadravathi Taluk				
1	PHC.Mydolalu	08282-244495	Dr. Jagadesh Patil,H.M	9845286586
2	PHC.Arebilachi	08282-236844	Dr. Jagadesh D.M.	8277510562
3	PHC.Aagaradhahalli	08282-247670	Dr. Srinivasa	8277510557
4	PHC.Antharagange	08282-261260	Dr. Girish.H.S.	9449201430
5	PHC.Thaklikatte		Dr. Harish,H.S.	7019314506
6	PHC.Sanyasikodumagge	08282-244380	Dr. Devaraj.K.B.	8861713131

7	PHC.Bhadracolony	08282-261021	Dr. Chidambhara.R.	9449825726
8	PHC.Donabthagatta	08282-263051	Dr. Mirja Sabir husen	9972459009
9	PHC.Yadehalli	08282-247100	Dr. Santhosh B.Halageri	8277510561
10	PHC.Marashettihalli		Dr. Hamida Banu Baligar	9611457001
11	PHC.B.R.Project	08282- 257493	Dr. Vijayakumar,K.N.	8277510552
12	UPHC. Ashwathanagara		Dr.M.R.Gayathri	9449448755
13	UPHC. Ujjanipura		Dr.Giridhar,A.	8277510646
14	UPHC. Neharunagara		Dr. Achuth	9448104995
Thirthahalli Taluk				
1	PHC. Mandagadde	08181-245731	Dr. Suresh,D.S.	8277510570
2	PHC. Agumbe	08181-233224	Dr. Anikethan	8277510564
3	PHC. Aralalur	08181-246310	Dr.Sharat,S.N.	8277510566
4	PHC. Megaravalli	08181-277795	Dr. Preethi,H.R.	8277510573
5	PHC. Devangi	08181-274215	Dr. Nagendra,P.N.	8277510568
6	PHC. Malur	08181-235739	Dr. Shama Anjum	9164546769
7	PHC. Konandur	08181-276310	Dr. Shankar.G.N.	9972190091
8	PHC. Katagaru	08181-234103	Dr. Kiran.S.K I/c	8277510527
9	PHC. Hunchadakatte	08181-251204	Dr. Shobha devi,N.T.	9448293053
10	PHC. Araga	08181-256714	Dr.Tejasvi,J.	8277510566
11	PHC. Guttiyadehalli	08181-244375	Dr. Ashok,M.V.	8277510572
12	PHC.Harogulige		Dr. Venkatesh,B.T.	8277510575
13	PHC.Bettabasavani	08181-293370	Dr. Ashok,M.V. I/c	8277510572
14	PHC.Guddekoppa		Dr. Karthik	9035192536
15	PHC.Yogimalalli	08181-293482	Dr. Manjunatha.C.T.	9980818628
Hosanagara Taluk				
1	PHC. Yadur	08185-268666	Dr. Ayisha siddik Khan	7829609757
2	PHC. Rippenpete	08185-272324	Dr. Anilkumar,N.D.	9448885208
3	PHC. Humcha	08185-262857	Dr. Suresh	9964462404
4	PHC. Haridravathi	08185-272324	Dr. Suresh I/c	9964462404
5	PHC. Maruthipura		Dr.Sowmya,H.S.	9663731030
6	PHC. Nittur	08185-254787	Dr.Jesna Josef	8277510607
7	PHC. Kodur	08185-267343	Dr. Suresh I/c	9964462404
8	PHC. Sonale	08185-245202	Dr. Maruthi.E	9481950488
9	PHC. Sampekatte	08185-253890	Dr.Kavitha.M.K.	8277510681
10	PHC. Nagara	08185-243831	Dr. Thjasvi,B.T.	9591019584
Sagara Taluk				
2	PHC. Thalaguppa	08183-254134	Dr. Saraswathi R.Heggade	9448885093
3	PHC. Tumari		Dr.Beerobha,L.D.	9448104995
4	PHC. Thyagarthi	08183-233304	Dr.Vinayaka.K.B.	8277510619
5	PHC. Avinahalli	08183-237842	Dr. Munivenkataraju.D I/c	8277510610
6	PHC. Kargal	08183-240822	Dr. Munivenkataraju.D I/c	8277510610
7	PHC. Shiravanthe	08183-231530	Dr. Charumathi C.Acharya	8310847725
8	PHC. Bandagadde	08183-260459	Dr.Bharat,S.K.	9480560992

9	PHC. Gouthamapura	08183-265451	Dr. Gururaja.N.K.	8277510609
10	PHC. Heggodu		Dr. Adithya Gajanana Hegade	8277510613
11	PHC. Byakodu	08183-241097	Dr. Vinod kumar	9480589470
12	PHC. Kagodu		Dr. Munivenkataraju.D	8277510610
13	PHC.M.Lingadahalli		Dr. Ravindranatha.S.H.	9483567876
14	PHC.Ullur		Dr. Divya.J	8722520419
15	PHC.Aralagodu		Dr. Munivenkataraju.D I/c	8277510610
16	PHC.Thadagalalle		Dr.Ranjitha.A.S.	-
Soraba Taluk				
1	PHC.Ulavi	08184-252676	Dr.Mubharak	8277510587
2	PHC. Chandragutti	08184-262468	Dr. Raghavendra.H.H.	7760067704
3	PHC.Yannekoppa		Dr. Rakesh Srihari	9964356768
4	PHC.Jade		Dr. Sakunthala bai	9449968450
5	PHC.Shakunavalli		Dr. Asif Iqbal	9448551675
6	PHC. Ottur		Dr. Radha.D.R.	9611353064
7	PHC.Hulthikoppa		Dr. Vinay patel	9901559781
8	PHC.Thattur		Dr.Huchcharayappa.K.N.	9164195998
9	PHC.Harishi		Dr.Divya rao	9449226613
10	PHC. Gudavi		Dr. Akshatha V.Khanapura I/c	9110824873
11	PHC. Hosabale		Dr. Akshatha V.Khanapura	9110824873
12	PHC.Bharangi		Dr. Nuthan Nayak.T.H	9482371898
13	PHC.Kuppagadde	08184- 269922	Dr.Niranjan.K.T.	7338112422
14	PHC.Shigga		Dr.Arunkumar.U.C.	9449756324
15	PHC.Mudidoddikoppa		Dr.Sriharsha patil,B.C.	9449968450
16	PHC. Bettadakurli		Dr. Puja.D	8277510769
Shikaripura Taluk				
1	PHC.Sunnadakoppa	08187-237207	Dr.Giriraj islur I/c	7259265061
2	PHC.Chikkajambur	08187-	Dr.Giriraj islur	7259265061
3	PHC.Kappanahalli	08187-242285	Dr.Chandrappa.M.G	8277510627
4	PHC.Salur	08187-225818	Dr.Harshavardhana.K.G.	8277510638
5	PHC.Chikkajogihalli	08187-243429	Dr.Chandrakanth,K.M.	8277510636
6	PHC.Mattikote		Dr.Manjunatha.K.S.	8277510624
7	PHC. Kaginalli	08187-290690	Dr.Ashoka.J.B	9480767145
8	PHC.Malavalli	08187-295156	Dr. Manjunatha	9591111524
9	PHC. Thogarsi	08187-235471	Dr.Ganesh,J.Raykar	8277510628
10	PHC.Hosur	08187-210154	Dr. Shamanth	7259892520
11	PHC.Maravalli	08187-210164	Dr.Ramkumar	9986322799
12	PHC.Yalagere	08187-295022	Dr.Siddarameswara	9620650725
13	PHC.Hothanakatte	08187-290550	Dr.Naveed Khan	9731435030
14	PHC.Harige	08187-235190	Dr.Prakash.S.R.	9480767145
15	PHC.Hithala	08187-243248	Dr.Uma.H.M.	9449100856
16	PHC.Bilaki		Dr.Prabhu.K.S. I/c	9686498767
17	PHC.Thalagunda		Dr.Prabhu.K.S.	9686498767

18	PHC.Harogoppa		Dr.Gangibai	9480767145
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Panchayat Raj Engineering Department:-

has an important role both during handling of an emergency as well as during restoration phase once the emergency is over. PRED is responsible for maintaining Buildings and roads comes under Panchyat Department and other infrastructure in the district, which are very crucial for effective handling of any emergency.

Following are the contact details

Sl. No.	Designation	Contact
1.	Executive Engineer (Shimoga Shimoga)	98806-33271
2.	Executive Engineer (Sagar Division)	94816-87983

Public Works Department (PWD)

Public Works Department has an important role both during handling of an emergency as well as during restoration phase once the emergency is over. PWD is responsible for maintaining roads and other infrastructure in the district, which are very crucial for effective handling of any emergency. PWD would mobilize earth-moving equipment to help in mitigation of any emergency. And also the department is maintaing the helipads in the district.

Following are the contact details

Sl. No.	Designation	Contact
1.	Executive Engineer (Spl Division)	9986843601
2.	Executive Engineer (Regular Division)	7259791962

HELIPADS: EE, PWD

Taluk	Location of helipad	Surface	Longitude - E			Latitude - N			Near by villages
			D	M	S	D	M	S	
2	3	5	6			7			8
Shimoga	Circuit house premises	Concrete	75 ⁰	34'	30"	13 ⁰	56'	0"	Shimoga Town limit
Bhadravathi	Bhadravathi - umblebailu road (bommanakatte)	Concrete	75 ⁰	42'	0"	13 ⁰	48'	30"	Bommanakatte limit
Bhadravathi	Lakkinakoppa - lakkavalli road	Asphalt	75 ⁰	37'	40"	13 ⁰	42'	50"	Lakkavalli
Hosangara	Marigudda (Mavinakoppa)	Asphalt	75 ⁰	04'	18.09"	13 ⁰	55'	8.50"	Hosanagara Town limit

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Sagara	Mankalale	Asphalt	75 ⁰	0'	10"	14 ₀	9'	24"	Sagara Town limit
	Talaguppa (Churikatte hamlet)	Concrete	74 ⁰	53'	50"	14 ₀	12'	57"	Churikatte
Shikaripura	Shikaripura (near Huchharayasa wmy lake)	Concrete	75 ⁰	22'	23.1"	14 ₀	15'	59.4"	Shikaripura Town limit

Irrigation Department

During the flood emergency in the district, irrigation department monitors the level in the various rivers and reservoirs and pass on the information to the district administration for precautionary operations like evacuation of people living in low-lying area. During the normal times, the irrigation department takes various preventive steps especially just before the onset of monsoon to minimize the effects of the flood.

Following are the contact details

Sl. No.	Designation	Contact
1.	Executive Officer, Minor Irrigation	89717-32049
2.	Assistant Executive Engineer	94808-76103/9481892685

Fisheries Department

During any major natural disaster like Flood, Tsunami, Heavy Rain many fishermen may displace from their homes and the district administration would rehabilitate these persons in the temporary shelters as identified by the district administration.

Following are the contact details

Sl. No.	Designation	Contact
1.	Senior Assistant Director of Fisheries Shimoga	94808-22999
2	Assitant Director Sagara	9480823003
3	Assitant Director Shikaripura	9480823002
4	Assitant Director Bhadravathi	9743370815
5	Assitant Director Thirthahalli	8904809057
6	Assitant Director Soraba	9535386449
7	Assitant Director Shimoga	9480823000

Drug Control Department

Sl. No.	Designation	Contact	Mail
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1.	Manjunatha Reddy V. Assistant Drugs Controller	9449197819	adcshi.dcd-ka@nic.in
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Food Department

During any major natural disaster like cyclone or earthquake, many people may be displaced from their homes and the district administration would rehabilitate these persons in the temporary shelters as identified by the district administration. The Food Department ensures proper supply of various food commodities to the affected people. The department may have to mobilize ration from go-downs in neighboring districts if sufficient stocks are not available or the go-down themselves are damaged or destroyed.

Following are the contact details

Sl. No.	Designation	Contact
1.	Joint Director, Food and Civil Supplies, Shimoga	9448425185

FOOD DEPARTMENT: Availability of Food with District Manager, KSFCSC, Shimoga.

Sl. No.	Name of Taluk	No. of Godwons Available		Regular Stock being maintained Rice/ Wheat		Food Storage Capacity	Name of the person in charge	Contact No.
		Govt.	Pvt.	Rice	Wheat			
1	Shimoga	1	0	1924.00	807.00	900 MT	Siddappa	9945949406
		1	0	862.00	110.00	600 MT	Manjunath	9449686614
		0	1	5194.00	444.00	1100MT	Vinayaka	9448683110
2	Bhadravathi	1	0	4686.00	1278.00	900 MT	Eswarappa	9611532354
		1	0	1587.00	482.00	1250 MT	Srikanta	9740549454
		0	1 (RS SN)	806.00	200.00	600 MT	Gurumurthy	9449426830
3	Sagara	1	0	4479.00	1372.00	750 MT	Krishna	9844278840
4	Shikaripura	0	1	8642.00	1404.00	710 MT	Srinivas	9448392411
5	Thirthahalli	0	1	5117.00	879.00	590 MT	Mallanagwda	9448788965
6	Hosanagara	1	0	2388.00	480.00	300 MT	B Srinivasa	9480023357
7	Soraba	0	1	5148.00	1103.00	1000 MT	S.M. Sivanada	9448862782

Pollution Control Board

The Karnataka State Pollution Control Board is responsible for prevention of any damage to environment during any large-scale release of hazardous chemical from industrial or other installations. The officials of this department should ensure proper actions are taken to minimize the effects during any emergency.

Following are the contact details

Sl. No.	Designation	Contact
1.	Environmental Officer, Shimoga	94491-88462

Forest Department

The Chief conservator of Forests heads the forest department in the district. The district is divided into 3 sub divisions namely Shimoga, Sagar and Bhadravathi which are headed by a Deputy Conservator of Forests (DCF). The Forest department may play an important role during any emergency especially in the forest areas like forest fires, landslide, earthquake or any road accident in the forest area. The department has a very good communication net work, which may be very useful during any emergency.

In Shimoga Forest Division to control Fire, Wildlife damages and removal of dangerous trees existing in roadside and elsewhere. Following are the activities to be taken up as prevention measure activities:

- 1 Setting up of fire detection points with communication network in all ranges.
- 2 Cutting fire lines
 - Along forest boundaries -D Lines.
 - Along roads inside the forests.
 - Along the boundaries of enclosures.
 - Along the Plantations (Older).
 - Along the periphery of Grasslands.
- 1 Establishing Fire Protection Camps and assigning jurisdiction to each camp.
- 2 Establishing Fire tracking and patrolling mobile squads and assigning routes to them.
- 3 Conducting fire meetings with villagers.
- 4 Monitoring, Reporting and documentation of the fire incidents.
- 5 Formation of Elephant Proof Trench along the boundaries of Reserve Forest to

control the wildlife animal damages.

1). Detection and Communication:

Early detection of events and communicating it to camps is the key to minimizing the damages from fire and wildlife. Hence, for detection, elevated points are selected from where the fire and wildlife can be detected easily. Few such elevated places are already there with watchtowers. In the above areas staff will be deployed round the clock to detect the fire / wildlife damage. The staff will be provided with Walkie-talkie/mobile to communicate with camps, patrolling squads & control room in each Range office. At these detection points three watchers will be deployed round the clock on 8 hours rotation for four months i.e. from February to May.

2). Cutting of Fire lines:

Fire lines of 3 Mtrs width need to be cut along the D line i.e., Division Forest boundary, especially along the boundary abetting villages. This will be in addition to 6 Mtrs. D line cut for marking the Forest boundary. This is essential due to the reason that in most of the cases fire enters from these points.

Similarly, fire lines will be cut along Forest roads and paths and in Tourism routes. There are good wooded areas abetting forest boundary in the divisions which also need to be tackled. These areas, if not protected, will act as entry points of fire and eventually affect the forests and wildlife of the area. Also fire lines of 6 mtrs width need to be cut all along the periphery of grasslands.

3). Protection Camps:

Protection Camps consisting of 5 watchers including permanent staff in each camp will be established at strategic points for extinguishing fire during the fire season. These camps will act as action oriented base camps and will swing in to action upon fire incident. As the personnel deployed have to work for 24 hrs, they have to be provided with food and shelter in the form of permanent camps/tents. Each camp will have to be provided with Drums-200 lit(for storing water), Buckets, mugs, cans -25 and 5 lit, spades, sickles, cooking vessels, mats, torch, caps, and solar hand held torches etc.

4). Protection Mobile Squads:

In case of fire incident, after receiving information, reaching the spot early is essential to tackling fire effectively. Hence, at strategic points jeeps equipped with fire

fighting equipments and personnel will be stationed who will be patrolling along fixed routes. Upon receiving information from Fire Protection Camps, they will rush to the spot and help tackle the fire. Continuous patrolling in the area also helps in early detection of fire and it also acts as deterrent against people movement in forest areas. Past experience shows that this method has yielded good results.

5). Removal of Dangerous Trees along the Roadside:

To control dangerous from roadside trees instructions has been issued to the Assistant Conservator of Forest officers and Range Forest Officers concerned to remove the trees by their end and to avoid damages out of such trees during the monsoon season.

CONTACT DETAILS OF FOREST DEPARTMENT

Telephone Number of Shimoga Circle, Shimoga.						
Chief Conservator of Forests, Shimoga Circle, Shimoga						
Name & Designation	Designation	Working Place	Telephone Nos.			E mail address
			Code	Office	Mobile	
SRINIVASULU , IFS	C.C.F.	Shimoga Circle, Shimoga	8182	240385	9448274444	ccfsmgt@gmail.com
Tara Prashanth	DCF & TA to CF	Shimoga Circle, Shimoga	8182	240385	9448244799	
H.C. Satishchandra	ACF	FMS, Shimoga Circle	8182	240385	9448870299	
Deputy Conservator of Forests, Shimoga Division, Shimoga.						
G. U. SHANKAR	DCF	Shimoga Division, Shimoga	8182	272210	94482	dcf.shivamogga@gmail.com
Shimoga Sub Dn.						
R D Puttanalli	ACF	Ayanur Sub-Dn, Shimoga	8182	225836	9448656719	acfayanur@gmail.com
K. Ravi	RFO	Ayanur Range	8182	235626	8861784546	rfoayanur@gmail.com
Krishna Annaiah Gowda	RFO	Arasalu Range	8185	242650	7760478659	rfoarasalu1920@gmail.com
K.C. Jayesh	RFO	Shankar Range	8182	251105	9480524496	shankar.rfo@gmail.com
K.C. Jayesh	RFO	GTD Alkola	8182	250372		rfogetdalkola@gmail.com
Thirthahalli Sub Dn.						

Shivashankar E. IFS	ACF (Prb)	Thirthahalli Sub-Dn,	8181	228206	94483233 58	acftth@gmail.co m
Lokesh B. C.	RFO	Thirthahalli Range	8181	228208	96116905 67	rfothirthahalli@g mail.com
Uma A.	RFO	Agumbe Range	8181	277638	78489918 95	rfomegaravalli@g mail
Vageesh B J	RFO	Mandagadde Range	8181	245550	81971646 59	rfomandagadde1 @gmail.com
K G Prakash	ACF I/C	SandalkotiShi moga	8182	240385	94484075 44	sandalkotismg@g mail.com
K. C. Jayesh	RFO	Sandal koti, Shimoga	8182	240385		sandalkotismg@g mail.com
Deputy Conservator of Forests, Sagar Division, Sagara						
D. Mohankumar	DCF	Sagar Division, Sagar	8183	226071 220440	94489073 01	sagardcf@rediffm ail.com
Sagara Sub-Dn.						
C. Y. Shivamurthy	ACF	Sagar Sub- Dn,	8183	226071	94811530 82	acfsgr@gmail.co m
D.R. Promodh	RFO	Sagar Range	8183	227266	94495414 07	rfosagar@gmail.c om
K. B. Mohankumar	RFO	Chordi Range	8182	232024	94811790 49	rfochoradi@gmail .com
K. B. Chaya	RFO	Kargal Range	8186	240818	87629390 57	rfokargal@gmail.c om
M. Raghavendra	RFO	GTD, Sagar	8183	226071	99803163 29	gtdrfosagar@gma il.com
Soraba Sub-Dn.						
Gopya Naik	ACF I/C	Sorab Sub- Dn, Sorab	8184	272249	94484459 45	acfsoraba@gmail .com
Ganeshappa M Shettar	RFO	Sorab Range	8184	272249	89516410 82	rfosoraba@gmail. com
Javad Basha Angadi	RFO	Anavatti Range	8184	267011	94487838 75	rfoanvatti@gmail. com
Javad Basha Angadi	RFO	GTD, Anavatti				
Hosanagar a Sub-Dn.						
M R Vijaykumar	ACF	Hosanagara Sub-Dn	8185	221430	88615160 84	acfhnr@gmail.co m
Aravind S L	RFO	Hosanagara Range	8185	221204	99453782 12	hnrrfo@gmail.co m
Adarsha	RFO	Nagara Range	8185	243435	94802747 27	rfongr2011@gmai l.com
Aravind S L	RFO	GTD, Hosanagara				
Shikaripura Sub-Dn.						

Gopya Naik	ACF	Shikaripura Sub-Dn	8187	222210	9448445945	acfshikaripura@gmail.com
K. B. Ragavendra	RFO	Shikaripura Range	8187	222210	9449205968	rfoshikaripura@gmail.com
Manjunatha S. V.	RFO	Shiralkoppa Range	8187	234577	9481738322	shiralakopparange@gmail.com
Madhava Doddabudagi	RFO	Ambligola Range	8187	290439	9901841705	rfoambligola@gmail.com
K.B.Ragavendra	RFO	GTD, Shikaripura			-	
Deputy Conservator of Forests, Bhadravathi Division, Bhadravathi.						
POOVAIAH K K	DCF	Bhadravathi Division	8282	266355	9448386369	dcfbdvt@yahoo.in
Channagiri Sub-Dn.						
Subramanya K V	ACF	Channagiri Sub-Dn	8282	266355	9448971522	dcfbdvt@yahoo.in
Seenappa Bhovi	RFO	Bhadravathi Range	8282	266340	9481576790	rfobhadravathi@gmail.com
Anand B.	RFO	Channagiri Range	8189	228031	9743566668	rfochannagiri@gmail.com
D. Maavina holiyappa	RFO	Shanthisagar Range	8189	230247	9108172266	rfoshn@gmail.com
Manjunatha R. T.	RFO	Umblebylu Range	8282	295222	9880214445	rfoumblebylu@gmail.com
D. Maavina holiyappa	RFO	FMS, Channagiri	8189	228031	9108172266	rfofmschannagiri@gmail.com
Tarikere Sub-Dn.						
B.M. Ravindrakumar	ACF	Tarikere Sub-Dn	8261	222229	9449154665	acftke0025@gmail.com
K.R Rajesh	RFO	Tarikere Range	8261	222369	7338559254	rfotke0026@gmail.com
Mahesh Naik	RFO	Ajjampura Range	8261	245575	9620393451	rfoajjampura@gmail.com
K.M.Chandrashekar Reddy	RFO	Lakkavalli Range	8261	239453	9481464071	rfolakkavalli@yahoo.com
Parasuram. L	RFO	GTD, Tarikere	8261	222369	9483807851	acftke0025@gmail.com
Deputy Conservator of Forests, Wildlife Division, Shimoga.						
I. M. NAGARAJ	DCF	Wildlife Division, Shimoga	8182	222983	9900833660	dcfwlshimoga@gmail.com
Shimoga WL Sub-Dn.						
B. Vijayakumar	ACF	WL Sub-Dn Shimoga	8182	222983	8762221897	dcfwlshimoga@gmail.com

H.L. Halappa	RFO	WL Range Shimoga	8182	222983	99649444 75	rfowl.smg@gmail.com
Shivaraj Matad	RFO	WL Range, Gajanur	8182	234236		rfowlgajanur@gmail.com
R S Gonda	RFO	WL Range, Hanagere	8182	263050	99456663 43	rfohanagere@gmail.com
Gururaj. C. B.	RFO	Mugudthi WL Range	--	--	94496286 56	wlrmugudthi@gmail.com
Dr. Vinay	Veterinary Doctor	Lion Safari, Shimoga	--	--	99720472 08	dcfwlshimoga@gmail.com
Kargal WL Sub-Dn.						
B. Vijayakumar	ACF I/c	WL Sub-Dn, Kargal	8186	240387	87622218 97	wlrkargal@gmail.com
Preeti Ramdas Nayak	RFO	WL Range, Kargal	8186	240387	90353865 36	wlrkargal@gmail.com
B. Sudhakara	RFO	WL Range, Kogar	--	--	84959894 87	rfokogar@gmail.com
Deputy Conservator of Forests, Social Forestry Division, Shimoga.						
Nataraj H Desai	DCF	Social Forestry, Shimoga	8182	223900	94835254 96	dcfsmsg@gmail.com
Shimoga Sub Dn.						
K.G. Prakash	ACF	SF Sub-Dn Shimoga	8182	251053	94484075 44	dcfsmsg@gmail.com
Purushotham	RFO	SF Range Shimoga	8182	251053	94487614 81	rfoshimogaf@gmail.com
Sagara Sub-Dn.						
K.T.Vishwanath	ACF	SF Sub-Dn Sagara	8183	228986	94483376 80	acfsfgr@gmail.com
Sanjay	RFO	SF Range Soraba	8184	272101	93806711 78	rfosorabaf@gmail.com
Pawankumar N.	RFO	SF Range Shikaripura	8187	222809	93800241 01	rfosshikaripur@gmail.com
G. Kubernaik	RFO	SF Range Sagara	8183	228986	96862645 72	rfosagaraf@gmail.com
Deputy Conservator of Forests, FMS, Shimoga						
I. M. NAGARAJ	DCF (I/C)	FMS, Shimoga	8182	222772	99008336 60	dcffmssmg@gmail.com
Aynur Sub-Dn.						
H. C. Balachandra	ACF	FMS, Ayanuru	8182	235626	63605416 56	dcffmssmg@gmail.com

A.R. Sanjay	RFO	FMS, Shimoga	8182	222772	96864536 21	dcffmssmg@gmail.com
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RTO

Regional Transport Officer (RTO) would be responsible for making arrangement for vehicles required by the district administration during any emergency. The vehicles may be required for mass evacuation of affected people to safer area or for movement of men and relief materials to affected area. The vehicles could be mobilized both from the public transport companies and from private parties.

