Government of Uttar Pradesh

Standard Operating Procedures

Emergency Support Function – 9
Information and Planning

DRAFT

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CHAPTER 1

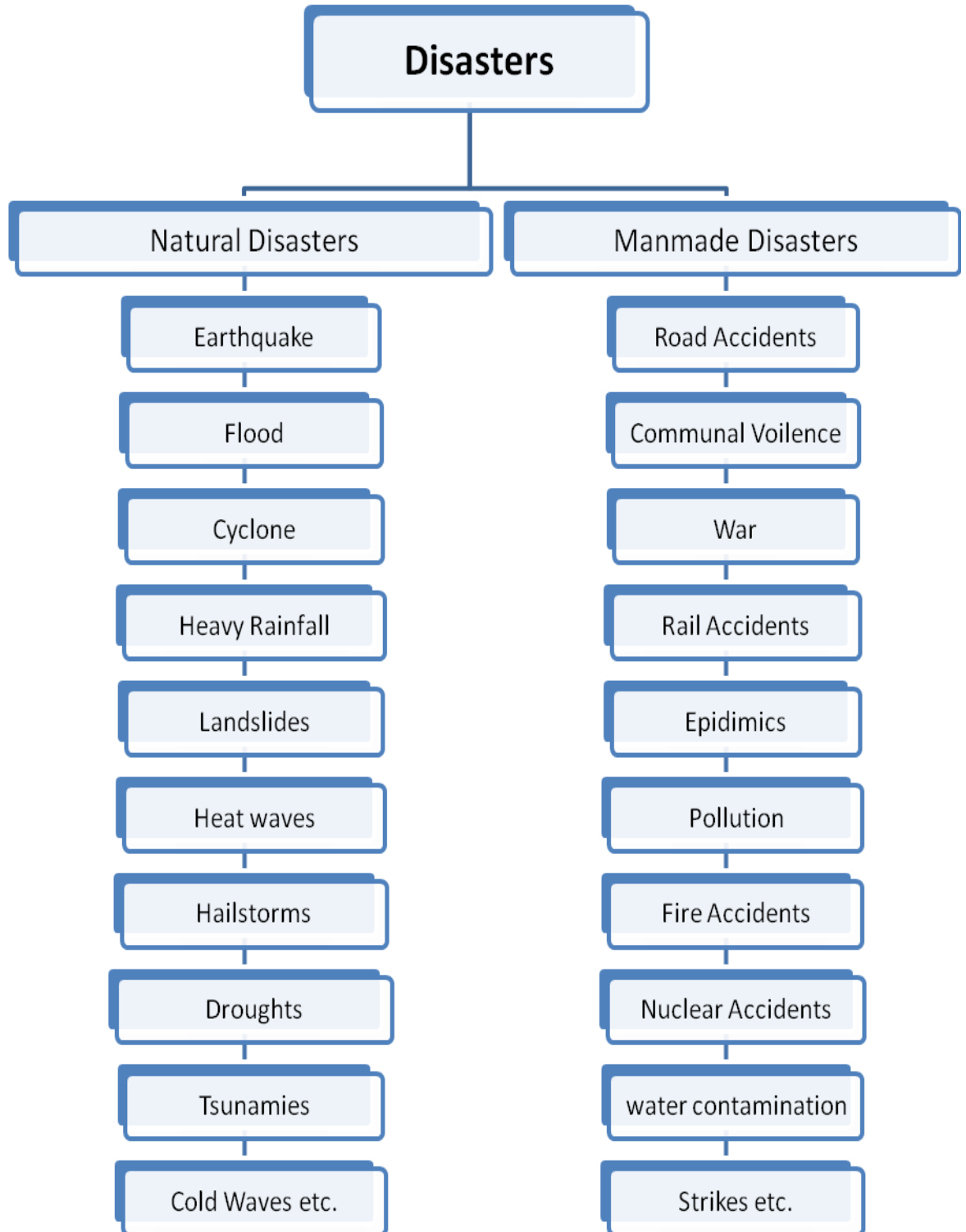# INTRODUCTION to Disaster / ESFs / SOPs

Information and Planning

Defining Disaster

It is difficult to arrive at a definition of a disaster. There have been many attempts to define disasters, but all run into the problem of either being too broad or too narrow. Having a definition of a disaster is extremely important for identifying which events to include or exclude from the category of disaster. In general, *'Disaster refers to the serious disruption of the functioning of society causing widespread human, infrastructure or environmental loss, which exceeds ability of the affected society to cope with its own resources.'* Or in other words most disaster events are defined by the need for external assistance. Notably, the decision on which situations require external assistance may differ by country or region. In some situations, it may be a political decision as well. World Health Origination defines Disaster as **"any occurrence that causes damage, ecological disruption, loss of human life, deterioration of health and health services, on a scale sufficient to warrant an extraordinary response from outside the affected community or area."** While some other international origination like Red Cross defines disaster as *'Disasters are exceptional events which suddenly kill or injure large numbers of people'* which do not

necessarily includes the role of government, or international organization to define an event of disaster.

Type of Disasters

Disasters can be broadly classified in two ways. First classification includes 'Natural and Man made disasters' and second includes 'Sudden and Slow onset disasters'. The first category of classification is being commonly used among academicians, governments and international organizations. If the cause of disaster is natural, it is classified as Natural Disaster like earthquake, flood, cyclone etc and if the cause is human factor it is classified as Human like Road Accidents, war, communal riots etc. In second classification we consider temporal aspect of disaster, if disaster is very frequent, it is considered as sudden disaster. Such type of disaster usually claims huge amount of human life like, earthquake, tsunamis, volcanic eruption, cyclones, tornados etc. If disaster is slow in nature and the effect is discernable in long span of time it is considered as slow onset disasters. Such type of disaster includes pollution, drought, water contamination, existing or anticipated food shortages etc.