Sl. No.	Designation	Contact
1.	Regional Transport Officer, Shimoga	9449864014
3.	ARTO, Shimoga	va
4.	ARTO, Sagar	9449864015

BUS OWNERS (RTO)

ROAD TRANSPORT DEPARTMENT OF SHIMOGA DISTRICT.

Sl. No.	Name of the Agency/Travels	Address	Mobile No.	No. of vehicles
Shimoga				
1	Sri. K.V.Jayaprakash, President, Bus Owners Association	Opp. Raghavendra Math, Tilak Nagar, Shimoga	9448121077	45
2	Sri. Murugesh, President, City Bus Owners Assn.	Shashikumar Motors B.H. Road, Shimoga	9945504909	04
3	Sri. P. Rudresh	Sri Veerabhadreshwara Motor Service, Venkateshnagar, Shimoga	9844127272	06
4	Sri. Paul Govies	Anjali Motor Service, Vinobanagara, Shimoga	9448125664	05
5	Sri. Chandru	S.C.M. Motors, Vidyanagar, Shimoga	9945220823	08
6	Sri.Raghavendra Rao	Sri Durga Parameshwari Motors, Sharavathinagar, Shimoga	9448122664	02
7	Sri. Murugesh	Shashikumar Motors, Vinobanagara, Shimoga	9945504909	04
8	Sri. K.P. Lokesh	Shiva Motor Service, Gopala Gowda Badavane, Shimoga	9886020701	02
9	Sri. Kantharaju	Sri Vinayaka Motor Service,	9448657525	02

Sl .N O.	Name of the Agency/Travels	Address	Mobile No.	No. of vehicles
		Gopala Hudson, Shimoga		
10	Sri. K. Suresh	S.V.T. Motors, Buddha Nagar, Shimoga	9448105173	03
11	Sri. Vijay Motor Service,	Bye Pass Road, Ardor, Shimoga	9448121077	40
12	Sri.H.G.Muralidhar Kamath	Sri Krishna Motor Service, Arya Durgamma Street, Shimoga	9845552727	35
13	Sri. B.V. Narahari	Sri. Manjunatha Motors, Gandhinagar, Shimoga	9448121482	25
14	Sri. Shabbir Ahamed	M.M.S. & S.T.A., K.R.Puram Road, Shimoga	9482204648	05
15	Sri. Althaf Ahamed	M.M.S. & S.T.A., K.R.Puram Road, Shimoga	9448123023	04
16	Sri.A.M. Gangadhar	S/o. Murigeppa, Manjunath Motor Service, Someshwara Nilaya, Josephnagar, Shimoga	9483003560	07
17	Sri. B.M.Siddalingaiah	Sri Siddalingeshwar Motor Service, J.P.N. Road, 2 nd Cross, Shimoga	9448576107	02
18	Smt. Lalithamma	Sri. Mallikarjuna Motor Service, Bommalingeshwar Nilaya, Savalanga Road, Shimoga	9886989060	06
19	Sri. G.K.Nanjundappa	Sathish Travels, Jyothi Nilya, Achuthrao Lay Out, Shimoga	9845144188	05
20	Smt.Poornima Santhosh,	W/o. Santhosh, Sri Veerabhadreshwar Motors, Kuvempu Road, Shimoga	9886034834	03
21	S.G.M.T.Co. Ltd.	S.G.M.T.Co., Ltd., Sagar	9731160776	23
22	Sri. Vishnumurthy	Sri Manjunath Motor Service, Sharavathinagar, Shimoga	9448024917	03
23	Sri. N.K. Rajendra	Ganesh Motor Service, Sharavathinagar, Shimoga	9448126239	02
24	Sri. Ramesh Babu	Venkata Mahalaxmi Motors, Jail Road, Shimoga	9448683116	04
25	Sri. A.G.Veereshappa	Sri Gururaja Motor Service, Basaveshwar Nagar, Shimoga	9448105193	04
26	Sri.N.D.Kashinathappa	Basaveshwara Nagar, Shimoga	9844174525	04
27	Sri. H.D.Chandrakumar	Jyothi Motors, Neal Old Ramakrishna Ashram Road, Vinobha Nagar, Shimoga	9448105128	03
27	Sri. N.Jayarao,	Venkateshwar Motors, Gandhinagar, Shimoga	9845244919	03
29	Sri. Prabhakar Gogi	Jwalamala Motors, Channappa Lay Out, Shimoga	9448016128	03
30	Sri.Sirsappa Gogi	Vani Motors, Gandhinagar, Shimoga	9448207685	03
31	Sri. Vijendra Shenoy	Ananda Motors, Urgadoor, Shimoga		04
32	Managing Director	H.T.Co., Udupi	9242733000	15
Sagar				
33	Executive Director,	S.G.M.T.Co., Ltd.,	9731160776	35

Sl .N O.	Name of the Agency/Travels	Address	Mobile No.	No. of vehicles
		Sagar		
34	Sri. K.B.Gangaraj	Prakash Travels, G.P. Road, Sagar	9449171219	30
35	Sri. Venu Madhavachar	Sri Lakshmi Motor Travels, Gandhinagar, B.K. Road, Sagar	9972177059	06
36	Smt. Sukalatha Shetty	Sri Vijayalaxmi Motors, Gandhinagar, Sagar	9886976443	04
37	Sri.A.S.Chandrashekaraiiah	Sri Guru Renuka Motors, Nehru Nagar, Sagar	9448238723	03
38	Sri. Nataraj Ukkuna	Sri Mallikarjuna Motors, Subhash Nagar, Sagar	9480214540	03
Hosanagara				
39	Sri. T.M. Prakash Rao	Sri Gurushakthi Motors, Kargadi, Hosanagara Taluk.	9481852666	13
40	Sri.B.S.Nageshappa	Sri Bhaghyalaxmi Travels, Bidarhalli, Taluk. Hosanagara	9449783023	05
Thirthahalli				
41	Secretary, S.V.A.B.S.S. (Sri. Vijayadev)	Sahyadri Adike Belegarara Sahakar Sangh, Thirthahalli	9449494255	20
42	Sri. Nagaraj Prabhu	Kathyani Motors, Thirthahalli	9448152027	08
43	Sri. Mohandas Pai	Sri Navadurga Prasad, Ranjadakatte, Thirthahalli	9448100818	04
44	Sri. B.K.Ahamed	B.K.A. Travels, Konandur, Thirthahalli	9731157333	05
Bhadravathi				
45	Sri. S.S.Jagadish	Sri Gururenuka Motors, C.N. Road, Bhadravathi	9448147115	06
46	Sri.S.J. Mohan	Sri Gururenuka Motors, C.N. Road, Bhadravathi	9886077793	06
47	Sri. M.V.Ramesh	Sri Malasamba Motors, Boothanagudi, Bhadravathi	9611698191	04
48	Smt.Kamal Manjunath	Manjunath Motors, Kudlagere, Bhadravathi Taluk.	9620323588	05
Shikaripura				
50	Sri. J.M. Gopal,	Bharathi Motors, Soppinkere, Shikaripura	9880279489	04
51	Sri. Sridhar Hegde	Sri Vijayalaxmi Motors, Shishuvihar Road, Shikaripura	9886644179	04
52	Sri. N. Manohar	Sri . Rajalaxmi Motors Kelagina Kere, Shikaripura	7204511742	04
53	Sri. P.R.Sukumar	Janapriya Motors, Shikaripura		03
54	Sri. Samiulla	Janapriya Motors Shikaripura	9742886171	03
55	Sri. Mohammed Ali	Janapriya Motors, Shikaripura		04

**JCB/HITACHI:
AVAILABILITY IN SHIMOGA DISTRICT. (PWD)**

Sl. No.	Taluk	Vehicle No. JCB/Hitachi	No.	Vehicle Owner's Name & Address	Mob. No.
1	Hosanagara	Hitachi	1	B.G.Jagadesh Gowda Class -1 Contractor, Kodur Post, Hosanagara Taluk.	94491 32819
2	Hosanagara	Tata Hitachi 70	1	C.V.Chandrashekhar Class -1 Contractor, Nagara(Post), Hosanagara Taluk	94489 21762
3	Hosanagara	Tata Hitachi - 110 Tata Hitachi - 70	1 1	K.Ravindra Class -1 Contractor, Yeduru(Post), Hosanagara Taluk.	94496 23285
4	Sagar	JCB TATA -70 Hitachi TATA -120 Hitachi	02 02 01	M/s G.D Thimmappa Sheregar. Class -1 Contractor, Kundapura. CAMP: BATTEMALLAPPA Hosanagara Taluk	9448145012
5	Sagar	JCB TATA -110 Hitachi TATA -70 Hitachi	2 1 2	M/s Manjushree, Construction co., Class -1 Contractor, Ankada katte, Koteswara, Kundapura Thaluk. CAMP: Shikaripura	9448461019
6	Sagar	JCB TATA - 70 Hitachi	11	Sri Sharth. J ShetClass -1 Contractor, Vijayanagara, Sagar.	9448456717
7	Sagar	TATA- JCB TATA -70 Hitachi	1 1	Sri S.K Chandra Class -1 Contractor, Sharadapura, Yadagigalemane(P) Sagar Taluk.	9448218799
8	Sagar	JCB	1	Sri B.M Manjappa Class -1 Contractor, Marasa Post, Sagar(T)	9449672406
9	Sagar	TATA -70 Hitachi	1	Sri Mahesh. R Class -1 Contractor, Landikere, Shiravanthe (p) Sagar (T)	96110 07169
10	Sagar	JCB	1	Sri H.N Narayanappa Class-1 Contractor, Housing Board Colony, Gandhinagara, Sagar.	94486 28495
11	Shikaripura	JCB	1	Sri M.Raghunath Class -1 Contractor, II Cross, Ragavendra Badavane, SHIKARIPURA	94800 23838
12	Soraba	JCB	1	Sri G.Abubakar Class-1 Contractor, Hosapete Extension, Soraba	99724 28644
13	Shimoga	JCB	2	Sri. C.H. Nagesh, Class 1 Contractor, No. 24 " Mallari Krupa " Jayadeva Badavane, Alkola, Shimoga.	9480544187
14	Shimoga	JCB Hitachi	3 1	M/s. S.R. Construction Company, Class 1 Contractor, Nalluru, Andra Pradesh.	9900229999

Sl. No.	Taluk	Vehicle No. JCB/Hitachi	No.	Vehicle Owner's Name & Address	Mob. No.
15	Shimoga	Hitachi JCB	2 3	Sri. Jagadeeshwarudu Chilkuri, M/s. Haigreeva Infratech Projects Ltd. No. 2-349/1, Old Dairy Form, Vishaka Patnam - 530040, Andrapradesh	9740219999
16	Shimoga	JCB	2	Sri. M. Dinakar Shetty, M/s Nandi Construction, Class 1 Contractor, Sharavathi Nagar, Shimoga.	9448121228
17	Shimoga	JCB	2	Sri. G.S. Mallikarjuna, Class 1 Contractor, 5 B. Cross, Gandhi Nagar, Shimoga.	9341724974
18	Shimoga	Hitachi JCB	2 2	Srinivas, Rao Construction, Class 1 Contractor, M.F. 2/2 B.D.A. Flats, Bannerughatta Road, Bangalore.	9886614132
19	Shimoga	JCB	2	Sri. Subramani P. Class 1 Contractor, Ashirvad, 1st Main Road, Ranganatha Badavane, Gopala.	9902028676
20	Shimoga	JCB Hitachi	2 1	N. Manjunath, Class 1 Contractor, 3rd Cross, A.N.K. Road, Shimoga.	9448145511
21	Thirthahalli	Hitachi JCB	2 2	Sri. Ibrahim Shareef, Class 1 Contractor, Balebailu, Thirthahalli Taluk. Shimoga District.	9448126696
22	Thirthahalli	JCB	2	Sri. S. Sheshagiri, Class 1 Contractor, Kushavathi, Thirthahalli.	9448344327
23	Thirthahalli	JCB Hitachi	1 1	Sri. Abdul Kalam Ajad, Class 1 Contractor, Thirthahalli	9448154311
24	Bhadravathi	Hitachi JCB	1 2	Sri. Ranganath Giri, Class 1 Contractor, Baballi, Bhadravathi Taluk. Shimoga District.	9845376540
25	Bhadravathi	Hitachi JCB	1 2	Sri. B. Divakar, Class 1 Contractor, Bhadravathi	9448129455
26	Bhadravathi	Hitachi JCB	2 2	Sri. J. Bhaskar Rao, Class 1 Contractor, Flot No. 567, Road No. 92, Jubli Hills, Hyderabad.	9849999124
27	Bhadravathi	Hitachi JCB	1 2	Sri. Udaya Shetty, Class 1 Contractor, Muniyala, Karkala Taluk.	9480345814

Southern Railways

Railways are an integral part of the district and may assist the district administration in meeting any emergency. On the other hand there could be a railway disaster in the district, which could call for activation of District Disaster Management Plan.

Railways :

Location	Designation	Name Shri/Smt	Mobile	Office/Res. Phones
Shimoga District	Station Manager	Surrendar	9731667946	08182-222660
Shimoga District	Dy. Station Manager	Chandraprasad		

Karnataka State Road Transport Corporation:

The Karnataka State Road Transport Corporation (KSRTC) would be the main source of vehicles for movement of public during or immediately after any emergency in the district. There should be good communication between the KSRTC authorities and the district administration during any emergency to ensure prompt mobilization of vehicles to ensure quick evacuation of the general public who are affected or likely to get affected during any emergency.

Karnataka State Road Transport Corporation:

Location	Designation	Name Shri/Smt	Mobile	Office/Res. Phones
Shimoga District	Depo Manager Shimoga	Dinesh	77609-90464	
Shimoga District	Depo Manager Bhadravathi	Ramachandra	7760990468	
Shimoga District	Depo Manager Sagar	Ramesh	7760990467	

NDRF – National Disaster Response Force

National Disaster Response Force consists of 12 battalions, three each from the BSF and CRPF and two each from CISF, ITBP and SSB. Each battalion have 18 self-contained specialist search and rescue teams of 45 personnel each including engineers, technicians, electricians, dog squads and medical/paramedics. The total strength of each battalion is 1,149. All the 12 battalions have been equipped and trained to respond natural as well as man-made disasters. Battalions are also trained and equipped for response during chemical, biological, radiological and nuclear (CBRN) emergencies.

Sl. No.	Designation	Contact
1	Commandant – 10 th Battalion ANU Campus, Nagarjuna Nagar, Guntur (AP) Pin - 522510	0863-2293178 0863-2293050 0833-3068559 ap10-ndrf@nic.in
2	The Maratha Regiment – Belgaum, Karnataka	+91-8950708018 +91-8884458230 +91-8884456601 +91-8884456602 +91-8884456603 +91-8884456604

Other Industries/plant:

The following are the contact details for 3 MAH units of this district.

Sl. No	Name and address	Manufacturing details	Contact person
1	Visveswaraya Iron & Steel Plant (unit of SAIL) Taluk: Bhadravathi Dist: Shimoga	Manufacture of Steel, Alloy Castings, Pig Iron, Foundry.	B S Venkatesh GM Works& Occupier Mobile: 9449870670 Off: 08282 271667-2020 Surajit Mishra DGM (Electrical, IED & C&IT) &Factory Manager Mobile: 9449870721 Off: 08282 271667-2021
2	The Mysore Paper Mills Limited Paper Town Post, Bhadravathi, Dist.: Shimoga	Integrated factory with rated capacity of Newsprint – 75,000 Tons/Annum Cultural paper – 37,000/Annum Sugarcane Crushing – 2,500 Tons/day	B.P.Ravindranath Chief Operating Officer & Factory Manager 08282-270780(O) 9945176693 G.S.Srinivas, Chief Administrative Officer, 08282-270743 (O) 9008579944
3	Indian Oil Corporation Ltd LPG bottling unit, KIADB Industrial Area Machenahalli, SHIMOGA	Bottling LPG cylinders	Y.Mangalur Chief Plant Manager – 08182 246112, Mobile : 9448285559 P. H Obappa Manager- 08182-246168 Mobile-9481775716

Voluntary Organization

The district administration has to depend on the local voluntary organizations to effectively meet any emergency. This is because of the less response time required for mobilization and also because of the familiarity of the place which is very important factor. Emergency control room (ECR)

To respond to any disaster in the district effectively, the ECR should be located at a strategic location and should be well equipped. An inventory of certain facilities must be maintained in the ECR.

Location and manning

The ECR is proposed to be set up in the DC's Office building located in Shivamogga so that it is easily approachable during any emergency.

The ECR is normally not manned but the district administration may consider manning the same with skeleton staff during monsoon period when there are chances of floods / cyclone in the district. However, during an emergency, members of Emergency organization and other supporting staff would man the ECR.

Only a limited and prearranged number of people would be admitted to the ECR when in use, which would eliminate unnecessary interference and reduce confusion. Security would be put in-charge of limiting access to the ECR.

There should be an alternate ECR at different location, which could be mobilized in case the **main** ECR is directly affected by the accident or too risky to operate. The Alternate ECR could be Superintendent of Police office building.

Facilities to be made available in the ECR

The Emergency Control Centers would be equipped with the following facilities:

- 1 Maps of the district and individual talukas
- 2 Extra copies of the maps to be used for spot marking of affected areas, movement of vehicles, evacuated areas, etc.
- 3 Communication facilities consisting of dedicated telephones (STD / ISD), mobile telephone, satellite telephone, fax machine, wireless sets, radios, tape recorder and televisions.
- 4 Personal computer, printer with Internet connection.
- 5 Backup power generator for lighting and communication system
- 6 Tel. Nos. of all the coordinators (both office and residence), voluntary Organizations, Hospitals, Ambulance services, Blood Banks etc.

PHONE DIRECTORY

Sl.No	Designation	Office Tel.No	Res.Tel.No	Email ID
1.	Deputy Commissioner, Shimoga	08182-271101	08182-271102	deo.shimoga@gmail.com
2.	C.E.O., Z.P.	08182-223770	08182-221866	ceo_zp_shm@nic.in
3.	A.D.C.	08182-221010	08182-274788	hqa.shimoga@gmail.com
4.	Superintendent of Police	08182-261400	08182-261401	dcshi@ksp.gov.in
5.	A.C., Shimoga	08182-222204	08182-223181	acshimoga@gmail.com
6.	A.C. Sagar	08183-226601	08183-226602	acsagar@gmail.com
7.	Tahasildar, Shimoga	08182-279312	08182-220775	tehsil.shimoga@gmail.com
8.	Tahasildar, Bhadravathi	08282-267283	08282-268097	tehsil.bhadravathi@gmail.com
9.	Tahasildar, Thirthahalli	08181-228239	08181-228120	tehsil.thirthahally@gmail.com
10.	Tahasildar, Sagar	08183-226074	08183-226169	tehsil.sagar@gmail.com
11.	Tahasildar, Sorab	08184-272241	08184-272290	tehsil.sorab@gmail.com
12.	Tahasildar, Shikaripur	08187-222239	08187-222249	tehsil.shikaripur@gmail.com
13.	Tahasildar, Hosanagar	081852-221235	08185-221314	tehsil.hosanagar@gmail.com
14.	Commissioner, City Municipal	08182-226565	08182-223222	itstaff_cmc_shimoga@yahoo.com

	Council, Shimoga			
15.	Chief Conservator of Forests	08182-240385	08182-271548	ccfsmgt@gmail.com . cfsmgt@gmail.com
16.	D.C.F.	08182-272210	08182-278425	dcf.shimog@gmail.com
17.	J.D., Agriculture	08182-222635	08182-225635	dagrshi@rediffmail.com
18.	District Registrar	08182-274175	-	smgdro@gmail.com
19.	Deputy Registrar of Coop. Dept.	08182-222711	08182-223198	drcs-shimoga-ka@nic.in
20.	DDPU	08182-276904		ddtt.pue@gmail.com
21.	DDPI	08182-223851	08182-254327	ddpi.edu.shm@gmail.com
22.	District Information Office Shimoga	08182-278638	08182-277247	varthbhavanasmg1@gmail.com
23.	District Information Office Shikaripur	08187-222355	-	varthbhavanaskp@gmail.com
24.	E.E., MESCOM. Shimoga, Dvn.	08182-271100	08182-240446	eesmgmescom@rediffmail.com
25.	E.E., MESCOM. Bhadravathi, Dvn.	08282-270187		eebdvtmescom@rediffmail.com
26.	E.E., MESCOM. sagar, Dvn.	08183-226290		eesgrkptcl@rediffmail.com
27.	E.E., MESCOM. Shikaripur, Dvn.	08187-222625, 222675		eeshikaripura@rediffmail.com
28.	E.E., MESCOM. Shikaripur, Dvn.	08187-222625, 222675		eeshikaripura@rediffmail.com
29.	E.E.,PWD, Spl.	08182-		spdivision@gmail.com

	Dvn.	222942		
30.	E.E.PWD	08182-274942	08182-271642	eesmg@kpwd.gov.in
31.	E.E., Z.P. Shimoga	08182-222936	08182-265173	zpedsmg@yahoo.com
32.	E.E.ZP. Sagar	08183-226064	08183-226094	eepre.sagar.07s@gmail.com
33.	District Statistical Officer	08182-222035	-	des.shimoga@gmail.com
34.	District Youth Officer, NYK	08182-223328	08182-270303	adyssshimoga@gmail.com
35.	D.D., Animal Husbandry	08182-222969	08182-223821	smgnoahvs@gmail.com
36.	R.T.O	08182-222209	-	rtosmg_ka@nic.in
37.	District Health Officer	08182-222382	08182-250870	dhoshimoga@gmail.com
38.	Medical Superintendent	08182-271566	08182-254585	dsshimoga@gmail.com drl dg65@gmail.com
39.	District Surgeon	08182-222412	-	mohshikaripur@gmail.com
40.	Minor Irrigation	08182-250112	08182-250311	eemidsmg@gmail.com
41.	Regional/District Fire Officer	08182-227328		rfoshimoga@ksfes.gov.in
42.	Commandant Home Guards	08182-222630		cmdt_shg@rediffmail.com
43.	Regional Officer KSPCB, (Environment officer)	08182-256090	08182-248783	shimoga@kspcb.gov.in
44.	KUWS&DB, EE	08182-220246	-	gn.surendra2020@gmail.com
45.	Ferry Department	08183-226349	9880571912	

46.	District Sports and Youth Service	08182-223328	08182-270303	
47.	District Treasury	08182-279788	-	dto.shimoga.dot@gmail.com
48.	D.O., B.C.M.	08182-222129	08182-265523	dobcmshimoga@gmail.com
49.	D.S.W.O	08182-249241	-	dswoshi-swd-ka@nic.in
50.	Commandant, Home Guards	08182-222630	-	shiva_sampath@yahoo.co.in
51.	Police Control Room	100		
52.	Fire Brigade	08182-101/ 222888		

District and Taluk Level Officers

Sl. No	Name	Designation	Mobile No	E-Mail ID
1	K.B Sivakumar	Deputy Commissioner, Shimoga	9481492999	deo.shimoga@gmail.com
2	Anuradha G	Additional Deputy Commissioner Shimoga	9902602220	hqa.shimoga@gmail.com
3	Shantharaju	Superintendent of Police, Shimoga	9480803301	spshi@ksp.gov.in
4	M. L Vaishali	Chief Executive Officer, Zilla Panchayat, Shimoga	9480876000	ceo.shimoga@gmail.com
5	Chidanand S Vatare	Commissioner Munciple Corporation Shimoga	7337872669	cmr.emcshimoga@gmail.com
5	Ashok Kumar	District Fire Officer	7353764130, 8618266343	dfoshimoga@ksfes.gov.in

Sl. No	Name	Designation	Mobile No	E-Mail ID
6	Dr. Rajesh Suragihalli	Dist. Health & Family welfare office Shivamogga	9449843063	dhoshimoga@gmail.com
7	Deepak L	Regional Transport Officer. Shimoga	9449864014	rtosmg-ka@nic.in
8	Jayappa	Joint Director Of Food And Civil Services	9448425185	ddfoodshimoga@gmail.com
9	Sampath	Executive Engineer	9986843601	spdivision@gmail.com
10	P.T Ramesh	Executive Engineer	7259791962	eesmg@kpwd.gov.in
11	Shadakshari	Senior Assistant Director Of Fisheries	9480822999	sadfshimoga@gmail.com
12	Shivakumar K M	Executive Engineer	9448985979	-
13	Yogish	Deputy Director Of Horticulture	9448999216	ddhsmg@gmail.com
14	Sukadev Bansode	Assitant Director of Factories	8105733519	-
15	Kiran Kumar	Joint Director Agriculture Department Shimoga	8277932600	dagrshi@gmail.com
16	T.V. Prakash	Assitant Commissioner Shimoga	7760057149	acshimoga@gmail.com
17	Dr. Nagaraj L	Assitant Commissioner Sagara	9480760602	ac.sagar@gmail.com
18	Girish	Tahasildar Shimoga	8050038886	tehsil.shimoga@gmail.com
19	Somshekar	Tahasildar Bhadravathi	9448741918	tehsil.bhadravathi@gmail.com
20	Bhagya	Tahasildar Thirthahalli	8147242417	tehsil.thirthahally@gmail.com

Sl. No	Name	Designation	Mobile No	E-Mail ID
21	Kaviraj	Tahasildar Shikaripura	9743632240	tehsil.shikaripur@gmail.com
22	Pattaraja Gowda	Tahasildar Soraba	9480545472	tehsil.sorab@gmail.com
23	Sridharmurthy	Tahasildar Hosanagar	9113612904	tehsil.hosanagar@gmail.com
24	C.K.Nayak	Tahasildar, Sagar	9448584727	tehsil.sagar@gmail.com
25	B. R Venkatesh Vittal	District Calamity Case worker	8904639649	deo.shimoga@gmail.com
26	Gopinatha S N	District Disaster management Professional	8105408431	gopinatha.s.n@gmail.com
27	Pramoda H.P	Project Director DUDC Shimoga	9538534685	shimogadudc@gmail.com

Zilla Panchayat Officer Details

SI No	OFFICIAL	Mobile No
1	CEO	9480876000
2	DS1	9480876010
3	DS2	9480876001
4	PD	9480876002
5	CPO	9480876004
6	CAO	9480876003

Taluk Panchayat Officer Details

SI No	Taluk Panchayat Name	OFFICIAL	Mobile No
1	Bhadravathi	EO	9480876105
2	Soraba	EO	9480876125
3	Hosanagara	EO	9480876110
4	Sagar	EO	9480876115
5	Shikaripura	EO	9480876120
6	Shimoga	EO	9480876100
7	Thirthahalli	EO	9480876130

ALL CONTORL ROOMS CONTACT No.

Sl. No.	Taluk	Control Room No.
1)	Shimoga	08182-261413
1)	Bhadravathi	08282-274200
2)	Sagar	08183-227100
3)	Shikaripura	08187-222430

Agriculture Department:-

Sl No	Name	Designation	Contact No
01	Kiran Kumar M	JDA. Shimoga	8277932600

Industries and Commerce, Shimoga (State Sector):

Location	Designation	Name Shri/Smt	Mobile	Office/Res. Phones
Shimoga District	Joint Director	R Gannesh	9448716248	08182-222802
Shimoga District	Deputy Director	Va	*	08182-222802,
Shimoga District	Assistant Director	Va	-	08182-222802
Shimoga District	Assistant Director	H.Suresh	9845691958	08182-222802
Shimoga District	Superintendent	S.Y.Ramesh	9448639767	08182-222802

Industries and Commerce, Shimoga (Zila Panchayath Sector):

Location	Designation	Name Shri/Smt	Mobile	Office/Res. Phones
Shimoga District	Va	Deputy Director (KVI)-DIC,Dy.Dr. Incharge	-	08182-223376,
Shimoga District	S P Raveendranath	Assistant Directore	9448319763	08182-223376,
Shimoga Taluk	Prasanna	Ind. Extension Officer, Shimoga (Inc)	9448401714	-
Bhadravathi Taluk and Shikaripura	Nagaraj.S.	Indl. Extension Officer, Bhadravathi	9481743640	-
Thirththalli Taluk and Hosanagar	Chandrashekar.M.	Indl. Extension Officer, Thirthahalli	9449948663	-
Sagara Taluk	Chandrashekar.M.	Assitant Instructor and incharge Indl. Extension Officer, Sagara	9449948663	-
Soraba Taluk	Nagaraj.S.	Instructor and incharge Indl. Extension Officer, Sagara	9481743640	
Shikaripura Taluk	Nagaraj.S.	Instructor and incharge Indl. Extension Officer,	9481743640	

		Sagara		
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KPTCL :

Location	Designation	Name Shri/Smt	Mobile	Office/Res. Phones
Shimoga District	Superintendent Engineer	Venkatesh Prasad	9448365057	08182-272624
Shimoga District	Exicutive Engineer	-	9448365414	08182-272624

MESCOM :

Location	Designation	Name Shri/Smt	Mobile	Office/Res. Phones
Shimoga District	Superintendent Engineer	Nataraj D	9448189444	
Shimoga District	Exicutive Engineer	Veerendre H R	9448289446	

Karnataka State Pollution Control Board:

Location	Designation	Name Shri/Smt	Mobile	Office/Res. Phones
Shimoga District	Environmental Officer	Y. S. Harishankar	9449188462	08182-256090/

Information & Publicity Department :

Location	Paper Name	REPORT'S NAME Shri/Smt.	MOB.NO.	Res., Office Phones
Shimoga District	Senior asst. director , Information dept. Smg.	Shafi Saduddin	9480841222	08182-278638
Shimoga District	Prajavani,	Chandrasah Hiremalali	9448470164	08182-228228
Shimoga District	Somyutha Karnataka	Smt. Kavitha	9449738938	08182-271661
Shimoga District	Kannada prabha	Honnali chandrashekar	9844518866	08182-279322
Shimoga District	Udayavani	Gopal S yadigere	9448127845	08182-270921
Shimoga District	Vijaya Karnataka	Chandrashekar	9980889878	08182-277434
Shimoga District	Hosadigantha,	Subramanya horabillu	9341844208	08182-276999
Shimoga District	Vijaya Vani	Aravind Aklapura	8884432109	
Shimoga District	The Hindu	Veerendra P.M.	9880520909	
Shimoga District	Times of India,	C.V. Ragavendra Rao	9448531130	08182-249500
Shimoga	Indian Express,	Ramachandra	9448093362	08182-279322

Location	Paper Name	REPORT'S NAME Shri/Smt.	MOB.NO.	Res., Office Phones
District		Gunari		
Shimoga District	Deccan herald,	Nrupathuga S.K.	9986982025	08182-228228
Shimoga District	Deccan Cronical	Sachin Melligatti	9481090983	
Electronic Media Persons				
Shimoga District	Udaya T.V	Srikanth kamath	9844060597	08182-240977
Shimoga District	E- T.V	Nagaraj	9343310665	08182-220324
Shimoga District	T.V-9,	Basavaraj	9980914153	08182-228999
Shimoga District	Suvarna T.V.	Rajesh kamath	9632201541	
Shimoga District	Doordarshan,	Lokesh J. nagesh	9449327817	
Shimoga District	Kasturi T.V.	Praveen bada Chinnu	9972570126	
Shimoga District	Samaya T.V,	Ravi Bidarur Mahesh	7259012045	
Shimoga District	Janashri T.V.			
Shimoga District	Public T.V.	Halaswamy	9900060852	
Shimoga Local Papers which are in Media list.				
Shimoga District	Navika,	Latha Rangaswamy	9980402433	
Shimoga District	Sahyadri,	Manjunath	8050477921	08182-402045
Shimoga District	Namma Nadu	K.V. Shivukumar	9448319855	08182-225211
Shimoga District	Echharike,.	Y.K. Suryanarayana	9449834322	
Shimoga District	Kranthideepa,	N. Manjunath	9448628499	08182-273909
Shimoga District	Voice of Shimoga,	Bandigadi Nanjundappa,	9901352698	08182-404616
Shimoga District	Shimoga Times,	N. Chandrakanth	9448124557	08182-226699
Shimoga District	Shimoga Telex,	N Ravikumar	9448105095	08182-656596
Shimoga District	Ushamahi,	Shanthi kannappa	9242223537	08182-223550
Shimoga District	Kantirava	N. M. Shashikumar	9844328646	08182-277341
Shimoga District	Malenadu Mitra,	D. somasundaram	9845371133	08182-223639
Shimoga District	Chaladankamalla,	G padmanabha	9448628131	
Shimoga District	Tunga Taranga,	Gajendra Swamy	9448256183	
Shimoga District	Nudigida,	H. N Manjunath	9343310037	
Shimoga	E-patrike,	Nagesh naik	9448346849	08182-405198

Location	Paper Name	REPORT'S NAME Shri/Smt.	MOB.NO.	Res., Office Phones
District				
Shimoga District	Janahorata,	Y V. Srungesh	9448127375	08182-273753
Shimoga District	Shimoga Simha,	G. Chandrashekar	9845484824	
Shimoga District	Kannada Janantharanga,			
Shimoga District	Kranthi Bhaghth,	Lingappa	9986536448	08182-226692

**FOREST DEPARTMENT :CCF, SHIMOGA CIRCLE
DETAILS OF SAWMILLS- SHIMOGA FOREST CIRCLE**

Sl.No.	Taluk	Location	Name of the Sawmill	Contact No.
1	Shimoga	New Thirthahalli Road Shimoga	M/s Durga Sawmill,	08182-223791
2	Shimoga	Ravivarma Street, Shimoga	Parmeshwara Sawmill,	9449756817
3	Shimoga	Near Bridge, Shimoga	Laxmi Sawmill & Wood Industries,	08182-223226
4	Shimoga	O.T. Road, Shimoga	Muruli Sawmill & Wood Industries,	8182-224898
5	Shimoga	New Mandli, Shimoga	Renukamba Sawmill & Wood Industries	9448319692
6	Shimoga	Swarline Road, Shimoga	Sharada Sawmill	9448403622
7	Shimoga	Sheshadripuram, Shimoga	Laxmi Venkateshwara Sawmill & Wood Industries,	08182-274016
8	Shimoga	Mandli, Shimoga	Annapurneshwari Sawmill & Wood Industries,	9448130251
9	Shimoga	Buddha Nagara, Shimoga	Maruthi Sawmill & Wood Industries,	9448131697
10	Shimoga	Ayunur Toll Gate, B.H. Road, Shimoga	Patel Sawmill,	08182-257752
11	Shimoga	Sagara Road, Shimoga	Ambika Sawmill & Wood Industries	9448120710
12	Shimoga	Sagar Road, Shimoga.	Gowri Shankar Sawmill & Timber Merchant,	9886754555
13	Shimoga	B.H. Road, Shimoga	Shankar Vijaya Sawmill & Timer Merchants,	08182-256453
14	Shimoga	Buddanagara, Shimoga	Ashok Sawmill,	9449685136
15	Shimoga	Railway Station Road, Shimoga	Manjunatha Sawmill	9448403636
16	Shimoga	Buddha Nagara, Shimoga	Janatha Sawmill,	08182-2236240
17	Shimoga	Raviverma Street, Shimoga	Sri Sawmill,	9886155660
18	Shimoga	Buddha Nagar, Shimoga	Gurunatha Sawmill	9448145389
19	Shimoga	Ravivarma Street, Shimoga	Ravivarma Wood Industries & Sawmill,	08182-223812
20	Shimoga	K.S.F.I.C, Shimoga	K.S.F.I.C, Shimoga	08182-270714
21	Shimoga	Kumsi, Shimoga Taluk	Sri Prakash Rice & Sawmill	9448872847

Sl.No.	Taluk	Location	Name of the Sawmill	Contact No.
22	Shimoga	Ayunur, Shimoga Taluk	Mukambika Sawmill & Wood Industries, Timber Merchant & Cart Manufactures,	9448238334
23	Shimoga	Vidyanagar, Ripponpete	Durgambika Krupa Sawmill & Wood Industries,	9448185278
24	Thirthahalli	Patrekere, Thirthahalli	Jayalaxmi Sawmill	9886708127
25	Thirthahalli	Seebinakere, Thirthahalli Taluk	Rahamaniya & Co; Wood Works ,	08181-228465
26	Thirthahalli	Kuruvalli Post, Thirthahalli	Shankar Wood Industries,	08181-228209
27	Thirthahalli	A.P. Road, Thirthahalli	Usman Shariff Wood Industries.	9731159649

NCC: COLONEL

20 KAR BN NCC, SHIMOGA ANOS TELEPHONE NUMBERS

Sl No.	Name of the ANO & Institution	Mobile Numbers	Land Line Numbers	Institutions
SD/SW				
1	C/T Nuthana H D LB College, Sagar	8971561001	08183-227662	08183-226137
2	C/T Shashiraj Sahyadri College, Shimoga	9916859100	- NO-	08182-228262
3	Major K Anjannappa Tung College, Thirthahalli	9448438184	- NO-	9845814195 08181-228262
4	Capt Rama Reddy Govt PU College Channagiri	9448921854	- NO-	9448627999
5	Capt KM Mohanesh Sahyadri Sc College, Shimoga	9481093811	- NO-	9886099060
6	Lt Dr Hanumanthappa Govt First Grade College, Shikaripura	9916749558	- NO-	9449135153 08187-222217
7	Lt Chandra Shekar VISSJ Polytechnic, Bhadravathi	8050139876	- NO-	9880459198
8	Lt R Suresh, DVS College, Shimoga	9449942007	- NO-	9880544044
9	Lt Dr KL Arvind Achary Tulsi N College, Shimoga	9448255528	- NO-	9972585575
10	Lt Dr GS Sakree Naik, Sir MV Arts & Commerce College, Bhadravathi	9448018182 9060550923	- NO-	9845430374 08282-271826
11	Lt Rajashekar GFGC,	9611422122		08282- 269505

Sl No.	Name of the ANO & Institution	Mobile Numbers	Land Line Numbers	Institutions
	BHADRAVATHI			
12	C/T Hemalatha Indira Gandhi GFG College for Women, Sagar	7411141469		
	JD /JW			
1	Basavarajappa Paper Town High School, Bhadravatghi	9741163621 9686190563	- NO-	9845268609
2	C/O TP Prabhakara National PU College, Konandur	9980396223	- NO-	0818276623
3	F/O Hubert Mirenda. Sacred Heart High School ,Shimoga	9448814494	- NO-	08182-881246
4	S/O P Basavaraj JNV, Gajanoor Shimoga	8746927017 9483115270	- NO-	9880972650 08182-234250
5	F/O G K Balaraj Govt P U Collage,Shimoga	9986191352	- NO-	08182-227710
6	F/O M Ravi Kumar, National P U Collage Shimoga	9448848855	- NO-	9740559385
7	T/O Wasiaq Ahemed Pasha DVS High School,Shimoga	9480467724	- NO-	08182-223409
8	F/O T Gopalakrishna Govt PU College, Malur Thithahalli	9449934890	- NO-	08181-235541
9	T/O Nagaraj Govt Pu College, hannagiri	9901771671 9060799742	- NO-	9886907418
10	S/O KR Chandrappa Adi Chunchanagiri High School, Shimolga	9449497663	- NO-	9448053886 08182-257673
11	T/O Danesh Govt PU College, hirthahallai	9449221296	- NO-	08181-220044
12	C/T Yogendra Sharada Villas High School, Mattur, Shimoga	9945739700	- NO-	
13	F/O Dr. Puttamma V JNV, Gajanur, Shimoga	9901884464	- NO-	9880972650 08182-234250
14	T/O Tara Devi KGPU College, Shimoga	9886000793	- NO-	08182-227100

NSS: (DDPU)
100 MEMBERS PER COLLEGE

Sl No	Taluk	NSS PU College Name (2012-13)	Principal Name	Mobil No	Land Phone
1	Shivamogga	National PU College Shivamogga	H N Manjunatha Jois	9449132703	08182-223307
2		Kasturba PU College, Shivamogga	A Venugopal	9901040466	08182-278326
3		Govt. PU College, Shivamogga	Srinivasamurthy D K	9481669796	08182-270357
4		Govt., PU College , Kumsi	Shashidhar G R	9448681687	08182-262555
5		Govt. PU College Ayunur	Jayaram B K	8762242486	08182-235647
6	Thirthahalli	Govt., PU College Thirthahalli	Shalini M S	9448043427	08181-228428
7		Tunga PU College Thirthahalli	Jayaprakash K G	9449795050	08181-220262
8		National PU College Konandur	K S Amarendra Jois	9449205087	08181-276623
9	Hosanagara	Govt. PU College Hosanagara	Myageri	9449265893	08185-221524
10		Govt. PU College Amrutha	Udaya Kumar A	9449810904	08185-251121
11	Sagara	Govt. PU College Sagara	Chidambara K	9449685980	08183-226582
12		Govt. Girls PU College, Sagra	T.Gangaddharappa	9449553369	08183-220234
13		S. Rupasree PU College, Kedallasara	Thimmappa M M	9480220270	08183-265454
14		Govt. PU College Anandpurm	Umeshappa H	9448811284	08183-262506
15	Bhadravathi	M.P.M. PU College, Bhadravathi	Lakshmikantha G M	9964634384	08282-271540
16		Govt. Sanchihonnamma PU College Bhadravathi	Megharaj K M	9019595381	08282-267053
17		Govt. Girls PU College, Bhadravathi	H K Mahemmed Imtiyaz	9482774147	08282-273537
18		Govt. S.J. PU College, Bhadravathi	Rajanna	9844812975	08282-271819
19		Govt., PU College , Anaveri	Gwavish B S	9901639432	08282-244572
20		Govt. PU College , Holehonnur	Basavarajappa K	9880607066	08282-235463
21	Shikaripura	Govt. Independent PU College Shikaripura	Virupakshappa D	9886969765	-
22		Govt., Girls PU College, Shikaripura	Shekarappa G	9844789492	08187-224474
23		Govt. PU College Shikaripura	M.Nagarajappa M	9449078499	08187-222645
24		Govt. PU College Togarsi	Hoby Naika S	9449882206	-
25		Govt., PU College , Hittala	Shamanna K	9480318276	08187-243275
26	Soraba	Govt., PU College Soraba	Shivanandappa K R	9480415168	08184-272382
27		Siddavrushabendra PU College, Jade	Kummur G M	9448952312	08184-268602
28		Govt., PU College Anvatti	G Manohara	9611321487	08184-267117

CHAPTER-6

MITIGATION PLAN

Mitigation, Definition

Mitigation and Prevention are used as synonyms. Some prefer to drop the term Mitigation and use only Prevention. The term Mitigation can be comprised in the term Prevention. Mitigation means to reduce the severity of the human and material damage caused by the disaster. Prevention is to ensure that human action or natural phenomena do not result in disaster or emergency. Primary prevention is to reduce -avert- avoid the risk of the event occurring, by getting rid of the hazard or vulnerability, e.g. to avoid overcrowding, deforestation and to provide services. Healthier people in a healthy environment will be less vulnerable to most hazards. E.g. immunizing people against smallpox made them less vulnerable to the virus, and slowly eradicated the disease. Secondary prevention means to recognize promptly the event and to reduce its effects, e.g. by staying alert to possible displacements of population; by being ready to provide immunization, food, clean water, sanitation and health care to refugees. Healthier people in a healthy environment will also be more capable to overcome the emergency.

Principal Objectives of Mitigation

- Save lives
- Reduce economic disruption
- Decrease vulnerability/increase capacity RISK REDUCTION
- Decrease chance/level of conflict

Mitigative measures to be taken in case of natural Disaster.

- Slowing down the spreading of mine, industrial and forest fires and their mitigation
- Damage due to earthquake, landslides and other mass movements can be minimized through early warning systems and timely evacuation of population. Drainage, sub surface drainage, embankments, strengthening of slopes, raising vegetation on sloppy surfaces, constructing of culverts etc. helps mitigating the damage.
- In case of earth quakes emergency evacuation, scratch resume and relief from important action plan in disaster management
- Programs of disaster management/ mitigation encompass a wide range of options ranging from issuance flood warnings to reduction of flooding to actual evacuation.

Synopsis of Mitigation plan: -

Phase	Activities	Officials involved
Pre Disaster Plan	Identification of disaster prone major accident hazard units and industries involving hazardous processes periodically and update.	Dept. of Factories
	Hazard, risk and vulnerability (HRV) analysis has to be identified and reviewed periodically.	Management, CDC
	All the identified major accident hazard units and industries involving hazardous process are required to develop a comprehensive on site emergency plan co-ordinating the resources available at the site against the HRV	Management, Dept. of Factories and Boilers
	Mock rehearsals shall be schemed to assess the strength and weaknesses in the mitigation procedure.	Management Dept., District Crisis Group
	Hording showing the Do's and don'ts in the event of emergency shall be displayed at all strategic location around the plant to sensitize the public around the plant.	Management of Industries
	Periodical training on first aid fire fighting and casualty handling during emergencies shall be programmed.	Management Police, Fire Services, Dist. Commandant
	Identification of resources against the HRV	Management
	The vulnerability area shall be periodically checked for its integrity and safe working conditions.	Management, Directorate Fire Services, Factories
	Preparation of Resource directory showing the resources available in and around the industry.	Directorate of Factories, DCG
	Community awareness programmed shall be designed by distributing pamphlets, classes highlighting about the hazards and do's and don'ts in the event of emergency.	Management Police, Fire Services, Dist. Commandant

Phase	Activities	Officials involved
	Duties and responsibilities of 1 st responders' viz., Fire Services, Police, Health, Home guards, shall be clearly defined and shall be informed.	CDC, Police, Fire, Revenue
	Periodical evaluation of resources at the control room	CDC, Fire Services
	Identification of shelters, temporary shelter camps with accessibility and infrastructures	Revenue department
	Identification of routes, rallying posts, parking places	Police, Fire Services
	Listing and documenting the home guards required for law order, assistance to the police assistance at the temporary shelters	Dist. Commandant, Home guards
	Preparation of list of experts to seek their opinion during emergency mitigation	CDC, Dept. of Factories
	Ensuring proper functioning of warning and communication system. Updating of telephone numbers at the control room.	CDC, Revenue
	Identification and listing of hospital - infrastructure facilities	DHO
	Identification and listing of blood banks, medical shops, stockiest	DHO
	Identification and listing of vehicles required for immediate requisition	RTO
	Identification of listing of earth moving equipment, vehicles for transportation and documenting	RTO
	Identifying resources for temporary electricity and lighting arrangement, identification and listing of personnel and support system for immediate action	KPTCL
	Identifying NGOs for deployment to work at the rehabilitation centers and to derive resources	Revenue, CDC
	Identification of any pollution effects due from the disasters and to advice CDC on the next course of action	KSPCB
	Identification and supply of availability of potable water sources, water purification tablets, construction	PHE, Commissioner

Phase	Activities	Officials involved
	of temporary shelters and maintenance	
	Identification of safe shelters for animals	Veterinary Dept.