Disasters

Natural Disasters

- Earthquake
- Flood
- Cyclone
- Heavy Rainfall
- Landslides
- Heat waves
- Hailstorms
- Droughts
- Tsunamies
- Cold Waves etc.

Manmade Disasters

- Road Accidents
- Communal Voilence
- War
- Rail Accidents
- Epidimics
- Pollution
- Fire Accidents
- Nuclear Accidents
- water contamination
- Strikes etc.

Earthquakes

Earthquakes are vibrations or waves on the surface of the earth which causes an unexpected and rapid shaking of earth surface. These violent vibrations are caused by the tectonics movement inside the earth's surface. Earthquake strikes all of a sudden at any time of day or night in a violent way. It gives no prior warning. If it happens in a populated area, the earthquake can cause great loss to human life and property. Therefore we can only take preventive measures for ensuring safety of buildings, transport infrastructures, communication facelifts, water supply lines, electricity etc and we can also spread awareness among residents to ensure their safety.

Flood

Flood is also one of the most common hazards in the greater part of the world. Floods can be defined as *'the submergence of usually dry area by a large amount of water that comes from sudden excessive rainfall, an overflowing river or lake, melting snow or an exceptionally high tide.* Floods has multiple effects on human society, these can be primary effects like causalities and property loss, secondary effects like contamination of water, loss of entire harvest and spread of water borne diseases or tertiary effects like economic hardship, because of decline in tourism, food shortage, rebuilding costs, price increase, lack of manpower etc.]

Cyclone

An atmospheric system characterized by the rapid inward circulation of air masses from high pressure towards a central low-pressure center, usually accompanied by stormy winds, heavy rainfall and often destructive weather. Cyclones circulate anticlockwise in the Northern Hemisphere and clockwise in the Southern Hemisphere. It is attended by high temperature, moist air, abundant precipitation, and overcast sky.

There are two types of cyclones, Tropical and Temperate cyclones. Tropical cyclones are found between 5° to 30° latitude in both the hemisphere. They have about 80 km to 300 km horizontal extent (diameter) and 15 to 16 km vertical extent. Their speed can vary between 32km to 120 km per hour. They are known by different names in the different parts of the world like Hurricane in Caribbean Sea (USA, Mexico, Cuba etc), Typhoon in South China Sea, Willy-wilies in Australia, Taifu in Japan and Cyclone in Indian Ocean. Tropical cyclones are violent and destructive in nature.

Temperate cyclones are found in mid latitudes, between 35° to 60° latitude in both the hemisphere. The diameter of temperate cyclone can vary

between 1000 to 2000 km and the average speed is about 40 km per hour. In comparison of Tropical Cyclone it does not cause much disaster

Heavy rainfall

Heavy rainfall usually raises the water level of rivers, dames or lake. When the water level is higher than the river banks or the dams, the water comes out from the river, there will have flooding. When the precipitation rate is between 4.0 mm/hour - 16.0 mm/hour it is known as heavy rainfall. When it varies between 16.0 mm/hour - 50 mm/hour it is known as Very heavy rain and when the precipitation rate is > 50.0 mm/hour it is known as Extreme rain. While in urban areas, if the drainage system is not proper it causes severe urban flooding. The July 2005 Mumbai flooding is one of the important examples which show the disasters effect of heavy rainfall. The heavy rainfall episode claimed about 750 lives's and stopped the working of city for many days.

Heat wave

There is no universally accepted definition of a heat wave but in general. 'A heat wave is a prolonged period of excessive heat, which may be often accompanied by high humidity'. The term heat wave is relative in nature and changes with the general weather of the country or region. A

temperature which is normal for people living in hotter climate can be termed as heat wave in a colder area. Severe heat waves have a catastrophic effect like crop failures, thousands of deaths from hyperthermia (heatstroke), cardiovascular problems and widespread power outages due to increased use of electricity for fans, coolers and air conditionings.

People living in urban areas may be at greater risk from the effects of a prolonged heat wave than people living in rural regions. An increased health problem, especially for those with respiratory difficulties, can occur when stagnant atmospheric conditions trap pollutants in urban areas, thus adding unhealthy air to excessively hot temperatures. In addition, concrete structures store more heat and gradually releases it at night, which produces significantly higher night time temperatures in urban areas known as the "urban heat island effect."

Drought

Drought occurs when a region receives consistently below average precipitation. In India drought is generally associated with week or failure of Monsoon. In some conditions Monsoon fails for many years, causing severe drought in the large part of the country. Droughts can have a substantial impact on the ecosystem and agriculture of the affected region. Although

droughts can cause significant damage and harm the local economy. It can cause, damage to plant growth or yield, famine, wildfires, shortages of water for industrial users, dust storms, desertification, erosion, mass migration, malnutrition, dehydration and related diseases.

Fire Accidents

Fire is the rapid oxidation process that creates light, heat and smoke, which varies in intensity. A controlled use of fire is helpful to us, while an uncontrollable fire sometime creates great damages. There are several reasons that causes fire accidents. There causes includes Electrical short circuit, Chemical reaction, Lightning, LPG leakages, Bomb blasts, Road accidents, Train accidents etc. Fire is a major hazard to urban areas and the cause of massive amounts of damage to property and life. In summers these accident becomes more frequent.

Road Accidents

Road accident is a serious problem all over the world. However, most of the developed countries have succeeded in checking and reversing the number of road fatalities, but still in developing countries like India, it is one of the most serious problems. Surprisingly no other un-natural accidents claims such amount of human life as road accidents.

EMERGENCY SUPPORT FUNCTIONS (ESFs)

Emergency Support Functions

 The Emergency Support Functions (ESFs) are variously identified response teams, which is activated with the occurrence of any disaster. The number of such teams varies according to the distribution of specific work. Each ESF has a defined area to deal at the time of disaster. These ESFs will be identified as per the need/nature of situation/disaster. For example ESF Team 1 can be given a task   Coordination, ESF Team 2 - Communication, ESF Team 3 - Debris Clearance, ESF Team 4 - Information Dissemination, ESF Team 5 - Emergency Medical Response etc. Other ESFs can be Evacuation, Search & Rescue, Relief, Electricity, Water, Transport, Law & Order etc.

Role of ESF in implementing SOPs

ESFs assess their strength before any emergency and accordingly prepare their Standard Operational Procedures (SOP) to mitigate and manage any disaster. Their well preparedness will mitigate the damages done by any disaster/ emergency. These ESFs will be identified as per the need/nature of situation/disaster.

To ensure an effective operational system of the ESFs, it is necessary that

- The individual ESFs prepare their Standard Operational Procedures (SOP) and Plan.

- These plans are integrated to form the State Response Plan.

- Simulation exercise (Mock Drill) is practised by each ESF at regular intervals.