Administrative preparedness

All the 7 Tahsildars have been inspired and instructed to form groups of Village Accountants, Revenue Inspectors, Deputy Tahsildars, wherever nodal officers are available and to identify the vulnerable areas and also to plan for the local publicity at the time of such incidents. The taluk level officers like Executive Officer, Asst. Executive Engineers, Block Educational Officers and all other departments are also asked to be in our team to provide necessary help to provide shelter, food, repairs of roads, culverts, etc., wherever required. Karnataka Power Transmission Corporation Ltd., MESCOM, Medical Staff and Municipality or Panchayath Staff has been asked to extend their services, within their limits. Almost all the social workers, NGOs and the likeminded people have been asked to provide their services in times of need.

All the officers were kept in touch with the DDM Heads, both in taluk and district level. Police, Home guards were kept in red alert especially in project areas and on river banks. And also to identify the places where rehabilitation camps are to be opened, facilities to provide drinking water, food providing facility and areas available resources are to be identified. Medical facilities, NGO assistance, maintenance of cattle, open space for all their activities are also to be kept in mind in identifying the mitigation plan. The slum areas, the people living in low line areas, backwater level areas were kept in mind, and high alert and wide publicity arrangements were also made.

1) Drought Mitigation Plan:

Drought is a normal, recurrent feature of climate and characterized in terms of its spatial extension, intensity and duration. Conditions of drought appear when rainfall is deficient in relation to the statistical multi-year average for a region, over an extended period of a season or a year, or even more. Drought is a temporary aberration unlike aridity, which is a permanent feature of climate. Drought produces wide-ranging

impacts that span across many sectors of the economy and are felt far beyond the area experiencing physical drought. Direct or primary impacts of droughts are usually associated with reduced agricultural production; depleted water levels; higher livestock mortality rates and damage to wildlife and fish habitats. When direct impacts have multiplier effect through the economy and society, they are referred to as indirect impacts in terms of reduced income for farmers and agri-business, increased prices for food and timber, unemployment, reduced purchasing capacity and demand for consumption, default on agricultural loans, and reduction in agricultural employment leading to migration etc.

Drought Mitigation

Mitigation measures are initiatives undertaken to reduce the incidence or minimize impacts of drought. Besides drought proofing, these measures help in adapting to climate change, restoring ecological balance and bringing development benefits to the people. However, drought mitigation programmes are not to be construed stand-alone interventions that are to be implemented only in the wake of a drought; but must form part of developmental planning in the domain of soil conservation, watershed development and forestry. As such, drought mitigation measures are to be mainstreamed in regular development programmes of Central and State Governments.

Government's policy towards drought management has changed considerably over the years and now rests upon early warning & preparedness, crisis management response, medium and long-term drought mitigation measures with greater application of state-of-the-art technology and scientific tools. A number of Central Government Schemes/ Programmes have evolved over time to address the need for medium and long-term drought mitigation requirements. Notable among them are Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS), Integrated Watershed Management Programme (IWMP), subsuming erstwhile Drought Prone Area Programme (DPAP), National Rural Drinking Water Programme (NRDWP), Swarnajayanti Grameen Swarozgar Yojana (SGSY), Rashtriya Krishi Vikas Yojna (RKVY), Fodder & Feed Development Scheme etc. Besides, various area development programmes by State Governments either through their own resources or with Government of India's support like Backward Region Grant Fund (BRGF), Rural Infrastructure Development Fund (RIDF) are contributing significantly to enhance drought resilience. Central and State Governments continue to consider further

possibilities of reorienting/synergizing regular development programs for achieving a robust drought resilient regime.

Structural Mitigation Measures for Drought

- a) Artificial recharging of ground water, watershed programmes in privately owned small/marginal farms, laying of pipes/channels for exclusive transportation of water to dry areas;
- b) Programme for reconstruction and preservation of traditional water harvesting structures, construction of canals for transportation of water from surplus to no surplus areas, establishment of cost-effective drip /sprinkle irrigation practices etc.
- c) Construction of watershed structures at the right place where water recharge can be enhanced/will be used for life saving irrigation at critical stages of crop growth and during drought situations.
- d) Construction of “Community Ponds” through Panchayati Raj Institutions (PRI) and maintenance by levying user charges.
- e) Augmentation of agro-based food processing industries in rural areas for sustenance of employment,
- f) Establishing chain of cold storages to minimise post-harvest losses along with adaptation of appropriate post-harvest management practices like pre cooling, cold storages and refrigerated transport. Pre-harvest losses due to diseases and pests can also be minimized through better management practices;
- g) Construction of shelters for cattle and development of infrastructure for storage and transportation of dry and green fodder etc.;
- h) Ensuring provision of medicines and critical health care in the risk prone areas during drought for humans and animals;
- i) Ensuring efficient functioning of the PDS in drought affected areas;
- j) Provision of adequate infrastructure for dissemination of weather based advisories to the farming community on real-time basis in regional languages through extension machineries;
- k) Providing credit promptly in the drought affected areas and extending marketing and price support to farmers;
- l) Insurance products need to be developed for different agro-climatic zones providing coverage against drought. The Central/State Governments need to promote, agricultural insurance programmes and ensure that farmers are informed about the availability of insurance products and educate them about the need for managing their yield and income risks through insurance coverage;
- m) Identifying, procuring and keeping in readiness drought proofing materials in required quantities before the onset of monsoon season such as :- Seed & fodder Plan
- n) (including alternative varieties, mini kits etc. keeping in view the impending drought);

Non-Structural Mitigation Measures for Drought:

- For creating an enabling environment for the mitigation measures existing laws including the following (illustrative) would need to be considered/reviewed/updated:-
- Revisiting Mahatma Gandhi National Rural Employment Guarantee Act/Operational Guidelines of MGNREGS to include/strengthen drought mitigation measures;
- Updating of State Scarcity Relief Manuals which replaced the erstwhile famine codes on the lines of Manual for Drought Management at National level;
- Establishing a definite procedure and fixing of time frame for attending to drought relief measures;
- Establishing an appropriate water regulatory regime in consultation with the
- States;
- Empowerment of Panchayats, Municipalities, Local bodies and inclusion of drought mitigation measures as part of their role in Eleventh and Twelfth Schedules of Constitution of India.

2) Mitigation measures for Road Accidents

Road Accident is a major killer and takes place without warning. Rate on road accidents, are ported indicate that 70% of road accidents, areas from drivers negligence. Some other reasons are poor road condition, heavy traffic, poor vehicle maintenance possible impacts of accident of individuals are loss of life, Trauma Care & burns.

1. The provisions of Motor Vehicles Act and other related legislation's and regulations are strictly enforced.
2. Adequate Highway and traffic Aid post will be created.
3. Trauma Care Centers shall be established at every 100 kms. On the National and State Highway.
4. Speed monitoring equipments and computerization of movement of vehicles with adequate checkpoints on the National Highway will be introduced.
5. Fixation of timings to the passenger vehicles to avoid and traffic fan. Identify and designate routes and fixing the time for transportation of hazardous chemicals and other materials.
6. Prohibit the parking of vehicles on National Highway and State Highway.
7. Excavation on roads will be protected well particularly in the night with barricades fluorescent signs and red lights.
8. PWD and National Highway department should concentrate on removal of bottlenecks on National and State Highway.

9. Efforts will be made to provide road dividers on National and State Highway on priority basis.
10. Arrangements will be made adequate embankments/reflector/proper signs on curves.
11. Arrangements will be made information signs boards giving the local of the nearest village Police Station, Hospital, Ghat Traffic Position, Petrol pump, etc. at every traffic aid post.
12. All two-wheeler drivers including pillion riders must always wear the right kind of helmet.
13. Overtaking in vehicles is regulated.
14. Frequently accidents occurring spots will be identified and precautionary measures will be taken.
15. Lanes will be marked for pedestrians/Cyclists.

Since accidents general result in injuries, burns or loss of life providing emergency medical facilities is of utmost importance. Relief teams comprising medical personnel and transport authorities have to be rushed to the spot provide first aid and shifting the injured to the nearest hospital. Upon arrival at the accident spot the team should immediately provide first aid to the victims and look for persons trapped inside the vehicle. Assistance of the local police should be sought to disperse any crowds that may hinder effective relief measures. If the magnitude of the accident is high help of local NGOs and volunteers may be taken.

In case of major building collapse the major role is to be played by the Fire Department with the assistance of the Police and Health Authorities. Shifting victims to the nearby hospital should be done after providing necessary first aid. Necessary equipment to remove debris should be kept readily available to save victims who may be buried inside. Volunteers and NGOs must be trained properly to handle such so that emergency relief is carried on smoothly. Fire disasters occur mainly due to carelessness or mischief by miscreants. Preventive measures such as avoiding storage of large quantities of combustible materials in one place, firefighting equipment in petrol filling stations, textile, plastic, paper and wood industries should be insisted upon during inspection by the concerned authorities. Personnel of the fire brigade are well equipped to handle any fire hazards and regular drills and training sessions are held.

Earthquake Mitigation Plan:

The recent devastation in Gujarat has been an eye-opener as regards the magnitude of loss to human life and property. Hence, the District Administration has geared up the various Departments to effectively meet the challenge of an earthquake.

Since, earthquakes strike without forewarning and generally any measurement on the Rector scale is usually a post operative measure, prevention in respect of earthquakes is imperative.

The main hurdles as regards planning are as follows:

- Structural planning of individual buildings.
- Communication lines.

- Electricity and water supply.
- Health hazards.
- Loss of life, property and employment.

Preventive steps are required in the following areas:

- Public structures.
- Dams.
- Roads.
- Maintenance of health and prevention of epidemic diseases.

Since, earthquakes are natural calamities dissemination of proper information, awareness, stocking of proper machinery and equipment are the prerequisites to tackle such a situation.

EARTHQUAKE MITIGATION		
Before the Disaster	During the Disaster	After the Disaster
<ul style="list-style-type: none"> • Check for hazards in the home • Identify safe places in each room • Locate safe places outdoors • Ensure all family members know how to respond after an earthquake • Teach children when and how to call Emergency • Have disaster supplies on • Develop an emergency communications plan in case of separation during the earthquake 	<ul style="list-style-type: none"> • If indoors: Take cover under a piece of heavy furniture or against an inside wall and stay inside • If outdoors: Move into the open, away from buildings, street lights, and utility wires and remain there until shaking stops • If in a moving vehicle: Stop quickly, stay in vehicle, move to a clear area away from buildings, trees, overpasses, or utility wires 	<ul style="list-style-type: none"> • Be prepared for after shocks • Help injured or trapped persons and give first aid where appropriate • Listen to a battery operated radio for emergency information • Stay out of damaged buildings and return home only when authorities say it is safe

4) Mitigation Plan for the Forest fire

In case of fire incidence, after receiving information, reaching the spot early is essential to tackling fire effectively. Hence, at strategic points jeeps equipped with fire fighting equipments and personnel will be available who will be patrolling along fixed routes. Upon receiving information from Fire Protection Camps/detection points, they will rush to the spot and help tackle the fire. Continuous patrolling in the area also helps in early detection of fire and it also acts as deterrent against people's movement in forest areas. Past experience shows that this method has yielded good results.

1. Wherever village forest committees (VFC) have been constituted under the JFPM program, the concerned VFC shall be entrusted with the task of controlling fire in the forest area under its control. Provision shall be made to pay incentives to the VFCs for fire control.
2. In worse situations help and assistance of Fire department will also be sought.
3. Along with the conventional equipments, modern fire fighting equipments and gear need to be provided to the department along with training to use them.

Following is a plan for managing fire incidences in the forests of the district as Preventive measures.

1) Fire Detection and Communication.

Early detection of fire and communicating it to camps is key to minimizing the fire damage. Hence, for detection, elevated points are selected from where the fire can be detected easily. Few such elevated places are already there with watchtowers. In the above areas staff will be deployed round the clock to detect the fire. The staff will be provided with Walkie-Talkie/mobile to communicate with camps, patrolling squads & control room (DCF office). At these detection points three watchers will be deployed round the clock on 8 hours rotation for four months i.e. from February to May.

2) Cutting of Fire lines

Fire lines of 3 Mtrs width need to be cut along the D line i.e., Division Forest and Sanctuary boundary, especially along the boundary abetting villages. This will be in addition to 6 Mtrs.

D line cut for marking the Forest/Sanctuary boundary. This is essential due to the reason that in most of the cases fire enters from these points.

Similarly, fire lines will be cut along Forest/Sanctuary roads and paths and in Tourism routes. There are good wooded areas abetting forest boundary in the divisions which also need to be tackled. These areas, if not protected, will act as entry points of fire and eventually affect the forests and wildlife of the area. Thus, it is proposed to cut fire lines along these areas also.

3) Fire Protection Camps:

Fire Protection Camps consisting of 5 watchers including permanent staff in each camp will be established at strategic points for extinguishing fire during the fire season. These camps will act as action oriented base camps and will swing in to action upon fire incident. As the personnel deployed have to work for 24 hrs, they have to be provided with food and shelter in the form of permanent camps/tents. Each camp will have to be provided with Drums-200 lit(for storing water), Buckets, mugs, cans -25 and 5 lit, spades, sickles, cooking vessels, mats, torch, caps, and solar hand held torches etc.

4) Fire Protection Mobile Squads:

In case of fire incident, after receiving information, reaching the spot early is essential to tackling fire effectively. Hence, at strategic points jeeps equipped with fire fighting equipments and personnel will be stationed who will be patrolling along fixed routes. Upon receiving information from Fire Protection Camps, they will rush to the spot and help tackle the fire. Continuous patrolling in the area also helps in early detection of fire and it also acts as deterrent against people movement in forest areas. Past experience shows that this method has yielded good results.

5) Fire Meetings:

There are 1597 no. of villages on the fringes as well as inside the forests of the district and it is essential to involve the villagers in fire fighting. In case of fire, villagers come in handy to tackle the fire effectively. For this, fire meetings need to be conducted in each village in which the villagers are sensitized about ill effects of fire and are requested to help department in tackling fire problem in the event of its occurrence. For creating awareness

about consequences of forest fire, its control and preventive measures in village's , pamphlets, hand bills, posters and calendars etc. will be printed and distributed during meetings.

6) Monitoring and Reporting:

The preventive measures and preparedness need to be monitored well for effective implementation of the plan. This will be accomplished through frequent visits by senior officers to the camps, detection points and reviewing the position. The fire lines, D Lines and view lines will have to be checked hundred present so that no weak links are left.

7) Communication network:

Speedy and efficient communication network plays vital role in detection and control of fire. For the purpose of effective communication, a **CONTROL ROOM** will be established which shall work round the clock. Likewise the range offices have been equipped with static sets to receive and communicate with camps. The control room shall monitor fire incidents on day to day basis and maintain the record.

Following shall be the responsibilities fixed to different level of officers.

S. No.	Posts	Responsibility
i	Chief Conservator of Forests	1. Overall responsibility for sanction of Fire Protection Plan 2. Allotment of funds as per sanction of Fire Protection Plan and availability of grants 3. Surprise inspection of fire protection works

ii	Deputy Conservator of Forest	<ol style="list-style-type: none"> 1. Over all control, management over the fire protection works in the division and inspection of fire protection works. 2. Sanction of financial requirements as per sanctioned scheme range wise and monitor the progress of works 3. Monitor the fire incidences, sanction of fire protection camps, hiring of vehicles, sanction for fire watchers as per the availability of funds.
iii	Asst. Conservator of Forests	<ol style="list-style-type: none"> 1. Select sites for fire protection camps 2. Tour all over the area to see whether works are carried out as per sanctioned scheme. Issuing instructions and guide lines to field staff at site, monitor the progress at range level and ensure cutting and burning of fire lines in time. 3. Assist to Dy.C.F. in checking the assessment of losses caused by fire, and tracing the offenders. 4. Supervision and keeping dialogues with E.D.C.s/ Gram panchayats to motivate them for fire protection work, arrange meeting with them regularly.

iv	Range Forest Officer.	<ol style="list-style-type: none"> 1. All R.F.O.s in charge of ranges will be responsible for prevention and control of fires in their range. Timely inspection and reporting, completion of work regarding cutting and burring of fire lines in time and supervise burning, establishment of fire protection camps, control rooms, and submitting reports to Dy.C.F. regarding fire incidences, demand for funds, disbursement of wages to labourers in time, analysis of data on intelligence, booking fire offenders, initiate strict legal action against them and assessment of losses caused by fire are the works to be attended by R.F.O. 2. Control and check on fire protection camps, detection points and squads as per norms regularly. 3. Submission of reports on fire incidences to higher ups daily on wireless as well as in writing. 4. Supervision and keeping dialogues with E.D.C.s/ villagers/ Gram panchayats etc. to motivate them for fire protection work, arrange meeting with them regularly in their jurisdiction.
v	Forester/ Deputy Range Forest Officer	<ol style="list-style-type: none"> 1. Inspection of works of cutting and burning of fire lines. 2. Maintenance and cleaning of fire lines regularly. Supervision of Working of E.D.C. in his charge. 3. Arrangement for meeting with villagers, for getting assistance in fire protection work, supply of labourers, creation of awareness, motivation etc. 4. Collection of intelligence, enquiry of forest offences along with fire offences. Assessment of loss caused by fire.

vi	Forest Guards	<ol style="list-style-type: none"> 1. Cutting and burning of fire lines as per sanction of fire protection scheme. 2. Arrangement of labours, motivation of villagers for fire Protection works in time. 3. Collection of intelligence, regarding fire offences, arresting of offenders, 4. Control over fire protection camps in his charge and act as a leader of fire protection camps and maintenance of camp records.
vii	Driver	<ol style="list-style-type: none"> 1. Up keep of vehicles along with fuel and lubricant to drive for fire protection as soon as message is received. 2. Up keep the vehicle wireless set, act as operator for communication.
viii	Fire watchers	To carry out the instructions issued by forest guard or foresters with regard to detection, patrolling and extinguishing fire. They shall also be responsible for keeping constant vigil and keep the fire lines clean of dry leaves etc.

“Fire camp register.” Shall be maintained by Range Forest Officer in every fire protection.

Following information and day today works shall be entered in the register regularly.

- 1) Name of camp, date of opening of camp, names of the fire Watchers appointed and their day to day attendance.
- 2) Entry of details of equipments, dead stock material issued for smooth functioning of camps i.e. walkie talkie sets, arms, bicycles, motor cycles, torches, solar lamps, tents, and first aid kits etc.
- 3) Day to day details of works attended by Forest Guard and fire watchers at the camp, as detailed below:
 - i) Daily patrolling details and intelligence collection.

- ii) The time when fire is observed and reported, time when work is started and time when fire is completely extinguished. Name of persons who assisted to extinguish the fire and their wages to be paid
- iii) Nature and extent of fire, and estimations of loss due to fire in monetary terms
- iv) Tracing of fire offender or clues to find out culprits in details.
- v) Inspection by higher authorities, instructions regarding tracing out Offenders, Collection of intelligence, patrolling, cleaning, and maintenance of fire lines regularly.
- vi) Follow-up of the instructions issued.

WILDFIRE MITIGATION		
Before the Disaster	During the Disaster	After the Disaster
<ul style="list-style-type: none"> • Learn and teach safe fire practices • build fires away from nearby trees or bushes, always have a way to extinguish a fire, never leave a fire unattended Obtain local building codes and weed abatement ordinances for buildings near wooded areas • Use fire-resistant materials when building, renovating, or retrofitting structures • Create a safety zone to separate home from combustible plants and vegetables • Install electrical lines underground, if possible • Prune all branches around residence to a height of 8-10 feet • Keep trees adjacent to buildings free of dead or dying wood and moss • Remove all dead limbs, needles, and debris from rain gutters • Store combustible/flammable materials in approved safety containers and keep away from home • Keep chimney clean • Avoid open burning, especially during dry season Install smoke detectors on 	<p>If trapped in a wildfire, you CANNOT outrun it:</p> <ul style="list-style-type: none"> • Crouch in a pond or river and cover head and upper body with wet clothing • If a body of water is unavailable, look for shelter in a cleared area or among a bed of rocks and lie flat and cover body with wet clothing or soil. • Listen to radio for emergency information • Remove combustible items (outdoor furniture, umbrellas, tarp coverings, and firewood) from around the home • Take down flammable drapes and curtains and close all Venetian blinds or non combustible window coverings • Close all doors and windows inside home to prevent draft • Close gas valves and turn off pilot light 	<ul style="list-style-type: none"> • Be cautious when reentering a burned wildland area - hot spots can flare up without warning Check the roof immediately and extinguish any sparks or embers and the attic for hidden burning sparks • Re-check for smoke and sparks throughout the home for several hours afterward • Breathe the air close to the ground through a wet cloth to avoid scorching lungs or

<p>every level of your home</p> <ul style="list-style-type: none"> • Make evacuation plans from home and neighborhood and have back up plans • Avoid using wooden shakes and shingles for roofing • Use only thick, tempered safety glass in large windows and doors • Have disaster supplies on hand (flashlights, extra batteries, portable radios, first aid kits, emergency food and water, nonelectric can opener, essential medicines, cash and credit cards, and sturdy shoes) • Develop an emergency communication plan in case of separation • Ask an out-of-state relative to serve as the "family contact" 	<ul style="list-style-type: none"> • Turn on a light in each room for visibility in heavy smoke • Place valuables that will not be damaged by water, in a pool or pond • If hoses and adequate water are available, leave sprinklers on roofs and anything that might be damaged by fire <p>Be ready to evacuate all family members and pets when fire nears or when instructed to do so by local officials.</p>	
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5. Mitigation in case of Floods:

All the Tahsildars will be instructed to form groups of Deputy Tahsildars, Revenue Inspectors, Village Accountants, , wherever nodal officers are available and to identify the vulnerable areas and also to plan for the local publicity at the time of such incidents. The taluk level officers like Executive Officer, Asst. Ex-ecutive Engineers, Block Educational Officers and all other departments are also asked to be in our team to provide necessary help to provide shelter, food, repairs of roads, culverts, etc., wherever required. Karnataka Electricity Board [MESCOM] Staff, Medical Staff and Municipality or Panchayath Staff will be asked to extend their services, within their limits. Almost all the social workers, NGOs and the likeminded people will be asked to provide their services in times of need. All the officers will be in constant touch with the DDMA Heads, at all levels. Police, Fire force and Home guards will be kept on high alert especially in project areas and on river banks.

Police Officers, Home guards and Revenue Department officials will be alerted to identify the vulnerable areas along the Thunga, Bhadra, Sharavathi, Kumudvathi and Varada river banks, flood hit areas especially in Thirahalli, Hosanagar, Sagar and Shimoga taluks. And also to identify the places where rehabilitation camps are to be opened and facilities to provide drinking water, food, clothing and and requird medical facilities. Medical facilities, NGO assistance, maintenance of cattle, open space for all their activities will also to be kept in mind in preparing the mitigation plan. The slum areas, the people living in low lying areas,

backwater level areas will also be kept in mind, and high alert and wide publicity arrangements will also be made for the benefit of affected people.

Floods caused extensive damage to human, animal and plant life. Flood result in rendering many people homeless leading to devastation and total chaos to lack of communication and means of transportation. Shivamogga district is vulnerable to floods due to breach of dams. There is a major dam of Upper **Thunga Project and Bhadra River Project** situated in the district. These dam sites are thoroughly studied by the scientist and Engineers and ensured the safety of the construction at the time of foundation. Still precautionary measures have to be taken to mitigate the disaster.

FLOOD MITIGATION		
Before the Disaster	During the Disaster	After the Disaster
<ul style="list-style-type: none"> • Learn warning signs and community alert systems • Stockpile emergency building materials • Install check valves in sewer traps to prevent flood waters from backing up in sewer drains • Plan and practice an evacuation route • Have disaster supplies on hand • Develop an emergency communication plan in case of separation 	<p>During a flood watch:</p> <p>If indoors:</p> <ul style="list-style-type: none"> • Turn on battery operated radio to get latest emergency information • Get pre-assembled emergency supplies • If told to leave, do so immediately. <p>If outdoors:</p> <ul style="list-style-type: none"> • Climb to high ground and stay there • Avoid walking through any floodwaters. • If in a car, turn around and go another way; if your car stalls, abandon it immediately and climb to higher ground. 	<ul style="list-style-type: none"> • Don't return home until authorities express it is safe to do so • Help neighbors whom may need assistance • Use extreme caution when entering buildings • Inspect foundations for cracks or other damage and examine walls, floors, doors, and windows to make sure that the building is not in danger of collapsing • Watch out for animals, especially poisonous snakes, that may have come into your home with flood waters
<ul style="list-style-type: none"> • Ask an out-of-state relative to serve as the "family contact" • Teach family members how and when to turn off the gas, electricity, and water and teach children how and when to call 9-1-1 • Ask your insurance agent about flood insurance 	<p>During an evacuation:</p> <ul style="list-style-type: none"> • If advised to evacuate, do so immediately to avoid flooded roads, being sure to follow recommended evacuation routes and listen to radio for evacuation instructions 	<ul style="list-style-type: none"> • Watch for loose plaster and ceilings that could fall • Take pictures of damage for insurance claims • Look for fire hazards • Throw away all food (including canned) that has come in contact with flood waters • Pump out flooded basements gradually (~ 1/3 amount of water per day) to avoid structural damage

6. Mitigation Plan for Biological Disasters, Epidemic, and Food Poisoning:

LEPTOSPIROSIS:-

Actions Taken:

- 1) Training of Health Staff- Mo/MPW/LT under Leptospira Pilot Project
- 2) Fever Survey has done in the community by field Staff by house
- 3) Prompt Treatment of suspected cases at Health Facility
- 4) Mass Chemoprophylaxis has done.
- 5) IEC has taken for all taluka's where cases were reported.

Action to be taken:

- 1) Distribution of IEC materials should be done in taluka Thirthahalli where more than 90% of cases are reported.
- 2) House to house survey should be done for endemic area (Thirthahalli) by health professions, all suspected fever cases should be checked for leptospirosis by rapid lepto check kit.
- 3) All suspected cases should be immediately referred to nearest Primary Health Centers and severe cases should be referred to tertiary care hospitals
- 4) Chemoprophylaxis activity should be done for pre monsoon activity where maximum numbers of cases are reported.
- 5) Cap Doxycycline should be administered for all fever cases within four hours of fever detected, it will reduce mortality of patients.

KYASANUR FOREST DISEASE –KFD:-

Actions to be taken:

- 1) Advise people not to go to the forest where monkey deaths are reported.
- 2) Person who is forced to visit the forest, should cover body with thick cloth.
- 3) Advise to use pf tick repellent, DPM oil.
- 4) Washing clothes and body with hot water and soap after returning from forest.
- 5) Hot spot spray: Malathion powder is dusted in a 50m radius around dead monkey.
- 6) Vaccination is the key role for program
- 7) The timing of vaccination is linked to transmission cycle, so that people are protected.
- 8) Active and Intensive surveillance by periphery staff to create awareness of vaccination in community.

Administration:

The vaccine is given in two doses apart a month by subcutaneous route and followed by booster dose after 6-9 months.

Action taken:

Month	Action
Aug	Action Plan to be submitted to DHO, DD-VDL, DSO, JD –CMD & MF, PD-IDS
Sept	IEC –Public <ul style="list-style-type: none"> • KFD • Vaccination
Sept-Nov	Vaccination
Dec- May	<ul style="list-style-type: none"> • Surveillance for Monkey • Fever Survey • Collection of Ticks for the diagnosis of KFD
Dec-June	Monthly Review Meetings

DENGUE:-**Actions Taken:**

As no Vaccine available & no specific treatment but only for purely symptomatic & non-salicylate analgesics and non-steroidal anti inflammatory drugs, the measures by which the disease can be controlled taken were :

- Surveillance for early detection of outbreak
- Vector Control
- Adult vector measures
- Anti-larval measures (Source reduction)
- Personal protective measures
- IEC

CHIKUNGUNYA**Actions Taken:**

As no Vaccine available & no specific treatment but only for purely symptomatic & non-salicylate analgesics and non-steroidal anti inflammatory drugs, the measures by which the disease can be controlled taken were

- Surveillance for early detection of outbreak
- Vector Control
- Adult vector measures

- Anti-larval measures (Source reduction)
- Personal protective measures
- IEC

Avian Influenza

I. Steps to be taken in case of suspicion of outbreak of Avian flu.

- **Preliminary and clinical investigations by DIO (Disease Investigation Officer)**

The Clinical investigation; will be performed on all susceptible species, an epidemiological inquiry report sent to (fax or email) to the Director of Animal Husbandry. If suspected for avian flu matter is reported to the District collector and others.

- **Collection of samples-and dispatch for laboratory tests at HSADL, Bhopal**

Pathological samples are sent immediately to High Security Animal Disease Laboratory Bhopal for testing.

- **Restrictions to be enforced at the site and the alert zone pending receipt of test reports.**

The entire suspected farm shall have to be cordoned off and necessary restrictions be immediately brought into effect in the alert zone.

- **Naming a veterinary officer as the designated officer**

A fairly senior and knowledgeable veterinary officer of department serving in the area will be nominated as designated officer who shall be responsible for carrying out all required steps as per the action plan.

II. Action plan in case of outbreak of HPAI's is confirmed

- **Declaration of infected and surveillance areas:**

In case laboratory tests confirm the occurrence of highly pathogenic avian influenza (HPAI) the matter shall be reported at once to the Director of Animal Husbandry and Principal Secretary, AH&VS. Bangalore.

An area of radius 3 kms around the infected site shall clearly be identified with names of all villages and habitations within that area to be notified as **Infected area**. The radius of 3 to 10 kms around the infected sites should be notified as **Surveillance area**.

- **Notification to health authorities:**

In view of the threat of human infection from particular strains of HPAI, public health authorities are to be immediately notified to be vigilant against infection appearing in man.

- **Absolute ban on movement of poultry or its products:**

Movement of poultry or its products shall be completely banned from and to the infected area.

- **Closure of poultry and egg markets and shops:**

All poultry and egg markets / shops within the radius of 10kms from the infected sites shall be immediately got closed forthwith.

- **Depopulation procedure followed by burning at the farm premises:**

All the poultry products viz, meat, eggs , litter and manure shall be destroyed at once. The dead and culled birds should be burnt in pyre or buried at the premises

- **Imposition of legislative measures**

All the existing legislative powers associated with notification of a disease either vested with municipality or with Deputy Director / Director AH&VS shall be exercised.

- **Media briefing by official spokesperson only.**

In order to avoid spreading panic both in terms of public health and distress selling by poultry farmers, clear and precise briefing of the media should be made regularly by a designated official spokesperson of the state government.

Compensation to be paid for forced culling

A system of adequately compensating the poultry farmers is to be put in place by Government through District collectors immediately after the outbreak of HPAI.

It is submitted that it is in conjuncture with the action plan in respect of Bird flu published by Department of Animal Husbandry & dairying, Govt. of India.

7. MITIGATION PLAN FOR CHEMICAL AND INDUSTRIAL DISASTER:

Name of the MAH Industry	Details of the chemicals	Hazards involved	Mitigation measures
Visvesvaraya iron and steel plant Bhadravati - 577302	<ul style="list-style-type: none"> i Blast Furnace gas ii Coke iii Fuel oils (Light diesel oils) and iv Liquid Oxygen 	<ul style="list-style-type: none"> i. Toxic release of BF gas. ii. Fire and Explosion iii. Major fires iv. Spurting of molten metal/slag. v. Leakage of Cryogenic liquid (liquid oxygen) 	<ul style="list-style-type: none"> i. Audio visual alarm to control level of gas in the gas holder. ii. Automatic operation of motorized valves. iii. Limit switches, pressure relief devices are Provided. iv. Fire hydrants & fire extinguishers are installed. v. Provision of Water seals has been made to gas holder and gas line drip pots.
The Mysore paper mills limited, Bhadravathi – 577 302	<ul style="list-style-type: none"> i. Chlorine ii. Bagasse iii. Bamboo iv. Euca& Other Hardwoods v. Coal vi. Sulphuric Acid 98% vii. Hydrogen Peroxide 50% viii. Caustic Soda lye 48%, ix. Hydrochloric Acid 30% 	<ul style="list-style-type: none"> i. Toxic gas release ii. Fire Hazard 	<p>I. Hypo & CPM-1</p> <ul style="list-style-type: none"> 1)Chlorine detectors. 2)Emergency Equipment room containing the following. <ul style="list-style-type: none"> i) Chlorine Kit. ii)Breathing apparatus. iii) Ammonia Torch. iv) PPE 3)Eye Wash Fountain with showers 4)Siren 5)First Aid Materials 6)Wind Sock <p>II. CPM-2</p> <ul style="list-style-type: none"> (1) Multi point Chlorine Detectors. (2) Breathing Apparatus. (3) Siren. (4) Ammonia Torch. (5) Eye Wash fountain with shower. (6) First Aid Materials. <p>III. General</p> <ul style="list-style-type: none"> 1)Occupational health centre 2)First Aid Attendance 3)Ambulance - 2 4)Other vehicles – Trax –2 , Cars – 7, 5)Fire Tenders – 2 6)Security Jeep – 1
Indian oil corporation ltd LPG bottling unit, KIADB industrial area Machenahalli, Shimoga	1800MT LPG	<ul style="list-style-type: none"> i. BLEVE of storage bullets ii. UVCE iii. Pool fire iv. Plume dispersion 	<ul style="list-style-type: none"> i) Portable fire extinguishers. ii) Personal protective equipment iii) Fire buckets iv) Surface pitted fire hose boxes v) Transport facility vi) Emergency alarm system vii) Location of sprinkler system in main plant viii)First air facility ix) Gas monitoring system x) Safe escape routes xi) Emergency communication system xii) Safety factor adopted while designin of facilities, and fabrication of bullets LPG pipeline etc.,

8. Mitigation Plan for Major Accidents:-

To mitigate the road accidents, the following guidelines should be followed:

1. The provisions of Motor Vehicles Act and other related legislations and regulations are to be strictly enforced.
2. Adequate Highway and traffic Aid post will be created.
3. Trauma Care Centers shall be established at every 100 kms. on the State Highway.
4. Speed monitoring equipments and computerization of movement of vehicles with adequate checkpoints on the National Highway will be introduced.
5. Fixation of timings to the passenger vehicles to avoid and traffic fan. Identify and designate routes and fixing the time for transportation of hazardous chemicals and other materials.
6. Prohibition of parking of vehicles on National Highway and State Highway.
7. Excavation on roads will be protected well particularly in the night with barricades fluorescent signs and red lights.
8. PWD and National Highway department should concentrate on removal of bottlenecks on National and State Highway.
9. Efforts should be made to provide road dividers on National and State Highway on priority basis.
10. Arrangements should be made adequate embankments/reflector/proper signs on curves.
11. Arrangements should be made information signs boards giving the local of the nearest village Police Station, Hospital, Ghat Traffic Position, Petrol pump, etc. at every traffic aid post.
12. All two-wheeler drivers including pillion riders must always wear the right kind of helmet.
13. Overtaking in vehicles is regulated.
14. Frequently accidents occurring spots should be identified and precautionary measures will be taken.
15. Lanes should be marked for pedestrians/Cyclists.

Since accidents general result in injuries, burns or loss of life providing emergency medical facilities is of utmost importance. Relief teams comprising medical personnel and transport authorities have to be rushed to the spot to provide first aid and to shift the injured to the nearest hospital.

Upon arrival at the accident spot the team should immediately provide first aid to the victims and look for persons trapped inside the vehicle. Assistance of the local police should be sought to disperse any crowds that may hinder effective relief measures. If the magnitude of the accident is high, help of local NGOs and volunteers may be taken.

In case of major building collapse the major role is to be played by the Fire Department with the assistance of the Police and Health Authorities. Shifting victims to the nearby hospital should be done after providing necessary first aid. Necessary equipment to remove debris should be kept readily available to save victims who may be buried inside. Volunteers and NGOs must be trained properly to handle such so that emergency relief is carried on smoothly.

Fire disasters occur mainly due to carelessness or mischief by miscreants. Preventive measures such as avoiding storage of large quantities of combustible materials in one place, firefighting equipment in petrol filling stations, textile, plastic, paper and wood industries should be insisted upon during inspection by the concerned authorities.

Personnel of the fire brigade are well equipped to handle any fire hazards and regular drills and training sessions are held.

CHAPTER-7

RESPONSE PLAN

The response plan has been prepared with an aim of reducing to a great extent the response time to any disaster. This in turn will minimize the extent of damage and sufferings to human/animal life and infrastructure considerably. The plan enables all those involved in rescue and relief to know exactly their roles, about available resources, structure etc. and with whom they have to co-ordinate.

Inter departmental co-ordination weekly meetings are planned to reduce field level problems and to impart knowledge on standard operating procedures. Local engineers of PWD PRED, irrigation dept. have been asked to be in red alert to assess the damage and to immediately repair/ make alternate arrangements in their area without waiting for procedural aspects. Logistics arrangements for rescue operation has been put in place, including animal care and management of the deceased.

Relief and Rescue Operation

Rescue work will be taken up by the local police, home-guards, fire force along with local villagers and volunteers.

In case severe distress due to natural calamities like high flood or earthquake, emergent relief such as temporary shelter, rice, dal, potato, salt, kerosene, matchboxes, toothpaste soap, milk, clothing, blanket, etc., will be arranged from the identified traders and sources.

- Immediate response acts
- Inform the core committee members to swing into action.
- Summon the fire brigade.
- Inform Road Transport Authorities to stop movement of vehicle.
- Mobilize volunteers, youth, sportsmen, social service workers, Ex-servicemen, Medical personal.
- Make shift arrangements for temporary shelters to displaced persons
- Providing water and food to the affected.

Synopsis of Response Plan: -

Phase	Activities	Officials involved
During disaster	Disseminating information 1st Responders.	CDC
	Keeping the control room active round the clock.	CDC

	Arrangement of vehicle and public address system for information dissemination.	Police
	Distributing of duties to the district level officials, field functionaries on need basis.	CDC
	Asking the people in the vulnerable areas to move	Fire services, Police,
	to the shelters and to move their domesticated animals to shelter places and to co-operate with the volunteers and other officials engaged in similar activities.	Revenue, Veterinary Dept.
	Informing the hospitals to be ready to receive the injured persons for immediate medical aid, and arrangement of special medical need if required.	Health Dept.
	Constituting of mobile health teams to visit shelters.	Health Dept.
	Arrangement and deployment of Fire Services, emergency response vehicles, first aid fire fighting personnel.	Fire services
	Arrangement and deployment vehicles for evacuation of persons.	RTO
	Arrangement and deployment of Home guards for law and order to work in association with Fire services and police.	Commandant Home guards
	Arrangement of specialized equipment for mitigation .	RTO Management
	Arrangement and deployment of Police for maintaining law and order.	Police
	Traffic management and patrolling to the disaster site.	Police
	Provision of security at the shelter.	Police
	Arrangement for evaluation of water and air pollution due to the disaster.	KSPCB
	Management of deceased.	Revenue, Health

Response Plan for different Disasters.

Emergency Response Procedure - Meteorological Disasters

DROUGHT:

Task force for Disaster Management during Drought.

AEE, PWD	AEE, ZP	Tahasildar	Taluk Medical Officer	AEE, MI	Animal Husbandry & Veterinary Services
To generate employment to the needy victims	To provide drinking water to affected areas	To provide food, drinking water and milk	To coordinate with PHCs and provide medical relief and set up medical camps if necessary	To generate employment to the needy victims	To provide fodder and veterinary services for live stock.

Sorab, Shikaripura, and Sagara taluk face drinking water problem in case of rainfall deficit. panchayat and municipalities in the district are advised to repair the bore wells and pipelines which are not in good condition. New bore wells are drilled in such areas under Auxillirated drinking water supply scheme through ZP engineering dept. Awareness should be created in the public not to waste the water and bore wells points to dig the new borewells have been identified . Places to open the ghoshalas in holbi head quarters have been identified. If need be the fodder will be procured from Bellary district. Food grains are stored in the KSFC and FCI gowdons. The list of such gowdons in the district and storage capacity has been worked out already by the district administration. Usually the people from Kustagi, Yalaburga Shivamogga taluk will leave the villages in search of employment at the time of drought. Hence the list of tanks which are to be desalted, the amount required, number of labors to be employed has been prepared. The Grama Panchayats are advised to get the list of the laborers that usually will go in search of employment.

Drought Monitoring

Since the District is prone to frequent droughts, emphasis is laid on monitoring the situation during droughts. Identification of drought-prone villages and taluks has been done and contingent plans have been worked out.

The following steps have been taken on a regular basis by the District Administration through Panchayat Offices to combat the menace of drought:

- Digging of bore wells.
- Providing hand pumps and motor pumps wherever required.
- Repair of existing hand pumps and motor pumps.
- Digging of wells.
- De-silting of wells, tank beds.
- Providing pipelines for supply of water.
- Providing water to problems areas through water tankers and other means.
- Providing water storage facilities at all block levels.

Since water contamination and water borne diseases can cause health hazards precautions are taken to ensure that drinking water is properly purified before consumption. The District Health officials and the ZP Department monitor supply of drinking water and ensure that there is no scope for water contamination.

PROVIDING FOOD AND FODDER DURING DROUGHT

Since drought has a cyclic effect there is a drain on resources such as food, water, employment, etc., as there is inadequate soil moisture there is shortage of food and fodder.

The focus during drought would be on the following vital areas:

- Water conservation.
- Supply of essential commodities.
- Employment generation.
- Early warning systems.
- Health care.
- Water supply to remote areas by tankers etc.
- Emphasis on the poorer classes of society.
- Priority to drinking water over irrigation.
- Training to NGO's Volunteers and youth.

The following Action Plan has been formulated by the District Administration to deal with the situation of drought.

Contingency plan prepared in co-ordination with the Water Supply Department, ZP, TP, Municipal Corporations, Irrigation Department and Health Department to ensure availability of adequate quantity of drinking water.

Food: Department of Food and Civil Supplies is in readiness to face any situation of drought and has maintained stock register of availability of food grains.

Health: Department of Health has trained personnel on its rolls to deal with situation of drought and forms an important organ of the Core Committee.

Fodder: An adequate step taken to ensure that fodder for cattle is stored in case of impending drought.

Veterinary Facilities: Veterinary Department has been instructed to store adequate stock of medicines to save lives of cattle and live stock.

FLOOD:

Floods caused extensive damage to human, animal and plant life. Flood result in rendering many people homeless leading to devastation and total chaos to lack of communication and means of transportation.

Preventive steps:

Certain advance measures are taken to prevent extensive damages caused by floods.

- ◆ Embankments
- ◆ Flood ways and diversions of rivers.
- ◆ Protection of river banks.
- ◆ Community-cum-shelter buildings.

Emergency measures to be taken

It is imperative that rescue and evaluation operations are taken up by the district administration without any loss of time. People living in low-lying areas are forewarned to evacuate the place and are shifted to a safe environment. Relief centers are to be set up to provide adequate food, clothing, shelter and water to the persons shifted. For shifting people and animals rafts and boats are to be kept ready and services of exservice men and sports persons who are good swimmers are employed for relief measures.

Facilities available in case of floods

- 1) Wireless communication with revenue authorities.
- 2) Boats available at Fisheries Department and located at Nidige Tank

- 3) Police Wireless system, Fax, Telephone Facilities.
- 4) Tipper and Lorries are available in the office of the Executive Engineers located at Shimoga and Sagara.
- 5) Inspection Bungalows, School and College Buildings are mainly available for shifting the affected peoples.

Arrangements during and after floods:

- Organizing rescue operations.
- Relief measures by non-official and voluntary organization may be enlisted as far as possible.
- Organize relief camps.
- Provision of basic amenities like drinking water, sanitation and public health care and arrangements of cooked food in the relief camps.
- Organizing enough relief parties to the rescue of the marooned people within a reasonable time limit.
- Establish alternate communication links to have effective communication with marooned areas.
- Organizing controlled kitchens to supply foods initially at least for 3 days.
- Organizing cattle camps, if necessary and provide veterinary care, fodder and cattle feed to the affected animals.
- Grant of emergency relief to all the affected people.
- Submission of daily reports and dissemination correct information through mass media to avoid rumors.
- Rehabilitation of homeless.
- Commencement of agricultural activities desolation, resowing.
- Repairs and reconstructions of infrastructural facilities such as roads, embankments, resettlement of flood prone areas.
- Health measures.
- Relief for economic reconstruction.

Functions of chief emergency coordinator (cec) in case of floods

The following functions are delineated for the Chief Emergency Coordinator. He will take various emergency decisions by convening the immediate meeting/conferencing of Emergency Planning, Group together they are responsible for the following.

1. Formulation and implementation of the plan.

2. Guidance/decision on matters of basic policy.
3. Activation of the emergency control centre and convening the emergency meeting.
4. Declaring the emergency zones with the help of technical personnel and experts.
5. Control on emergency operations.
6. Review of operational preparedness of emergency machinery.
7. Holding periodic mock/training exercises to ensure optimum preparedness at operational level.
8. Development and updating hazard scenarios and cascading effects from time to time.
9. Mobilizing organizations, financial and human resources for the plan.
10. Liaison with external/Govt. agencies and assessment of whether any public assistance is required.
11. Furnishing information on the incident to District, State and National Level authorities and if needed competent bodies may be called for assistance.
12. Liaison with press/media, to report the emergency.
13. Declaring rehabilitation centers in case of evacuation if called for
14. Monitoring post emergency situation in terms of health care, first aid, habilitation etc.,
15. Declare all clear, once everything is normal.

The emergency control centre consists of the following;

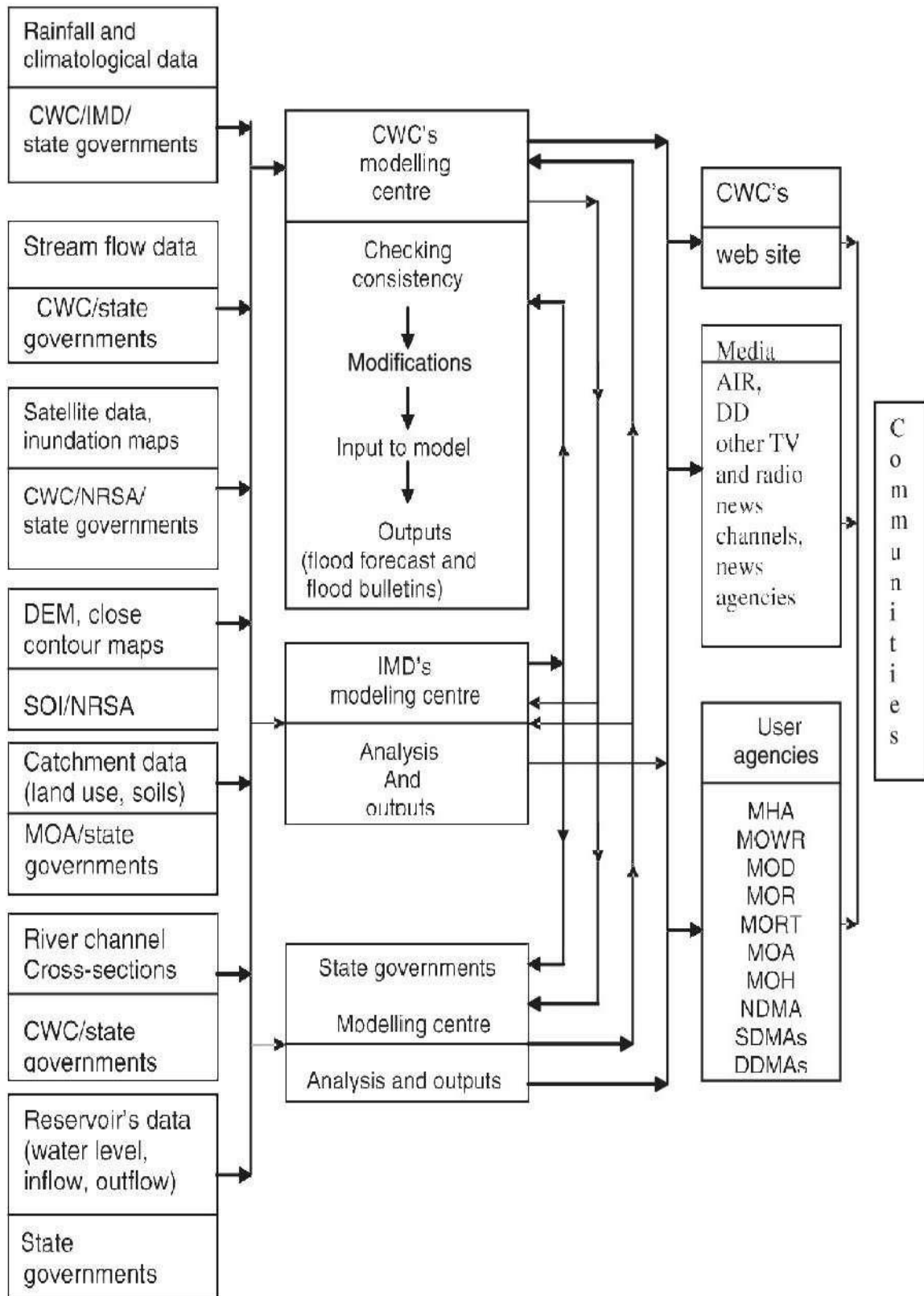
At least two external telephones (one incoming and the others one out going fitted with simultaneous/selective boards casting systems) with a PABX.