- The individual ESFs update their response system regularly.

(STANDARD OPERATING PROCEDURE) SOP

Standard Operating Procedure is a predefined set of directives. It is widely used concept by different organization to guarantee the expected outcome with out any error. In general terms SOPs can be defined as "A set of directives, covering those features of operations that lend themselves to a definite or standardized procedure. Such procedures are applicable unless prescribed otherwise in a particular case. Thus, the flexibility necessary in special situations is retained without loss of its effectiveness." Standard Operating Policies and Procedures can be effective catalysts to drive performance improvement and improving organizational results. Every good quality system is based on its standard operating procedures (SOPs).

In terms of disaster

In terms of disaster management a Standard Operating Procedure (SOP) is a set of written instructions that is to be followed by an organization to mitigate and manage any disasters event.

There are verities of disaster which effects and each of them are of different nature, as discussed above. Thus it becomes necessary to prepare a different SOP for different type of disasters.

Why SOPs are necessary?

Imagine a situation where two different defense organizations (like Army and Police) decide to conduct a combined terrorist operation. The members of the new consolidated team know the geographic area and local these terrorists. They all are well trained, with years of experience on the job. They are best equipped and have access to all facelifts necessary for the operation. Now the result should be an immediate improvement in operation effectiveness, quality, and efficiency of forces, right? Unfortunately, the opposite may be true in situations like this. That's because each of the predecessor of different Defense departments had its own unique way of doing things in term of plans, policies, traditions, methods, etc. Even some of the legal authorities under which they operated were different. As a result, combining organizational systems and personnel leads to miscommunication, conflict, and problems on the operation ground. These problems may have been avoided if the new organization had implemented written guidelines that defined precisely how operations were to be conducted. These guidelines, often called **standard operating procedures** or SOPs, clearly spell out what is expected and required of personnel during emergency response and non-emergency activities. They provide a mechanism to communicate legal and administrative requirements,

organizational policies, and strategic plans to the members. In short, they get everybody "reading from the same sheet of music."

Characteristics of SOPs

- ✓ A SOP is a written document / instruction detailing all steps and activities of a process or procedure.

- ✓ These should be carried out without any deviation or modification to guarantee the expected outcome.

- ✓ Any modification or deviation from a given SOP should be thoroughly investigated and outcomes of the investigation documented according the internal deviation procedure.

- ✓ All quality impacting processes and procedures should be laid out in Standard Operating Procedures (SOPs). These SOPs should be the basis for the routine training program of each employee.

- ✓ SOPs should be regularly updated to assure compliance to the regulatory requirements and the working practice. A minimum review schedule of 3 years is recommended.

- ✓ Changes of SOPs are in general triggered by process or procedural changes / adjustments. These changes should be managed by the

internal site change control procedure. Part of the activity list of such changes should be to update the related SOP.

✓ SOPs should be in place for all Quality Systems plus the specific operational activities on site.

✓ The structure of an SOP System and the total amount of individual SOPs should be carefully taken into consideration.

✓ Too many SOPs could lead to a collapse of the SOP System. System SOPs should not be mixed up to keep systems and interaction between quality systems easy.

The terms **standard operating procedure** and **standing operating procedure**, both abbreviated as **SOP**, are used in a variety of different contexts like disaster, healthcare, education, industry, military, etc.

CHAPTER 2

Information and Planning

ESSENTIAL ELEMENTS OF INFORMATION

To assess quickly and accurately the affect of a disaster on the population and infrastructure of an area, emergency managers require early intelligence on the areas noted below. This information facilitates accurate assessment of what response activities and material are required to save lives, relieve human suffering, and expedite response and recovery operations. During the early hours of a disaster and in the absence of "ground truth" information such as actual on-site surveys or imagery, GIS, computerized predictive modeling, and damage estimation software may be used to develop *initial* estimates of damage. As soon as possible, actual on-site ground surveys will be performed. The following information is needed as

- Boundaries of the disaster area

- Social, economic, and political impacts

- Jurisdictional boundaries

- Status of transportation systems and critical transportation facilities

- Status of communications systems

- Access points to the disaster area

- Status of operating facilities

- Hazard-specific information

- Weather data affecting operations

- Seismic or other geophysical information

- Status of critical facilities and distribution systems

- Status of remote sensing and reconnaissance activities

- Status of key personnel

- Status of ESF activation

- Status of disaster or emergency declaration

- Major issues and activities of ESFs

- Resource shortfalls and status of critical resources

- Overall priorities for response

- Status of upcoming activities

- Donations

- Historical and demographic information

- Status of energy systems

Vulnerability mapping of the area should be done in order to make people aware of the potential hazard. It also helps the concerned authorities and agencies to prepare risk mitigation plan and centralized their resources in adversely affected pockets of the area. Vulnerability map must include below mentioned aspects:

1. Topographical or terrain study of the area

2. Geo-climatic study

3. Geological study of the area

4. History of area in terms of disaster.

5. Transportation network

6. Settlement patterns

7. Type of buildings

8. Density of population

9. Land use

10. Drainage pattern

CHAPTER 3

STANDARD

OPERATING

PROCEDURE

(SOP)

Information and Planning

DISASTER SITUATION AND INFORMATION AND PLANNING (RESPONSIBILITIES)

1. Introduction

The High Powered Committee on Disaster Management, 2001 identified 14 Emergency Support Functions (ESFs), which are the essentials of emergency management comprising of various coordinating agencies, which manage and coordinate specific kinds of assistance common to all disaster types. It also introduced a concept of trigger mechanism, which was developed to ensure the smooth flow of response activities after disaster. The trigger mechanism has been envisaged as a preparedness plan whereby the receipt of a signal of an impending disaster would simultaneously energise and activate the mechanism for response and mitigation without loss of crucial time. This would entail all the participating managers to know the task assigned to them and the manner of response. Identification of available resources, including manpower, material, equipment and adequate delegation of financial and administrative powers are prerequisites to the successful operation of the trigger mechanism. Thus, in order to commence activities at various stages of a disaster, Standard Operating Procedures (SOP), which are in essence the trigger mechanisms, need to be developed for each of the 14 ESFs. This document provides Standard Operating Procedures in respect of the **Emergency Support Function -9 Information and Planning**

Role of Primary and Supporting Agencies are listed. Necessary checklists and formats are attached. The actions to be taken by the concerned agencies before, during, after a disaster and during normal times are provided in this document.

This document has been developed keeping in view the guidelines provided by the following:

i. "The Report of High Powered Committee (HPC) on Disaster Management, October 2001

ii. "National Disaster Response Plan – Building a Culture of Prevention", prepared by the High Powered Committee (HPC) on Disaster Management, October 2001

iii. "Disaster Management Act" passed by the Indian Parliament on 26 December 2005

iv. Uttar Pradesh State Disaster Management Act 2005

a. Primary Agencies

The primary agencies "**Department of information and public relation and department of planning"** is responsible for coordinating the activities of ESF-8 and acting as a liaison between the various Secondary agencies providing services in the field, municipal ESF-8 coordinators, and with the State Coordinator for ESF-8.

b. Supporting Agency

The supporting agencies of ESF- 8 are -, Department Of Science And Technology, Remote Sensing Application Centre U.P, NGO's & Mass Media.

Purpose

The purpose of public information is to establish uniform policies for the effective development, coordination, and dissemination of information to the public in the event of a disaster.

a) This ESF will be implemented upon notification of occurrence of a potential or actual major disaster.

b) Actions taken by this ESF will be guided by and coordinated with the related departments.

c) This ESF will encourage the use of congregate feeding arrangements and distribution centers as the primary outlets for disaster **..**

Objective

The objective of Emergency Support Function information and planning (ESF-9) is to:

1. use this intelligence to support the Command Group, Logistics, and Operations in their impact assessment and response missions;

2. Identify and anticipate future needs and resource requirements, and incorporate this analysis into incident action plans, situation reports, and other planning documents.

3. The ESF also describes the means, organization, and process by which a jurisdiction provides timely, accurate, and useful information and instructions to area residents throughout an emergency.