1. Wireless/Radio equipment (VHF/mobile).
2. Inundation/vulnerability maps indicating risk zones, assembly points, alternate evacuation routes, safe areas, rehabilitation centres etc.,
3. Telephone directory of emergency response system.
4. List of all emergency equipment and personnel for evacuation, personnel protection, medical aid etc., under the plan as well as with Government agencies in the district.
5. List of ambulances, base medical facilities, hospitals, rehabilitation centres etc.,
6. Reference books/chemical dossiers.

7. Copies of Disaster Management Plan.

Officers of all the departments should hold weekly meeting to discuss the inter departmental plans and share with each other past experiences and also to find suitable solutions to the difficulties that are faced in the field level. Local engineers of PWD, PRED, will be asked to be in red alert to assess the damage and to immediately repair/ make alternate arrangements in their area without waiting for procedural aspects. Logistic arrangements for rescue operation will also be discussed, including animal care, management / disposal of the deceased and salvaging.

Flowchart for Flood Forecasting and Early Warning



Emergency Response Procedure - Geological Disasters

Earthquake

Earthquakes present unique problems as they upset the complete infrastructure necessary for rescue and restoration of normalcy. For example, it could prevent emergency personnel from reaching victims, it increases the risk of fire and electrical shock, could result in complete failure of the telephone and other communication systems, disruption of water supply for firefighting / other reasons. It could, in addition, prevent ambulances from evacuating victims, fire personnel from reaching the fire affected areas, result in major structural debris causing secondary damage and most importantly, could affect the entire emergency organization that is geared up for handling emergencies.

The main actions for earthquake incidents include preventive (pre-incident), during incident and post incident actions. Each earthquake, depending upon its intensity (as measured on the Richer/ modified Mercalli Scale) would have different extent of damage.

Some of the pre-actions that are important include:

- Basic earthquake related training to staff (behavior during earthquake, how to recognize, dos and don'ts)
- As blackout is possible, a kit containing flashlights, portable radio, basic tools, should be available for emergency.
- Basic precautions such as sitting away from wall hanging items, bolting of almirahs to the wall rather than loosely lying cupboards, pasting tape to the glasses to avoid excessive shattering.

Actions immediately after tremors

Actions during an earthquake would depend upon the severity of the quake and the extent of damage-however, the basic steps for safeguarding life safety (top most criterion) include:

Activation of the fire orders, for fire is likely in case of major earthquakes. Pipelines would be expected to rupture as also storage tanks - this would result in a large-scale spillage and possible fires. The fire fighting system is likely to be incapacitated. In addition, power supply may be (most likely) cut off.

The main action would involve:

- Cutting off the power supply (if not cut off on its own already) to avoid electrical shocks, fires, etc.
- Halting any road / rail tanker filling operations, if in progress.
- Sending away road tankers to safe zones.
- Set up a call-receiving centre in addition to the DECR.
- Flash the telephone number over the local cable TV as well as the Doordarshan Channel.
- Issue a warning over the Radio regarding the earthquake and the future possibility of aftershocks.
- Rush rescue team to affected area to retrieve entrapped persons with the means available.
- Rush the injured to hospitals
- Get feedback from the Municipal Corporation regarding the affected areas and Colonies.
- Get a feedback from the District Education Officer on the conditions of the schools
- Call all the doctors and put them on Standby alert.
- Recall all the vehicle of the district and use them for reaching the various affected areas.
- Interact with the Red Cross organization for mobilizing the doctors in Uttara Kannada and neighboring district like Udupi.
- Contact the DG set operators and ask them to be on Standby for supplying the generators.
- Dispatch the Police units to the worst affected areas.
- Request the Army to help in the relief operations.
- Get the searchlight operators to supply the searchlights.

- Tents and Plastic sheets suppliers should be contacted to keep the same ready.
- Medical Outpost should be set up near the affected area with
 1. First Aid facility
 2. Splints
 3. Neck Collars
 4. Immobilizing stretcher
- The Triage area should be marked clearly so as to enable the ambulance staging
- The fire tender approach area as well as the other relief material vehicle area should also be identified
- All the approach roads to the major collapsed structures should be kept / made free.
- Crack teams should be identified which have probe Cameras for locating the dead and the injured in the rubble
- Sniffer dogs should also be called from the neighboring district to locate the injured
- Concrete cutters should be brought for cutting through the concrete rubble to reach the injured in the collapsed building
- The highway should be sealed.
- The neighboring district administration should be told about the disaster
- The power supply should be immediately cut-off in the affected area
- The water mains should be blocked to ensure that the collapsed structures do not get flooded as a result of breakage of water pipeline.
- Information should be gathered from the Civil Hospital about whether it has suffered any structural damage or weakening.
- All the private clinics / hospitals should be asked to keep the beds empty so as to ensure that the patients can be received for medical treatment.

For general public, important instructions should include:

- Get under a heavy table or desk and hold on, or sit or stand against an inside wall if inside the building and if unable to come out. If possible to come out without difficulty, assemble outside the building to avoid fatality due to structural collapse.
- Keep away from windows as these may shatter/crack resulting in possible injury.

If outdoors, stay away from tall objects (lighting poles, pipe racks, structural roofs) falling debris, trees and power lines.

Tanker Trucks drivers should drive to a clear spot and stay in the vehicle.

Post-earthquake actions

Post-earthquake actions are extremely important and these include:

Clean up of the debris and rescue of people who are alive

Making arrangement for the Morgue

Sitting in the open area where the tents can be put up

Expect aftershocks. They are just as serious as the main earthquake.

Put on shoes to protect from broken glass, chappals are to be avoided at any cost.

Check for casualties and fires (secondary fires could be raging).

Use a flash light to inspect for damage.

Do not go into damaged areas unless specifically trained to do so.

Do not use telephones except in emergencies.

Do not use vehicles except in emergencies.

Use a portable radio for obtaining information

Assist in rescue of co-workers and other persons who could be present at the installation as per the Fire Orders.

Forest Fire

Historically there have been no major forest fires in the district except for few bush fires in the densely forested areas. Precautionary measures are taken during summer months by appointment of temporary fire watches in vulnerable areas. In an unlikely event of a forest fire in Shivamogga District, following broad guidelines is to be followed:

On an intimation of forest fire, an aerial survey should be carried out.

Estimate burning / fire spread and evacuate people dwelling in the vicinity.

- After aerial surveillance, identify the area for creating fire breaks. Spread of fire can be controlled by cutting /eliminating vegetation and spreading with mud/sand.

- Cool the fire break area with water.

- Take necessary assistance from home guard, army, and Air force depending upon the intensity of the fire.

Land Slide

Over the past few decades, an array of techniques and practices has evolved to reduce and cope with losses from landslide hazards. Careful development can reduce losses by avoiding the hazards or by reducing the damage potential. Following approaches can be used individually or in combination to reduce landslide risk or eliminate losses.

- Restricting Development in Landslide Prone Areas – Land use planning is one of the most effective and economical ways to reduce landslide losses by avoiding the hazard and minimizing the risk. This is accomplished by removing or converting existing development or discouraging or regulating new development in unstable areas.

- Excavation, Construction, and Grading Codes - Excavation, construction, and grading codes should be developed for construction in landslide-prone areas (National Building code).

- Protecting Existing Development - Control of surface water and groundwater drainage is the most widely used and generally the most successful slope-stabilization method. Stability of a slope can be increased by removing all or part of a landslide mass, or by adding earth supports placed at the toes of potential slope failures. Restraining walls, piles or rock anchors are commonly used to prevent or control slope movement.

In most cases, combinations of these measures are used.

- Monitoring and Warning Systems - Monitoring and warning systems are utilized to protect lives and property, not to prevent landslides. However, these systems often provide warning of slope movement in time to allow the construction of physical measures that will reduce the immediate or long-term hazard. Site-

specific monitoring techniques include field observation and the use of various ground motion instruments.

Emergency Response Procedure - Industrial Disasters

Fire / Explosion

Leakage of LPG from storages or tankers and subsequent fire / explosion can cause widespread damage. Emergency response action for tackling LPG leaks is given below.

- Leaks from LPG storages, tankers, LPG pump glands, pipes flanges or pipeline ruptures or from vent emissions due to cargo tank over-pressure or relief valve failure will initiate a vapour cloud. Therefore, in case of release of large quantity of flammable vapour, immediate effort should be directed to eliminate source of ignition. In such event, eliminate all sources of ignition i.e. open flames, welding, cutting, operation etc.

- If possible, isolate the vessel involved in the incident.

- Direct or disperse the vapour cloud away from such sources by means of fixed and/or mobile water sprays or by water fog arrangement.

- If ignition does occur, there are chances of flash back to the source of leak. Leaks from pipelines are likely to be under pressure and these, if ignited, will give rise to a jet flame.

- In such a case it may be safer to allow the fire to burn out while protecting surroundings by copious cooling water rather than to extinguish the fire and risk a further vapour cloud which may result in explosion or flash back on encountering ignition source again.

Spillage of POL products in the industry will generally be contained in dyke resulting in confined pool. Leakages from road/rail tankers will result into unconfined pool. Emergency response actions for tackling such leaks are given below.

- A liquid spillage on land from tank or pipeline ruptures may be in large quantities and will generally be contained in bunded areas or culverts. The ignition of the ensuing vapour cloud would then result in a pool fire.

- If possible, isolate the vessel involved in the incident.

- Fire fighting operation should be carried from upwind direction.

Toxic gas release

The major hazard of the two MAH units is the toxic gas release. The hazardous material stored in these industries is chlorine.

Table 5.1: Physiological effects on human beings at various concentrations of chlorine

SI No.	Effects	Concentration in ppm
1.	Least amount required to produce slight symptoms after several hours exposure	1.0
2.	Least detectable odor	3.5
3.	Max. amount that can be inhaled for one hour without serious disturbances	3.0
4.	Noxiousness, impossible to breathe	5.0
5.	Least amount causing irritation of throat	15.1
6.	Least amount coughing	30.2
7.	Amount dangerous for 30 min. to one hour exposure	40-60
8.	Lethal dose	1000

Chlorine gas produces no known cumulative effect.

A concentration of 1ppm of chlorine may produce slight symptoms.

The Deputy Commissioner / District Magistrate, Shivamogga district is the declarer of Off-Site Emergency .

First-aid and Medical management of chlorine exposures

1. General Information

Chlorine is a greenish yellow color, pungent odor gas.

1. It is stored in liquid form
2. It is a toxic chemical and corrosive
3. It is mainly local irritant to lungs, eyes, skin
4. Systematic involvement is rare and occurs in severe exposures

Threshold limits

TLV – 0.5 ppm (TLV – Threshold Limit Value)

STEL – 1 ppm (STEL – Short Term Exposure Limit)

2. Route of entry

- a. Respiratory – through inhalation
- b. Skin – through contact
- c. Eyes – through contact

3. Signs and Symptoms

A. Liquid Chlorine

Skin Contact: Causes irritation with discomfort or rash. High exposure cause skin burns or ulceration.

Eye contact: Eye irritation with discomfort, tearing or blurring of vision. Higher exposure may cause eye corrosion with corneal or conjunctival ulceration.

B. Chlorine Gas

Acute exposure

Mild Cases

- i) Irritation and watering of eyes
- ii) Headache, feeling of suffocation and breathlessness
- iii) Painful dry and harsh bouts of cough. Burning in chest and upper abdomen

Severe Cases

- i) Restlessness, anxiety, drowsiness or altered consciousness
- ii) Rapid irregular pulse, cyanosis, moist hand and feet
- iii) Difficult to breathe, painful cough, wheezing or asthma like reaction
- iv) Rhonchi or basal crepitations

Extreme Cases

- i) Slow and thready pulse, fall of BP
- ii) Intense cyanosis, congestion of lungs (Pulmonary edema)
- iii) Unconsciousness

Chronic Exposure

- i) Prolonged exposure to 5 ppm – disease of bronchi and predisposition of tuberculosis
- ii) Concentration of 0.8 – 1 ppm causes permanent although moderate reduction in pulmonary function
- iii) Tooth enamel damage

Ingestion: Experiences nausea, vomiting, colicky pain and distension of abdomen in cases of swallowing of gas on exposure.

4. First-aid and relief measures

Chlorine Inhalation:

- a. If breathing is ceased

Commence artificial respiration

Administer oxygen as soon as possible

b. If breath is not ceased

Place the patient in comfortable position + at rest

Administer oxygen as soon as possible

Liquid Chlorine:

a. Skin contact

Flush the contaminated skin with plenty of water for 15 minutes.

Do not attempt chemical neutralization

Refer to doctor if irritation persists

b. Eye contact

Flush eyes with water for 15 minutes

Hold eyelids apart to ensure complete irrigation of all eye and lid tissues

Medical Relief

Mild cases: Give the following

a. Cough syrup – 2 teaspoon

b. Erasma + Strepsil tablets + Prednisolone + Lasixos

c. Hot tea or water to drink

d. Keep patient under rest and observe for pulmonary edema

e. Pulmicort / Salbutamol inhalers

For severe cases (who are conscious)

a. Oxygen inhalation

b. Inj. Deriphylline

c. Inj. Decadron

d. Tab Lasix or Inj. Lasix

e. Administer antibiotics if necessary

For unconscious: Give the following

a. Oxygen under pressure

b. Artificial respiration SOS

- c. IV fluids (if acidosis with Sodium bicarbonate)
- d. Inj. Decadron
- e. Inj. Deriphylline
- f. Inj. Lasix

Refer the patient to the hospital if necessary

5. Self help tips

The following useful tips will help in continuing the effects of Chlorine

- a. Take shallow breaths. Don't run or panic
- b. Proceed quickly against the wind direction to open areas
- c. Move to higher planes e.g. on to a hill
- d. If in multi-storied houses move to higher floors
- e. Cover the face (mainly eyes and nose) by a wet handkerchief or piece of cloth to reduce the irritation due to chlorine
- f. If mildly affected, consume tea/sugar/jaggery/paan/toffee etc. which will reduce the irritation in the throat
- g. In case of severe effects, get in touch with the rescuers/doctor for further treatment

Actions/precautions to be taken by the public in emergency

- a. Wet a piece of cloth with water and cover the nose and mouth
- b. Come out and lock the house
- c. Check for the wind direction with the help of cloth or sand
- d. Don't get panicky. Walk briskly in a direction perpendicular to the wind direction, or use any other mode of transport. After moving about a furlong, look for symptoms of gas and proceed further only if necessary.
- e. To the extent possible take the animals along with you in a direction perpendicular to the wind direction and if this is not possible set them free before leaving the house premises.
- f. Communicate to your neighbors about the occurrence of emergency.

The public can go back to their respective houses after the "All clear signal" is given by the competent authority or "All clear coded siren" from the factory. "All clear coded siren" from the factory will be a continuous blowing for 3minutes.

Emergency Response Procedure – Biological Disasters

Epidemic

The District Health Officer is the overall in charge of prevention and control of outbreak of any epidemic in the district in addition to his normal duties. District Malaria Officer, District TB Officer (with additional charge of AIDS prevention and control) assists him in the above task.

Malaria, Filariasis, Leptospirosis, Dengue fever are the common diseases in the district which could assume epidemic levels if not controlled in time. However outbreak of Cholera and other water borne diseases cannot be ruled out especially in the aftermath of a major flood in the district.

On detection of outbreak of any epidemic in the district, the administration should investigate the root cause of the epidemic and initiate the action to mitigate the same as follows:

- The people affected should be immediately shifted to hospitals for medical attention and kept isolated to prevent spread of disease.
- Additional medical help/ medicines may be mobilized from neighboring districts.
- Vaccination should be given to all unaffected persons and the general public should be educated about the precautionary steps to be taken against the prevailing epidemic.
- Steps should be taken to decontaminate the source of epidemic like water bodies (lake, wells etc.).
- There should be proper temporary morgue arrangement for safe preservation and disposal of corpses of persons died of epidemic.
- Clean up drive should be taken in the affected area as filth is the major source of contamination.
- Depending on prevailing situations, the administration should take action to close all the road side eateries/food stalls and advise them to destroy all stale food. Strict control should be exercised on the licensed restaurants.

Decision may be taken to close down all schools, colleges and other places of mass congregation like cinema halls etc.

Food Poisoning

Food poisoning is a probable phenomenon in religious or social functions where there is mass feeding of people by setting up of temporary or make shift community kitchens. This problem is mainly due to use of sub-standard materials and the unhygienic conditions in which the food is prepared.

On receipt of the information of the food poisoning in the district, the district administration should take following actions to instill confidence in the people

- Rush the food inspectors to the place of food poisoning for collection of sample and sealing of the kitchen.
- Identify the source of food poisoning and destroy the remaining stock of the contaminated food.
- Rush the affected persons to nearest hospitals for first aid / medical treatment.
- Additional medical / Para-medical personnel and additional stock of essential medicines may be mobilized from various hospitals to meet the increased demand.
- Proper information should be passed on to general public using various means of communication to prevent spread of rumours, which may result in panic situation.
- Take preventive measures to avoid re-occurrence of such food poisoning in future.

There should be proper control over quality control (by way of sampling / analysis or by tasting) of food samples before they are fed to masses.

Emergency Response Procedure - Miscellaneous Disasters

Miscellaneous Disasters Like Road Accidents, Building Collapse, Rail Accidents. While talking to the caller about disaster the following information should be sought from him:

- Where has the accident occurred?
- Where is the accident location i.e. nearest village / town etc?
- How many people are hurt?
- Is the driver alive and is he around?
- What is material involved in the accident, is it hazardous? And has he initiated any action? (if driver is calling)
- How many vehicles are involved in the accident?
- Is the road blocked due to accident?

- Is it a tanker or trailer?
- Can you sight any fire?
- Is any leakage observed from tanker?
- Do you feel any irritation in your throat or eyes?

The DC will:

- Alert all hospitals and doctors in Shivamogga / affected Taluk's and ask them to proceed to the scene of accident for rendering medical help.
- Take charge of dead bodies for post-mortem and necessary legal procedures.
- Arrange to provide police protection at the accident site.

Instructions by Police to be given immediately to the caller / Informer are:

- Ask no one to go near the tanker.
- Do not try to plug the leak.
- Try to instruct people to move away from the downwind direction of the leak (in the direction of wind).
- Stay clear from the road
- The Police should immediately rush to the site and cordon off the accident site from either side of the State Highway/District road and stop the traffic on either side.
- Request for ambulance and heavy equipment like crane for rescue operation and normalization.

Dam Bursts

Disasters by their very nature will be different and may require evacuation of communities. It is important to understand the nature of threat and the procedures to be adopted. All agencies involved in evacuation must have a common understanding of their roles and responsibilities in order to avoid confusion and panic behaviour. Different situations demand different priorities and hence the responsibility for ordering evacuation is assigned to different agencies.

Evacuation is ordered when:

- The community is exposed to danger within three hours; and
- Evacuation within one kilometre distance is to be affected

Only designated government official may order evacuation on the site:

- In consultation with technical personnel
- In consultation with the local official (such as Sarpanch)

For appropriate security and law & order, evacuation should be undertaken with assistance from community leaders

All such evacuations should be reported to DM or SP within 6 hours.

All other evacuations, that is, threat after three hours or evacuation beyond one kilometre can be ordered only by the DC or the competent authority like Public Health official, Irrigation, official, police, fire brigade, industrial security officer.

The following steps should be taken for evacuation:

Shelter sites should be within one hour's walk or 3 miles (5 km) of dwellings.

The evacuation routes should be away from the flooded area.

Evacuation routes should not include roads likely to be submerged in floods, but may include pathways.

Ensure proper evacuation by seeking community participation

Families should be encouraged to take along water, food, clothing and emergency supplies to last at least three days

People should listen to a battery-powered radio and follow local instructions

In case of inadequate transport or limited time, encourage community for emergency evacuation in the following order:

- Seriously injured and sick
- Children, women and handicapped
- Old
- Disabled people

In case of marooned people, evacuation must be carried out as soon as possible and the people transferred to transit camps. If evacuation is not possible within early hours of the disaster, marooned people must be provided with water, medicines, first-aid and cooked food. Emergency transport for the seriously injured can be arranged through speed boats or helicopters. A senior medical officer should accompany the rescue team along with required medical kits and ensure priority shifting of those seriously injured or requiring immediate medical attention.

Stampede

In case of a stampede many people especially the children and aged get trampled and may get badly injured which may even result in death if first-aid / medical attention is not provided immediately. Like in any emergency planning, the affected persons should be given immediate medical attention. Various precautionary measures should be taken to prevent any stampede wherever there is assembly of large crowd.

Following are various such measures for the consideration of the district administration.

- Identify and list the events wherein a large group of people gathers at one place.
- Survey the gathering site for confinement i.e. inside temple, auditorium, building, structure etc.
- Study the layout and identify stampede prone pockets i.e. staircases, entry / exit point, narrow lobby etc.
- Estimate size of population going to gather. If the site area is not adequate to control an expected number of people, do not allow them to gather at first place. This can be achieved by informing people well in advance, staggering the visitors by issuing passes / identity cards.
- Study the layout and maintain adequate space between two clusters of people.
- Build temporary watchtowers for monitoring.
- Ascertain adequate ventilation in the area.
- Ascertain uninterrupted power supply in the area. Make arrangement for standby power supply. As far as possible allow event to be conducted in day time.
- Inform people by Public address System and Close circuit TV to avoid any misunderstanding, rumour, panic situation.
- Post adequate staff to control mob.
- Segregation of male and female / children in the mob.
- Adequate arrangement for drinking water, food etc. As far as possible provide such facilities on mobile van, trolley instead of fixed counter/ stall.

CHAPTER-8

RECOVERY AND RECONSTRUCTION PLAN

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

Post Disaster Reconstruction and Rehabilitation

Post disaster reconstruction and rehabilitation should pay attention to the following activities for speedy recovery in disaster hit areas. The contribution of both government as well as affected people is significant to deal with all the issues properly.

- Damage assessment
- Disposal of debris
- Disbursement of assistance for houses
- Formulation of assistance packages
- Monitoring and review
- Cases of non-starters, rejected cases, non-occupancy of houses
- Relocation
- Town planning and development plans
- Reconstruction as Housing Replacement Policy
- Awareness and capacity building
- Housing insurance
- Grievance redressal

Administrative Relief

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

The district level relief committee consisting of official and non-official members including the local legislators and the members of parliament review the relief measures.

A district is sub-divided into sub-divisions and tahsils or talukas. The head of a sub-division is called the Sub-Division Officer (SDO) while the head of a Tahsil is known as a Tehsildar.

When a disaster is apprehended, the entire machinery of the district, including the officers of technical and other departments, swings into action and maintains almost continuous contact with each village in the disaster threatened area.

Reconstruction of Houses Damaged / Destroyed

Houses should be reconstructed in the disaster hit areas according to the following instructions:

- Owner Driven Reconstruction
- Public Private Partnership Program (PPPP)
- Under the PPPP the houses are reconstructed by the NGOs for the beneficiaries to be registered in the joint names of the husband and wife.
- All the houses should be insured.
- Financial, technical and material assistance provided by the government.
- The designs for seismic reconstruction of houses provided by the government.
- The material assistance provided through material banks at subsidized rates.
- Design of 20 model houses provided to the public to choose from with an option to have one's own design.

Military Assistance

If the district administration feels that the situation is beyond its control then immediate military assistance could be sought for carrying out the relief operations.

Medical Care

Specialized Medical Care may be required to help the affected population. Preventive medicine may have to be taken to prevent outbreak of diseases.

Epidemics

In the relief camps set up for the affected population, there is a likelihood of epidemics from a number of sources. The strategy should be to subdue such sources and immunize the population against them. The public health centres, health departments can practice vaccination drives, public awareness to drink boiled water, use chlorine tablets to purify the water sources.

Corpse Disposal

Disposal of dead bodies is to be carried out as a part of the operation to prevent outbreak of epidemics. Minimum official requirements should be maintained as it is a very sensitive issue.

The following points may be considered by the concerned authorities at the time of corpse disposal:-

1. Mass photographs of corpses,
2. Consent of the relatives or hand over to them
3. Make a panchnama of concerned localities.