4. Activates as needed in anticipation of, or immediately following, a disaster or emergency;

5. Processes information that is common to one or more operational elements and that contributes to the overall perspective of the emergency

6. Coordinates activities of on-the-ground assessment personnel

7. Serves as site of overall coordination of situation assessment operations

8. Tasks support agencies to provide technical expertise and information necessary to develop accurate analysis of a developing or ongoing situation

9. Contacts other organizational elements to provide daily information updates for reporting and analysis requirements.

10. To collect, process and disseminate information concerning a potential or actual disaster or emergency; identify problems and recommend solutions; and plan and coordinate with the different supporting agencies

11. Develop procedures and formats for information gathering and reporting

Scope

The scope of information and planning ESF is to involve all agencies/departments in emergency operations. It is necessary to ensure that all information is coordinated and correct so that effective planning is done.

Emergency public information actions before, during, and following any emergency will be determined by the severity of the emergency as declared by involved, State government. A significant disaster information response will involve much State, local and private sector agencies

Activation

Based on the information received by the Department Of Information And Public Relation /Planning,) district disaster manager at the district level issues the alert. . ESF-9 information and planning should become operational within 2 hours of notification. Immediate actions should be taken accordingly.

CONCEPT OF OPERATIONS

The primary function of ESF-9 is to manage the information needs of the disaster area by assessing the needs and managing the dissemination of information in proper manner in the affected area. ESF-9 will be the liaison with voluntary agencies providing services and other ESFs within the County to provide a coordinated approach to managing information needs. And to control of spreading rumors regarding the disaster condition, number of causalities etc.,

In a large event requiring local or state mutual aid assistance, ESF-5 will work with its support agency counterparts to gather status information, statistics, situation reports, and planning initiatives.

The development of a fully functional, effective, and sustainable ESF 5 capability for Uttar Pradesh State will be guided by the following principles:

a. All Emergency Support Functions will be fully integrated into all phases of ESF 9.

b. ESF will address the potential impacts of natural, technological and man-made hazards.

c. Planning for recovery will begin immediately upon impact of a disaster by means of a core Recovery Planning Unit within ESF 5/Planning Section.

d. Emphasis will be given to pre-disaster planning for post-disaster utilization of disaster intelligence to support Incident Action Planning.

e. ESF 9 generated information and analyses will be used in three phases of disaster operations: pre , during and post-disaster and immediate and sustained response and recovery phase.

Information and Planning will give priority to four fundamental and interrelated functions:

1. Use of technology and human intelligence to collect, analyze, and disseminate information on disaster impacts, including direct impacts (people, buildings, infrastructure) and indirect impacts (debris generated, hazmat releases)

2. Assess the capabilities of local government, the business community and volunteer agencies to effectively respond to the disaster.

3. Assess and prioritize the immediate needs of impacted communities and neighborhoods.

4. Incorporate the analyses into Incident Action Plans that establish operational objectives, and identify resource requirements to accomplish these objectives.

Disaster Conditions

The public needs timely and accurate information for protection of life and property during response to, and recovery from a disaster situation. To reduce inaccuracies and misinformation, the State will coordinate information with participating local and State agencies and should attempt to coordinate emergency public information through the Disaster Management Cell (DMC) at State level. At no time will a news release from any State agency conflict with news releases from local government.

<u>Planning Assumption</u>

- In a disaster situation, there is a need for a central collection point in the **state,** where situation information can be compiled, analyzed, and prepared for use by decision makers.

- There is an immediate and continuous demand by officials involved in response and recovery efforts for information

about the developing or ongoing disaster or emergency situation.

- There may be a need to rapidly deploy field observers or assessment personnel to the disaster area to collect additional critical information about resource requirements for victims.

- Information and Planning Section staff needs to be self-sufficient in terms of supplies, equipment, and communications connectivity during this initial period.

- Initial Information and Planning Section activities may require 24-hour operations.

- Information coordination will be limited at the onset of an incident.

- Demands for information support will be immediate and will be continuous during an emergency.

- State and local personnel in the field will be the best source of vital information regarding damage assessments; needs assessments; and geographical, logistical, and other necessary site-area information.

- There may be delays in establishing full operational capability because telecommunications may be impacted and

lead-time will be required to establish a state presence at the disaster site.

- The Emergency Operations Center or secondary EOC will be used as the point of contact for information coordination. There will be misinformation and rumors to contend with.