Actions	Responsibility
Establish village / ward level committee for identification of dead bodies	AC / ULB
Prepare a record of details of the bodies retrieved in the Dead Body Inventory Record Register, allocate individual Identification Number, photograph, and prepare Dead Body Identification Form	Tehsildar / AC
Identification of the dead bodies and handing over to the next of kin	Village level / ward level committee
Transport unidentified dead bodies to the nearest hospital or mortuary at district / sub division / block level	AC/
Make public announcement for establishing identity	AC/
Handover the identified dead bodies to the next of kin	AC/ /Tehsildar
In case of unidentified dead bodies – prepare inventory, allocate individual identification number, photograph, finger print, obtain DNA sample if possible and fill Dead Body Identification Form	AC/ /Tehsildar
Preserve the information recorded as forensic information	AC/ /Tehsildar
Undertake last rights of unclaimed / unidentified dead bodies as per established religious practices	AC/ /Tehsildar
Coordinate with NGOs and obtain their support	AC/ /Tehsildar
Preserve the bodies of foreign nationals (if any) by embalming or chemical methods and then placed in body bags or in coffins with proper labelling for handing over and transportation of such bodies to Ministry of Extern Affairs, or to the Consular offices of the concerned countries and other actors such as International Committee of the Red Cross	AC/ /Tehsildar

Carcass Disposal

Actions	Responsibility
Prepare a record of details of the animal carcasses retrieved	
Identify owners of the livestock and hand over the animal carcasses	

Photograph all unidentified animal carcasses preferably before transportation for disposal	
Transport unidentified or unclaimed animal carcasses to the designated site for disposal	Director Department of Animal Husbandry
Maintain a record of carcasses buried or handed over	AC/ /Tehsildar/
Follow suggested guidelines for burial of carcasses or composting	AC/Tehsildar/Animal Husbandry

Guidelines for Disposal of Animal Carcasses

Guidelines for Burial

- Burial shall be performed in the most remote area possible.
- Burial areas shall be located a minimum of 300 feet down gradient from wells, springs and other water sources.
- Burial shall not be made within 300 feet of streams or ponds, or in soils identified in the country soil survey as being frequently flooded.
- The bottom of the pit or trench should be minimum 4 to 6 feet above the water table.
- Pits or trenches shall approximately be 4 to 6 feet deep. They should have stable slopes not steeper than 1 foot vertical to 1 foot horizontal.
- Animal Carcasses shall be uniformly placed in the pit or trench so that they do not exceed a maximum thickness of 2 feet. The cover over and surrounding shall be a minimum of 3 feet. The cover shall be shaped so as to drain the runoff away from the pit or trench.
- The bottom of trenches left open shall be sloped to drain and shall have an outlet. All surface runoff shall be diverted from entering the trench.
- Burial areas shall be inspected regularly and any subsidence or cavities filled.

Guidelines for Composting

- Select site that is well drained, at least 300 feet from water sources, sinkholes, seasonal seeps or other landscape features that indicate hydrological sensitivity in the area.
- Lay 24-inch bed of bulky, absorbent organic material containing sizeable pieces 4 to 6 inches long. Wood chips or hay straw work well. Ensure the base is large enough to allow for 2-foot clearance around the carcass.

- Lay animal in the centre of the bed. Lance the rumen to avoid bloating and possible explosion. Explosive release of gases can result in odour problems and it will blow the cover material off the composting carcass.
- When disposing large amounts of blood or body fluid, make sure there is plenty of material to absorb the liquid. Make a depression so blood can be absorbed and then cover, if a blood spill occurs, scrape it up and put back in pile.
- Cover carcass with dry, high-carbon material, old silage, sawdust or dry stall bedding (some semi-solid manure will expedite the process). Make sure all residuals are well covered to keep odours down, generate heat or keep vermin or other unwanted animals out of the window.
- Let it sit for 4 to 6 months, then check to see if carcass is fully degraded.
- Reuse the composted material for carcass compost pile, or remove large bones and land apply.
- Site cleanliness is the most important aspect of composting; it deters scavengers, and helps control odours and keeps good neighbourly relations.

Note: Animals that show signs of a neurological disease, animals that die under quarantine and those with anthrax should not be composted.

Salvage

A major effort is needed to salvage destroyed structure and property. Essential services like communications, roads, bridges, electricity would have to be repaired and restored for normalization of activities.

Outside Assistance

During disaster situations, considerable relief flows in from outside, thus there is an immediate need to co-ordinate the relief flows so that the maximum coverage is achieved and there is no duplication of work in the same area.

Special Relief

Along with compensation packages, essential items may have to be distributed to the affected population to provide for temporary sustenance.

Information

Information flow and review is essential part of the relief exercises. Constant monitoring is required to assess the extent of damage, which forms the basis of further relief to the affected areas.

Social Rehabilitation

Disabled persons

- Artificial limbs fitted to affected persons.
- Modern wheelchairs, supportive devices provided.

Children

- Orphaned children are fostered.
- Day centers set up
- Orphanages established.
- Child help lines established.

Paraplegics

- Pension scheme introduced for paraplegics.
- Physiotherapy under continuous supervision of doctors.

Old age people

- Aged persons given pensions.
- Old Age Homes established.

Women

- Pension sanctioned.
- Women's Livelihood Restoration Project started.
- Self-employment Schemes for Women.

Infrastructure

- Power
- Water supply
- Public buildings
- Roads and Bridges
- Dams and Irrigation.

CHAPTER:-9

RELIEF AND FINANCIAL AID

1) Definition of Relief and Rehabilitation Camp:-

Relief shelters and Rehabilitation camps shall be set up in order to accommodate people affected by a disaster. The camp shall be temporary in nature with basic necessities. People in the camp shall be encouraged to return to their respective accommodation once the normalcy is returned.

The State Govt / District administration sometimes may not be able to implement all the basic guidelines recommended by NDMA from the day one of the disaster and therefore, the following method shall be followed:-

- (a) First three days – Basic norms to the possible extent may be followed
- (b) 4 to 10 days – Efforts should be made to follow most of the norms recommended by NDMA in this Guideline.
- (c) 11 days and above – NDMA's prescribed norms shall be followed.

The factors like terrain, climatic conditions at the site of disaster etc. will also impact the requirement and ability of the administration and other stakeholders to deliver relief. These constraints should also be kept in view while prescribing minimum standards of relief.

2) Minimum Standards in respect of Shelter in relief camps:-

(a) State / UT / District administration shall take necessary steps to pre-identify locations / buildings like local schools, anganwadi centers / cyclone shelters / community centers/ marriage halls etc which can be used as Relief shelters where people can be accommodated in case of disaster in the area. In such centers, necessary facilities like sufficient number of toilets, water supply, generators with fuel for power back up during disasters shall be ensured.

(b) After a disaster, large covered space shall be required to accommodate the affected people. In order to avoid last minute arrangement and high cost, States/UTs can explore the option of advance MoUs with manufacturers / suppliers for supply of factory made fast track pre-fabricated shelters / tents / toilets / mobile toilets and urinals etc which can be dismantled and taken back by the supplier after the closure of the camp. This arrangement shall avoid delay in setting up of camp and exorbitant billing of essential supplies.

(c) In the relief centers, 3.5 Sq.m. of covered area per person with basic lighting facilities shall be catered to accommodate the victims. In mountainous areas, minimum covered area shall be relaxed due to lack of available flat land / built up area. Special care shall be taken

for safety and privacy of inmates, especially for women, widows and children. Special arrangements should be made for differently-able persons, old and medically serious patients.

(d) Relief centers shall be temporary in nature and be closed as soon as normalcy returns in the area.

(e) Sufficient number of sites based on population density shall be identified as relief centers and earmarked well in advance at the time of planning and development of a metro/city/town.

3) Minimum Standards in respect of Food in relief camps:-

(a) Milk and other dairy products shall be provided for the children and lactating mothers. Every effort shall be taken in the given circumstances to ensure sufficient quantity of food is made available to the affected people (especially for aged people and children) staying in the relief shelters / camps.

(b) Sufficient steps shall be taken to ensure hygiene at community and camp kitchens. Date of manufacturing and date of expiry on the packaged food items shall be kept in view before distribution.

(c) It shall be ensured that men and women are supplied food with minimum calorie of 2,400 Kcal per day. In respect of children / infants, the food to be supplied would be 1,700 Kcal per day.

4) Minimum Standards in respect of Water in relief camps:-

(a) Sufficient quantity of water shall be provided in the relief camps for personal cleanliness and hand wash.

(b) It may be ensured that the minimum supply of 3 liters per person, per day of drinking water is made available in the relief camps. Further, the State / UT / District authorities shall adjust the minimum quantity of water etc as per the geographic, demographic and social practices of the region. If other means for providing safe drinking water is not possible at-least double chlorination of water needs to be ensured.

(c) In order to ensure adequate water supply, the location of the source of water supply shall preferably be within the premises of relief shelter /camp. However, the maximum distance from the relief camp to the nearest water point shall not be more than 500 m, if tapped water supply is available.

5) Minimum Standards in respect of Sanitation in relief camps:-

(a) **Number of toilets:** 1 toilet for 30 persons may be arranged / built. Separate toilet and bath area be catered for women and children. At least 15 liters of water per person needs to be arranged for toilets / bathing purposes. Hand wash facility in toilets should be ensured. Steps may be taken for control of spread of diseases. Dignity kits for women shall be provided with sanitary napkins and disposable paper bags with proper labeling.

(b) Toilets shall not be more than 50 m away from the relief camps. Pit Latrines and Soak ways shall be at least 30 m from any ground water source and the bottom of any latrine has to be at least 1.5 m above the water level.

(c) Drainage or spillage from defecation system shall not run towards any surface water source or shallow ground water source.

6) Minimum Standards in respect of medical cover in relief camps:-

(a) Mobile medical teams shall visit relief camps to attend the affected people. Steps shall be taken to avoid spread of communicable diseases.

(b) If the relief camps are extended over a long time, then necessary arrangement may be made for psychosocial treatment.

(c) Helpline should be set up and contact number and details of which shall be displayed at the relief/shelters and adequately publicized to inform the people.

(d) For pregnant women, necessary basic arrangements shall be made by the local administration for safe delivery.

(e) Advance tie up / arrangement shall be made with the Govt / private hospitals so that necessary doctors / para-medical staff are available at short notice for relief camps to attend to the affected people. In respect of people who are affected and being referred to hospitals for treatment / operation etc, suitable transportation shall be arranged to reach to referred hospital.

(f) In order to manage mass casualty in a disaster, advance contingency plans for management of multiple casualties shall be developed.

7) Minimum Standards of Relief for Widows and Orphans:-

(a) In each camp, a separate register shall be maintained for entering the details of women who are widowed and for children who are orphaned due to the disaster. Their complete details shall be entered in the register, duly counter signed by the concerned officials and this register shall be kept as a permanent record with the District administration.

(b) Special care shall be given to widows and orphans who are separated from their families. For widows, certificate by the District Administration shall be issued stating that she lost her husband in the disaster and the same shall be issued **within 15 days of disaster**.

(c) As the widow / family shall be economically weak, the State administration shall provide a reasonable amount for the funeral rites of her husband and this payment shall be deducted from the subsequent financial compensation / relief that shall be paid by the Govt.

(d) Necessary financial compensation and other government assistance need to be arranged within 45 days of the disaster to the widow and to the orphaned children. In respect of orphaned children, similar certificate shall be issued and the children need to be taken care of properly and the funds that may be given to the children by the Govt. shall be duly deposited in a PSU Bank in a Joint A/C where the Collector / DC shall be the first account holder of the Bank account. Interest from the fund can be given to the child / guardian every month for his / her proper upkeep. Education for the child shall be ensured by the District / local administration.

(e) As far as ex gratia assistance on account of loss of life as also assistance on account of damage to houses and for restoration of means of livelihood, the norms provided by Govt of India (Ministry of Home Affairs) for assistance from SDRF should be the minimum standards of relief.

Revised list of items & norms of assistance from State Disaster Response Fund (SDRF)/ National Disaster Response Fund (NDRF)

(Period 2015-20, MHA Letter No. 32-7/2014-NDM-I Dated 8th April 2015)

Sl. No.	Items	NORMS OF ASSISTANCE
1	2	3
1.	Gratuitous Relief	
	a) Ex-Gratia payment to families of deceased persons.	Rs.4.00 lakh per deceased person including those involved in relief operations or associated in preparedness activities, subject to certification regarding cause of death from appropriate authority.
	b) Ex-Gratia payment for loss of a limb or eye(s).	Rs. 59100/- per person, when the disability is between 40% and 60%. Rs. 2.00 lakh per person, when the disability is more than 60%. Subject to certification by a doctor from a hospital or dispensary of Government, regarding extent and cause of disability.
	c) Grievous injury requiring hospitalization	Rs. 12,700/- per person requiring hospitalization for more than a week. Rs. 4,300/- per person requiring hospitalization for less than a week.
	d) Clothing and utensils/ household goods for families whose houses have been washed away/ fully damaged/severely inundated for more than two days due to a natural calamity.	Rs.1,800/- per family, for loss of clothing. Rs.2,000/- per family, for loss of utensils/ household goods.
	e) Gratuitous relief for families whose livelihood is seriously	Rs. 60/- per adult and Rs. 45/- per child, not housed in relief camps. State Govt. will certify that identified

	affected.	<p>beneficiaries are not housed in relief camps. Further State Government will provide the basis and process for arriving at such beneficiaries district-wise.</p> <p>Period for providing gratuitous relief will be as per assessment of the State Executive Committee (SEC) and the Central Team (in case of NDRF). The default period of assistance will upto to 30 days, which may be extended upto 60 days in the first instance, if required, and subsequently upto 90 days in case of drought/ pest attack. Depending on the ground situation, the State Executive Committee can extend the time period beyond the prescribed limit subject to that expenditure on this account should not exceed 25% of SDRF allocation for the year.</p>
2.	SEARCH & RESCUE OPERATIONS	
	(a) Cost of search and rescue measures/ evacuation of people affected/ likely to be affected	<p>As per actual cost incurred, assessed by SEC and recommended by the Central Team (in case of NDRF).</p> <p>- By the time the Central Team visits the affected area, these activities are already over. Therefore, the State Level Committee and the Central Team can recommend actual / near-actual costs.</p>
	(b) Hiring of boats for carrying immediate relief and saving lives.	<p>As per actual cost incurred, assessed by SEC and recommended by the Central Team (in case of NDRF).</p> <p>The quantum of assistance will be limited to the actual expenditure incurred on hiring boats and essential equipment required for rescuing stranded people and thereby saving human lives during a notified natural calamity.</p>
3	RELIEF MEASURES	
	a) Provision for temporary accommodation, food, clothing, medical care, etc. for people affected/ evacuated and sheltered in relief camps.	<p>As per assessment of need by SEC and recommendation of the Central Team (in case of NDRF), for a period up to 30 days. The SEC would need to specify the number of camps, their duration and the number of persons in camps. In case of continuation of a calamity like drought, or widespread devastation caused by earthquake or flood etc., this period may be extended to 60 days, and upto 90 days in cases of severe drought. Depending on the ground situation, the State Executive Committee can extend the time period beyond the prescribed limit subject to that expenditure on this account should not</p>

		<p>exceed 25% of SDRF allocation for the year.</p> <p>Medical care may be provided from National Rural Health Mission (NRHM).</p>
	b) Air dropping of essential supplies	<p>As per actual, based on assessment of need by SEC and recommendation of the Central Team (in case of NDRF).</p> <p>- The quantum of assistance will be limited to actual amount raised in the bills by the Ministry of Defence for airdropping of essential supplies and rescue operations only.</p>
	c) Provision of emergency supply of drinking water in rural areas and urban areas	<p>As per actual cost, based on assessment of need by SEC and recommended by the Central Team (in case of NDRF), up to 30 days and may be extended upto 90 days in case of drought. Depending on the ground situation, the State Executive Committee can extend the time period beyond the prescribed limit subject to that expenditure on this account should not exceed 25% of SDRF allocation for the year.</p>
4.	CLEARANCE OF AFFECTED AREAS	
	a) Clearance of debris in public areas.	<p>As per actual cost within 30 days from the date of start of the work based on assessment of need by SEC for the assistance to be provided under SDRF and as per assessment of the Central team for assistance to be provided under NDRF.</p>
	b) Draining off flood water in affected areas	<p>As per actual cost within 30 days from the date of start of the work based on assessment of need by SEC for the assistance to be provided under SDRF and as per assessment of the Central team(in case of NDRF).</p>
	c) Disposal of dead bodies/ Carcasses	<p>As per actuals, based on assessment of need by SEC and recommendation of the Central Team (in case of NDRF).</p>
5	AGRICULTURE	
(i)	<i>Assistance farmers having landholding upto 2 ha</i>	
A.	Assistance for land and other	

	loss	
	a). De-silting of agricultural land (where thickness of sand/ silt deposit is more than 3", to be certified by the competent authority of the State Government.)	Rs. 12,200/- per hectare for each item. (Subject to the condition that no other assistance/ subsidy has been availed of by/ is eligible to the beneficiary under any other Government Scheme)
	b) Removal of debris on agricultural land in hilly areas	
	c) De-silting/ Restoration/ Repair of fish farms	
	d) Loss of substantial portion of land caused by landslide, avalanche, change of course of rivers.	Rs. 37,500/- per hectare to only those small and marginal farmers whose ownership of the land is legitimate as per the revenue records.
B.	Input subsidy (where crop loss is 33% and above)	
	a) For agriculture crops, horticulture crops and annual plantation crops	Rs. 6,800/- per ha. in rainfed areas and restricted to sown areas. Rs. 13,500/- per ha. in assured irrigated areas, subject to minimum assistance not less than Rs.1000 and restricted to sown areas.
	b) Perennial crops	Rs. 18,000/- ha. for all types of perennial crops subject to minimum assistance not less than Rs. 2000/- and restricted to sown areas.
	c) Sericulture	Rs. 4,800/- per ha. for Eri, Mulberry, Tussar Rs. 6,000/- per ha. for Muga.
(ii)	Input subsidy to farmers having more than 2 Ha of landholding	Rs. 6,800/- per hectare in rainfed areas and restricted to sown areas. Rs.13,500/- per hectare for areas under assured irrigation and restricted to sown areas. Rs. 18,000/- per hectare for all types of perennial crops and restricted to sown areas.

		Assistance may be provided where crop loss is 33% and above, subject to a ceiling of 2 ha. per farmer.
6.	ANIMAL HUSBANDRY - ASSISTANCE TO SMALL AND MARGINAL FARMERS	
	<p>i) Replacement of milch animals, draught animals or animals used for haulage.</p>	<p><i>Milch animals -</i></p> <p>Rs. 30,000/- Buffalo/ cow/ camel/ yak/ Mithun etc.</p> <p>Rs. 3,000/- Sheep/ Goat/ Pig</p> <p><i>Draught animals -</i></p> <p>Rs. 25000/- Camel/ horse/ bullock, etc.</p> <p>Rs. 16,000/- Calf/ Donkey/ Pony/ Mule</p> <p>- The assistance may be restricted for the actual loss of economically productive animals and will be subject to a ceiling of 3 large milch animals or 30 small milch animals or 3 large draught animals or 6 small draught animals per household irrespective of whether a household has lost a larger number of animals. (The loss is to be certified by the Competent Authority designated by the State Government).</p> <p><i>Poultry:-</i></p> <p>Poultry @ 50/- per bird subject to a ceiling of assistance of Rs 5000/- per beneficiary household. The death of the poultry birds should be on account of a natural calamity.</p> <p><i>Note:</i> - Relief under these norms is not eligible if the assistance is available from any other Government Scheme, e.g. loss of birds due to Avian Influenza or any other diseases for which the Department of Animal</p>

		Husbandry has a separate scheme for compensating the poultry owners.
	ii) Provision of fodder / feed concentrate including water supply and medicines in cattle camps.	<p>Large animals- Rs. 70/- per day.</p> <p>Small animals- Rs. 35/- per day.</p> <p>Period for providing relief will be as per assessment of the State Executive Committee (SEC) and the Central Team (in case of NDRF). The default period for assistance will be upto 30 days, which may be extended upto 60 days in the first instance and in case of severe drought up to 90 days. Depending on the ground situation, the State Executive Committee can extend the time period beyond the prescribed limit, subject to the stipulation that expenditure on this account should not exceed 25% of SDRF allocation for the year.</p> <p>Based on assessment of need by SEC and recommendation of the Central Team, (in case of NDRF) consistent with estimates of cattle as per Livestock Census and subject to the certificate by the competent authority about the requirement of medicine and vaccine being calamity related.</p>
	iii) Transport of fodder to cattle outside cattle camps	As per actual cost of transport, based on assessment of need by SEC and recommendation of the Central Team (in case of NDRF) consistent with estimates of cattle as per Livestock Census.
7	FISHERY	
	<p>i) Assistance to Fisherman for repair / replacement of boats, nets – damaged or lost</p> <p>-- Boat</p> <p>-- Dugout-Canoe</p> <p>-- Catamaran</p>	<p>Rs. 4,100/- for repair of partially damaged boats only</p> <p>Rs. 2,100/- for repair of partially damaged net</p> <p>Rs. 9,600/- for replacement of fully damaged boats</p> <p>Rs. 2,600/- for replacement of fully damaged net</p>

	-- net (This assistance will not be provided if the beneficiary is eligible or has availed of any subsidy/ assistance, for the instant calamity, under any other Government Scheme.)	
	ii) Input subsidy for fish seed farm	Rs. 8,200 per hectare. (This assistance will not be provided if the beneficiary is eligible or has availed of any subsidy/ assistance, for the instant calamity, under any other Government Scheme, except the one time subsidy provided under the Scheme of Department of Animal; Husbandry, Dairying and Fisheries, Ministry of Agriculture.)
8	HANDICRAFTS/HANDLOOM – ASSISTANCE TO ARTISANS	
	i) For replacement of damaged tools/ equipment	Rs. 4,100 per artisan for equipments. - Subject to certification by the competent authority designated by the Government about damage and its replacement.
	ii) For loss of raw material/ goods in process/ finished goods	Rs. 4,100 per artisan for raw material. - Subject to certification by Competent Authority designated by the State Government about loss and its replacement.
9	HOUSING	
	a) Fully damaged/ destroyed houses	Rs. 95,100/- per house, in plain areas.
	i) Pucca house	Rs. 1,01,900/- per house, in hilly areas including Integrated Action Plan (IAP) districts.
	ii) Kutch House	
	b) Severely damaged houses	
	i) Pucca House	
	ii) Kutch House	
	(c) Partially Damaged Houses –	

	(i) Pucca (other than huts) where the damage is at least 15 %	Rs. 5,200/- per house
	(ii) Kutchha (other than huts) where the damage is at least 15 %	Rs. 3,200/- per house
	d) Damaged / destroyed huts:	Rs. 4,100/- per hut, <i>(Hut means temporary, make shift unit, inferior to Kutchha house, made of thatch, mud, plastic sheets etc. traditionally recognized as hut by the State/ District authorities.)</i> <i>Note: -The damaged house should be an authorized construction duly certified by the Competent Authority of the State Government.</i>
	e) Cattle shed attached with house	Rs. 2,100/- per shed.
10	INFRASTRUCTURE	
	<i>Repair/restoration (of immediate nature) of damaged infrastructure:</i> <i>(1) Roads & bridges (2) Drinking Water Supply Works, (3) Irrigation, (4) Power (only limited to immediate restoration of electricity supply in the affected areas), (5) Schools, (6) Primary Health Centres, (7) Community assets owned by Panchayat.</i> Sectors such as Telecommunication and Power (except immediate restoration of power supply), which generate their own revenues, and also undertake immediate repair/ restoration works from their own funds/ resources, are	Activities of immediate nature : Illustrative lists of activities which may be considered as works of an immediate nature are given in the enclosed Appendix. Assessment of requirements : Based on assessment of need, as per States' costs/ rates/ schedules for repair, by SEC and recommendation of the Central Team (in case of NDRF). - As regards repair of roads, due consideration shall be given to Norms for Maintenance of Roads in India, 2001, as amended from time to time, for repairs of roads affected by heavy rains/floods, cyclone, landslide, sand dunes, etc. to restore traffic. For reference these norms are

	<p>excluded.</p>	<ul style="list-style-type: none"> • Normal and Urban areas: upto 15% of the total of Ordinary Repair (OR) and Periodical Repair (PR). • Hills: upto 20% of total of OR and PR. - In case of repair of roads, assistance will be given based on the notified Ordinary Repair (OR) and Periodical Renewal (PR) of the State. In case OR & PR rate is not available, then assistance will be provided @ Rs 1 lakh/km for State Highway and Major District Road and @ Rs. 0.60 lakh/km for rural roads. The condition of “State shall first use its provision under the budget for regular maintenance and repair” will no longer be required, in view of the difficulties in monitoring such stipulation, though it is a desirable goal for all the States. - In case of repairs of Bridges and Irrigation works, assistance will be given as per the schedule of rates notified by the concerned States. Assistance for micro irrigation scheme will be provided @ Rs. 1.5 lakh per damaged scheme. Assistance for restoration of damaged medium and large irrigation projects will also be given for the embankment portions, on par with the case of similar rural roads, subject to the stipulation that no duplication would be done with any ongoing schemes. - Regarding repairs of damaged drinking water schemes, the eligible damaged drinking water structures will be eligible for assistance @ Rs. 1.5 lakh/ damaged structure. - Regarding repair of damaged primary and secondary schools, primary health centres, Anganwadi and community assets owned by the Panchayats, assistance will be given @ Rs 2 lakh/damaged structure. - Regarding repair of damaged power sector, assistance will be given to damaged conductors, poles and transformers upto the level of 11 kV. The rate of assistance will be @ Rs. 4000/poles, Rs 0.50 lakh per km of damaged conductor and Rs. 1.00 lakh per damaged distribution transformer.
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11	Procurement of essential search, rescue and evacuation equipments including communication equipments, etc. for response to disaster.	<ul style="list-style-type: none"> - Expenditure is to be incurred from SDRF only (and not from NDRF), as assessed by the State Executive Committee (SEC). - The total expenditure on this item should not exceed 10 % of the annual allocation of the SDRF.
12	Capacity Building	<ul style="list-style-type: none"> - Expenditure is to be incurred from SDRF only (and not from NDRF), as assessed by the State Executive Committee (SEC). - The total expenditure on this item should not exceed 5% of the annual allocation of the SDRF.
13.	State specific disasters within the local context in the State, which are not included in the notified list of disasters eligible for assistance from SDRF/ NDRF, can be met from SDRF within the limit of 10% of the annual funds allocation of the SDRF.	<ul style="list-style-type: none"> - Expenditure is to be incurred from SDRF only (and not from NDRF), as assessed by the State Executive Committee (SEC). - The norm for various items will be the same as applicable to other notified natural disasters, as listed above. or - In these cases, the scale of relief assistance against each item for ‘local disaster’ should not exceed the norms of SDRF. - The flexibility is to be applicable only after the State has formally listed the disasters for inclusion and notified transparent norms and guidelines with a clear procedure for identification of the beneficiaries for disaster relief for such local disasters’, with the approval of SEC.

Note:- (i) The State Governments are to take utmost care and ensure that all individual beneficiary-oriented assistance is necessary/ mandatory disbursed through the bank account (viz; Jan Dhan Yojana etc.) of the beneficiary.

(ii) The scale of relief assistance against each items for all disasters including ‘local disaster’ should not exceed the norms of SDRF/ NDRF. Any amount spent by the State for such disasters over and above the ceiling would be borne out of the resources of the State Government and not from SDRF.

Illustrative list of activities identified as of an immediate nature.

1. Drinking Water Supply :

- i) Repair of damaged platforms of hand pumps/ring wells/ spring-tapped chambers/public stand posts, cisterns.
- ii) Restoration of damaged stand posts including replacement of damaged pipe lengths with new pipe lengths, cleaning of clear water reservoir (to make it leak proof).
- iii) Repair of damaged pumping machines, leaking overhead reservoirs and water pumps including damaged intake – structure, approach gantries/jetties.

2. Roads

- i) Filling up of breaches and potholes, use of pipe for creating waterways, repair and stone pitching of embankments.
- ii) Repair of breached culverts. iii) Providing diversions to the damaged/washed out portions of bridges to restore immediate connectivity.
- iv) Temporary repair of approaches to bridges/ embankments of bridges., repair of damaged railing bridges, repair of causeways to restore immediate connectivity, granular sub base, over damaged stretch of roads to restore traffic.

3. Irrigation :

- i) Immediate repair of damaged canal structures and earthen/masonry works of tanks and small reservoirs with the use of cement, sand bags and stones. ii) Repair of weak areas such as piping or rat holes in dam walls/ embankments.
- iii) Removal of vegetative material/building material/debris from canal and drainage system.
- iv) Repair of embankments of minor, medium and major irrigation projects.

4. Health :

Repair of damaged approach roads, buildings and electrical lines of PHCs/ community Health Centres.

5. **Community assets of Panchayat**

- a) Repair of village internal roads.
- b) Removal of debris from drainage/ sewerage lines.
- c) Repair of internal water supply lines.
- d) Repair of street lights.
- e) Temporary repair of primary schools, Panchayat ghars, community halls, *anganwadi*, etc.

6. **Power:** Poles/ conductors and transformers upto 11 kv.

The assistance will be considered as per the merit towards the following activities:

	Items/ Particulars	Norms of assistance will be adopted for immediate repair
i)	Damaged primary school building	Up to Rs. 1.50 lakh/ unit
	Higher secondary/ middle/ college and other educational institutions buildings	Not covered
ii)	Primary Health Centre	Upto Rs. 1.50 lakh/ unit
iii)	Electric poles and wires etc.	Normative cost (Upto Rs.4000 per pole and Rs. 0.50 lakh per km)
iv)	Panchayat Ghar/ Anganwadi/ Mahila Mondal/ Yuva Kendra/ Community Hall	Upto 2.00 lakh/ unit
v)	State Highways/ Major District road	Rs. 1.00 lakh/ km *
vi)	Rural road/ bridge	Rs. 0.60 lakh/km *
vii)	Drinking water scheme	Upto 1.50 lakh/ unit
viii)	Irrigation Sector: Minor irrigation schemes/ Canal	Upto Rs. 1.50 lakh/ scheme
	Major irrigation scheme	Not covered
	Flood control and anti Erosion Protection work	Not covered
ix)	Hydro Power Project/ HT Distribution systems/ Transformers and sub stations	Not covered
x)	High Tension Lines (above 11 kv)	Not covered
xi)	State Govt Buildings viz. departmental/ office building, departmental/ residential quarters, religious structures, patwarkhana, Court premises, play ground, forest bungalow property and animal/ bird sanctuary etc.	Not covered
xii)	Long terms/ Permanent Restoration work incentive	Not covered
xiii)	Any new work of long term nature	Not covered
xiv)	Distribution of commodities	Not covered. (However, there is a provision for assistance as GR to families in dire need of assistance after a disasters).
xv)	Procurement if equipments/ machineries under NDRF	Not covered
xvi)	National Highways	Not covered (Since GOI born entire expenditure towards restoration works activities)
xvii)	Fodder seed to augment fodder production	Not covered

* If OR & PR rates are not provided by the State.

CHAPTER:-10

CAPACITY BUILDING & TRAINING MEASURES

TRAINING

Requirement for Training

The functional responsibilities of various key personnel as well as functions in the emergency organization has been defined in the earlier chapters which describe the policies, procedures and roles before, during and after an emergency. They should be sufficient to cope with any unforeseen emergency.

One of the main features of the District Disaster Management Plan is the training to all the personnel identified in the emergency organization as well as bringing about awareness in the general public who may be affected by any disaster.

The following functional aspects have to be included in a training programme.

- Initial Notification
- Communication
- Public Alert and Warning
- Fire and Rescue Services
- Emergency Public Information
- Evacuation
- Protective Shelter
- Enforcement of Law and order (Police Services)
- Public Works and Resource Services
- Recovery / Re-entry

Detailed and user-friendly, checklist type instructions may be prepared for the various agencies / segments of the emergency response organization to execute the functions during the training program.

Emergency Response Training

Extensive planning will be effective only if people are properly trained in all aspects of the plan, the role in its implementation, and how the tasks are to be coordinated. The development and conduct of a training program for the emergency organization is vital to emergency preparedness. Emergency response teams and medical personnel must all be trained. Classroom type lectures, demonstrations, and participation in exercises that test the adequacy of the plan are essential to maintenance of a well-prepared team of emergency response personnel.

To minimize the extent of the training needed, the emergency organization position has been developed so as to keep the emergency duties parallel to the individual's day-to-day responsibilities wherever possible. Initially, the in charge of emergency services like the Fire Chief or Police Chief would be the head of the first responder organization. However, as the full emergency response organization is deployed, the responsibility and function of the Emergency Management Coordinator is transferred to the Deputy Commissioner of the district.

It is the responsibility of the district administration to identify the training needs of the various members of the emergency organization. It is best achieved by comparing the normal duty of the person and the duties he is expected to carry out during any emergency.

One weakness common to many training programs is the inadequate attention paid to personnel changes in the emergency organization through local transfers and new appointments and transfer of personnel. Training for volunteer emergency responders like Home guards and other social service organization also presents more difficulties than for paid full-time emergency workers, because of the time restrictions and lack of funds.

The goals of any training program are to ensure that participants obtain a thorough understanding of their plans and procedures, and develop the leadership and communication skills necessary for confident decision making during stressful situations.

A well-developed and coordinated training program is required. Co-ordination of training programs conducted by corporate, plant, local, and possibly State organization is recommended, to avoid costly duplication of effort. The frequency of emergency response personnel training greatly influences the capability to respond during a test or actual emergency.

The main elements of a good training program are:

- The development of training program goals.
- The identification of target (common) training groups
- The establishment of group-specific, task-oriented training objectives
- The preparation of student training manuals and visual aids.
- The preparation of individual lesson plans, including hands-on experience, if appropriate.
- The establishment of a training schedule.
- The evaluation and correction of the training program.

A good training program provides initial training for all tasks, it should provide periodic refresher training for those who have been given the initial training, and also should provide for the training of new personnel who may be inducted from time to time.

MOCK DRILLS

Provision for Mock Drills

By far the best training is received from participation in the enactment of mock accident scenarios during drills and exercises. These serve as positive training experiences and are also advantageous to public relations, once the appropriate level of training and readiness is achieved. Their purpose is to give people confidence that the contingency plan works, and to identify those areas of improvement that, once corrected, will ensure that properly implemented plans and procedures can adequately protect public health and safety.

There are two major considerations in the preparation and implementation of a successful drill to test the ability of all personnel and resources to respond to an emergency:

- 1) The formation of a competent, knowledgeable, and highly motivated planning and coordination exercise committee, and
- 2) The development of a scenario that induces drill participants - the "players" - to fully demonstrate their knowledge and capabilities, and that demonstrates the readiness level of emergency response facilities and equipment.

It is advisable to test small parts of the contingency plan frequently, through tabletop exercises and mini drills, in such important areas as notification and communication. Full-scale field exercises once in two years involving various government agencies, industrial facilities and local responders are recommended.

Whether the exercise is a limited or full-scale test of the contingency plan, the development process is essentially the same, though the planning for (and expense of) a full field exercise is considerably greater. In particular, as a part of this process, one should:

- **Define the goals and objectives:**

The general objectives (overall, applicable to all).

The specific objectives - for each participating function/ group/ organization.

- **Identify the participants:**

The players - key and alternate(s) for each function

The moderators/controllers to keep the scenario going

Evaluators

- **Develop the scenario:**

Prepare a draft scenario abstract for comment/approval

Draft a full scenario, with specific activities to test objectives

Obtain required comments/ approval of the draft scenario

Finalise the scenario.

• **Develop supporting materials** (Note: the following apply to a tabletop exercise; the list would necessarily be expanded for a full field exercise)

Initial conditions

Maps of:

- i. affected areas
- ii. evacuation routes
- iii. vulnerable zones

Data tables:

- i. meteorological
- ii. release/activity levels
- iii. doses (if appropriate)

Emergency organization charts

Messages or questions to guide responses

Notification message forms

Exercise Description:

- a. purpose
- b. agenda
- c. scope
- d. methodology
- e. player "ground rules"

• **Make logistic arrangements**

Establish date, time, duration (include time for the critique session).

Arrange for the use of location facility (ies) and/or room(s) at a selected time.

Invite participants

Establish a readily observable identification scheme (arm bands, caps, jerseys, signs) for players, controllers, evaluators, and observers

• Prepare scenario packages and handouts

• Conduct the exercise and critique session

• Prepare a written critique - ensure that the identified improvement action items are entered into a tracking system.

The post-exercise critique session is ideally held immediately following the drill or exercise involving all participants. It provides feedback to those involved, while events and their response actions are fresh in their minds. A follow-up written evaluation, summarizing the carefully considered comments of the participants, is also important, since an exercise of the plan uncovers its deficiencies. These may be found, for example, in equipment (most important being the communications equipment), operating procedures, protocol, or interagency relationships. Often, they signify training program improvement areas. To correct the deficiencies, it is important to establish an Action Item Tracking System, wherein identified problem areas are defined, responsibility for and expected date of completion designated, and accomplishment noted. This is all a part of plan maintenance.

CHAPTER-11

STANDARD OPERATING PROCERES (SOPs)

In order to effectively respond to a disaster, it is imperative to have a clear definition of roles & responsibilities as well as well defined operating procedures for all the organizations & officers involved. Such Standard Operating Procedures (SOPs) should be well understood and promptly followed to ensure effective execution of disaster management activities.

Functions of Revenue Authorities

1. Activating of various NGOs/Voluntary Organizations for necessary materials.
2. Providing adequate compensation to loss of life and property.
3. Declaration of all clear signals.

Functions of Assistant Commissioner

The Assistant Commissioner (AC) will be the overall in charge of Rescue shelter/Rallying post and parking yards.

1. The AC will ensure adequate food and clothing in co-ordination with Dy. Director, Food and Civil Supplies, Voluntary Organizations, Individual Persons as deemed necessary in his option.
2. The AC will also ensure proper medical aid (first aid as well as shifting of affected persons to hospitals, etc) in co-ordination with District Health Officer and District Drug Controller.
3. The AC will ensure adequate security and safety in co-ordination with SP (Law & Order), Shivamogga and Dy. SP, Shivamogga as the case may be.

In addition to these responsibilities, the AC will assist the CEC in all other matters as the case may be.

Functions of Tahsildars

1. He will look after all the facilities required at rescue shelter/rallying post like food, clothing, medical aid, water, electricity, sanitation and other basic necessities in co-ordination with respective Government Agencies, as well as voluntary organizations.

2. He will manage and arrange for any other requirements on need basis at that point of time in co-ordination with respective government authorities.
3. He will alert all his subordinates and utilize their services to manage the rescue shelter/rallying post.
4. His actions will be in concurrence from AC/DC.

Functions of Industry Inspector

1. The officer will receive information from the SP or in charge of factory and immediately rush to the site along with maximum possible personnel. He shall help fire-fighting personnel in rescue operations.
2. In view of close proximity of police station to the industrial area, take immediate control of the site and rescue operation in co-ordination with site in charge.
3. Alert all the subordinate officers coming under his jurisdiction and ensure their availability at the site of emergency to maintain Law & Order, traffic, rescue, salvaging etc., till such time the full emergency operation comes into action.
4. Ensure that the information is passed on to the superior officers and necessary instructions are received and adhered to.
5. Ensure that all the anti social elements are identified and rounded off if required.

Functions of Police Services

The main function of police authorities are,

- To maintain law and order
- Regular patrolling of affected areas
- Establishes rescue/safe routes in advance for timely response

- Cordoning off the area
- Control of traffic
- Shifting of all vehicles to the parking yards
- To render assistance in controlling and fighting disasters, salvage operations, rendering first aid and medical help
- shifting of the affected to rallying posts/rescue shelters
- Another important function would be identification of the deceased, informing their relative, removal and disposal of dead bodies
- Finally, preparing the list of missing persons and take steps to trace them

The police authorities will also work with NGOs and other service organizations when needed.

Functions of Circle Inspector (Law and Or- der) For city limits

1. The office will be overall in charge of the functions of Police Department in case of offsite emergency. He will receive the communication and instructions from CEC from time to time.
2. On receiving the information about the emergency from CEC, the officer will rush to the incident spot and oversee law and order, organize for additional requirement of men and Home Guards if required.
3. Receive information from the site in charge and divisional fire officer or his deputy available at site for appropriate and necessary rescue operation.
4. Arrange for necessary transportation of vehicles in co-ordination with RTO and in charge of parking yard for evacuation of people as well as critical cases.

5. Ensure that adequate numbers of vehicle are provided, fitted with public address system and wireless to the convoy team.
6. Arrange for necessary ambulance/medical facilities in co-ordination with District Health Officer/Deputy Director, Animal Husbandry for evacuation of people and livestock respectively.
7. In confirmation with CEC, arrange for removal of dead bodies (if any) and will pass on the information to the relatives of the decease and will ensure disposal of dead bodies after conducting postmortem in co-ordination with DHO.
8. Arrange for maintaining law and order at the site of emergency, rescue shelter parking yards, main roads leading to emergency site, etc., pass on the information to the CEC about actions on various fields.

Functions of Police Inspector

1. The officer will receive information from SP, Shivamogga.
2. He will immediately rush to the site of incident and conduct on the spot inspection. Obtain first hand information.
3. Ensure that information is passed on to the superior officers and necessary instruction are received and adhered to.
4. Convey the message on the extent of leakage, extent of area affected, the ground situation, the scenario prevailing in and around the water works.
5. Ensure that, he himself and his personnel are equipped with necessary personal protective equipment. The recommended PPE are cartridge type respirators for short term exposure and the pressurized airline respirators for long term exposure.
6. Take immediate steps to inform the traffic police.

7. Alert all the subordinate officers and ensure their availability at the site of emergency to maintain law and order, traffic, rescue, salvaging, etc. Till such time, the full emergency operation comes into action.
8. Ensure that all the anti-social elements are identified and rounded up, if required

Function of Inspector (Traffic)

1. The SP, Traffic will be the overall in charge of traffic management who is assisted by Dy. SP, Traffic in case of offsite emergency.
2. Receive the communication of offsite emergency from CEC and disseminate the information to all the functionaries and mobilize required force and put them into action for managing various traffic points, routes, etc.
3. For each industry, separate routes are identified as normal route and emergency route.
4. Mobilize necessary police personnel/vehicles to man and control traffic on various roads identified as safe routes and also take measures to divert normal traffic away from the emergency routes identified.
5. Ensure available of adequate number of vehicles fitted with public address system/wireless etc. and directly supervise manning of routes and parking yards.
6. Initiate action to ensure adequate number of skilled drivers in consultation with RTO, KSRTC, Home guards and Truckers Association etc.
7. The SP will initiate action on his own only under exceptional circumstances; However, his action shall be communicated to his superiors and should be confirmed with CEC.
8. Any other action as deemed necessary base on the circumstances.

Functions of Police Inspector/Sub Inspector

They will receive orders from the DSP and act accordingly the Police Inspector will assume the charge of DSP in the absence of the DSP till such time the superior officer arrives at the place of accident and takes control then onwards, he will continue to receive the orders from the superior officers and act accordingly.

Functions of Police (Traffic)

1. The officer will be overall in charge of parking yard and for managing, controlling and arranging sufficient number of vehicles.
2. Ensure that adequate number of trucks, buses and other mode of transport vehicles are arranged for rescue operation in co-ordination with RTO.
3. Ensure that adequate communication vehicles are arranged in coordination with various police authorities.
4. Motor Vehicle Inspector from RTO department will be assisting Inspector of Police (Traffic) in managing parking yards.
5. Assist the DSP, Police Inspector - Traffic in mobilizing adequate number of skilled drivers in consultation with RTO, KSRTC, Truckers Associations and Home guards etc., as the case may be.

Functions of Fire Services

1. The Regional Fire Office is located at Shivamogga.
2. The Regional Fire Officer and the Divisional Fire Officer are responsible to fight and control the fire, leakage, spillage, etc., with proper instructions and guidance.

3. Rush to the site of emergency immediate after the receipt of information from the site Controller or on emergency call.
4. Establish safe routes in advance for rushing to site and ensure best response time to minimize damage.
5. Workout advance plan for requirement of resources like fire tenders, trained personnel, protective equipment and the ways to meet extra requirements if any.
6. Assist the onsite emergency personnel in fighting emergency, rescuing injured/affected people trapped in dangerous zones and participate in salvage operation.
7. Assist medical/police personnel in imparting first aid.
8. Ensure availability of adequate water supply through KIADB authorities.
9. Maintain constant contact and communicate the message to the CEC with regard to the control measures undertaken, salvage operation, rescue methods, etc. And any other information required by the CEC on continuous basis.
- 10.) Take any other appropriate actions as deemed necessary in control of emergency.

Functions of Fire Station Officer

The Fire Station can cater to the immediate need of the plant, but certainly not adequate to manage the emergency assumed in this document. Therefore,

1. On receipt of fire call, rush to the site of incident with all crewmembers and equipment and start fighting the fire.
2. Immediately send distress call to all other fire stations for additional reinforcement. Contacts the Divisional Fire Officer and informs him about the severity of the fire, the kind of assistance required, etc.

3. Continue to receive the necessary information from his superior officers and the DSP and adhere to the instructions.
4. Assist the police, Home guards and other Rescue Team the rescue evacuation of persons, salvage, etc.
5. Continue to be in action till such times the divisional fire officer or his deputy arrives at the place of incident and takes charge. From there onwards, he will continue to assist the officials.

Function of Health and Medical Services

1. District Health Officer (DHO) will be overall in charge of health and medical services to be rendered at the site of emergency or at various rescue shelters, affected places, hospitals, pathology laboratories, etc.
2. On receiving the information from CED, he will contact all Hospital Superintendents, Drug Controller, Blood Banks for mobilization of required ambulances, Doctors, Nurses, Medicines, life saving drugs, blood,* etc.
3. Rush to the site, assess the extent of severity and establish adequate (Temporary Medical Centre). Ensure hygienic conditions at the rescue shelters cum rallying posts, temporary medical centers. Take appropriate action in shifting affected persons to proper hospitals in Shivamogga and provide appropriate treatment.
4. Arrange for removal of dead bodies, if any, after post-mortem and disposal of the same, in consultation with CEC and DCP.
5. Render advice to CEC on precautionary measures to be taken by public in affected sites/villages, rescue shelter cum rallying posts to prevent the outbreak of epidemic diseases.
6. If necessary, he should undergo training to handle the wireless apparatus for effective communications.

Functions of Veterinary Service:

1. Deputy Director of Animal Husbandry will be the overall in charge for treatment of affected animals at site/hospital in co-ordination with police/voluntary organizations and revenue authorities.
2. On receiving information from CEC, he will rush to the site and activate the Temporary Medical Centre (TMC) at appropriate places in consultation with CEC.
3. Dy. Director will also co-ordinate with Assistant Commissioner, RTO, DCP, Inspector of Police (Traffic), for arranging necessary vehicles for shifting of animals, if required.
4. The officer will be provided with one Police Officer with adequate number of Police Personnel and Home guards to ensure the orderly treatment and management of the Temporary Medical Center.
5. The officer will identify the drug stores and ensure the supply of adequate and necessary drugs through the Drug Control Authorities.

Functions of RTO

1. The RTO will be the overall in charge for providing number of rescue vehicles like trucks, buses, cars or any other type of transportation vehicles to emergency site, rescue shelter cum rallying post etc., for transportation of human beings as well as animals.
2. Receive information from CEC and act accordingly.
3. Mobilize all possible resources in arranging transportation vehicles in coordination with KSRTC, Truckers Association, Travel Agencies, etc, also ensure availability of adequate number of skilled drivers and advise the Inspector (Traffic).

4. Workout the requirement of heavy earth moving equipment like cranes etc., and mobilizes the same in co-ordination with such agencies/parties.
5. Depute adequate numbers of Motor Vehicle Inspectors for assisting Inspector of Police, Traffic (in charge of parking yard), and Rescue Shelter cum rallying post, at the site of emergency.

Functions of Karnataka State Pollution Control Board

1. On receiving information from CEC, the Environmental Officer will mobilize all possible resources at his disposal and keep the laboratory functioning for analysis of pollutants, emissions, etc.
2. Rush to the site, collect the samples, analyze the pollutants and the likely effect on human life/environment and inform the CEC about the same and the corrective actions to be taken to prevent further damage.
3. Act as an expert and advice the CEC about the kind of message to be disseminated to the public and press, etc, on pollution matters.

Function of Experts of District Crisis Group (DCG)

1. All the member of the DCG will be communicated about the emergency.
2. On receipt of emergency communication, they will immediately inform the control room about the place of their availability and simultaneously report to the CEC.
3. They will receive necessary instructions from the CEC and act accordingly.

They will render adequate and timely technical guidance and assist CEC and other agencies involved in the control of emergency.