. EMERGENCY SUPPORT FUNCTION ORGANIZATION

a. National Level

At the national level ministry of Information and Public Relation and Planning of India are main authorities with the aim, to provide information. At the national level "nodal officer –information and planning" is appointed to carry out the functions.

b.   State Level

At the state level department of Information and Public Relation and Planning, has primary responsibility for all ESF-9 activities.

District Level

At district level "officer in charge – Information and Public Relation and Planning" is appointed to carry out the functions. District administration may design a coordination program with the control room in the district.. When district resources are inadequate to handle the emergency, the officer in-charge will contact nodal officer – of other supporting agencies.

Agencies

a.   Primary Agency

Department of information and public relation and department of planning is responsible for coordinating the activities of ESF-9 and acting as a liaison between the various community agencies providing services in the field, municipal ESF-9 coordinators, and with the State Coordinator for ESF-9 . As the Primary Agency for ESF-9, the responsibilities include:

- ✓ Notification, activation and mobilization of all agencies assigned to ESF-9.

- ✓ Organizing and coordinating the various assignments and staffing of facilities at which ESF-9 is required to be located.

- ✓ Coordination of all support agency actions in performance of missions assigned to ESF-9 .

- ✓ Responsible for maintaining and updating the information on daily basis in disaster situation.

b.   Support Agencies

Department Of Science And Technology, Remote Sensing Application Centre U.P , NGO's & Mass Media.

All support agencies of ESF- 9 will perform following generalized functions.

- ✓ Notifying, activation and mobilizing all personnel and equipment to perform or support assigned functions designated with the Basic Plan of this document or the response actions of this Annex.

- ✓ Coordination of all actions of the support agency with the primary agency in performing assigned missions of ESF-9.

- ✓ Identifying all personnel and resource requirements to perform assigned missions which are in excess of the support agency capabilities..

Preparedness

(Department Of Information And Public Relation And Planning)

Following are the preparedness aspects Department.

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- ✓ Appoint one officer as "Noda! Officer – information "at the state level.

- ✓ Appoint one officer as "Officer-in-charge information" at the district level.

. ✓ The "Officer-in-Charge - information" will ensure that all field staff and other officers submit the necessary reports and statement of expenditure in a format as required by DM.

- ✓ Review and update precautionary measures and procedures and review with staff the precautions that have taken to protect equipment and the post disaster procedures to be followed.

- ✓ Ensure that all staff is aware of recommended precautions to protect life and personal property.

- ✓ Contingency plans should be established for providing food and emergency shelter for local staff and for auxiliary staff being sent into the affected area.
- ✓ Develops and maintains liaison with support agencies to ensure readiness.
- ✓ Develop procedures and formats for information gathering and reporting.
- ✓ Develops and maintains the process for information coordination during an emergency or disaster.
- ✓ Develops reporting formats and systems, and coordinates damage assessment reporting procedures.
- ✓ Assist in developing information displays within the EOC.
- ✓ Coordinates with the Specialized Emergency Response Team for information regarding their response actions.
- ✓ Participate in an exercise at least annually to validate this annex and supporting SOPs.
- ✓ Develop a GIS database capable of producing the required maps during an a disaster.
- ✓ .Provide weather and climate information during emergencies and disasters as required
- ✓ An advanced information system should be maintained at each level of hierarchy

- ✓ The information should immediately reach the Emergency Management Group who in turn through chain of command be made known to all the key personnel in the organization.

- ✓ An illustrative check list of who has to do what is required to be prepared by each organization for its each station, in case of emergency.

- ✓ Exhaustive training of personnel's at each level of the hierarchy for dealing with the disaster situation.

- ✓ An illustrative check list of who has to do what, to whom report and how to do, is required to be prepared by each sub- station, in case of emergency.

- ✓ An illustrative check list of the material being used during and after the disaster condition should be made.

Though it is not possible to completely avoid the natural disasters, but the sufferings can be minimized by creating proper awareness of the likely disasters and its impact by developing a suitable warning system, disaster preparedness and management of disasters through application of information technology tools

The Department Of Information And Public Relation And Planning will establish and integrate four interrelated information and planning functions:

- Intelligence;

- Planning;

- Documentation;

- Technical Services.

. The **Intelligence** section is responsible for collecting, analyzing and disseminating disaster intelligence, or information and analyses that describe the nature and scope of hazards and their impacts. . Disaster intelligence incorporates essential elements of information, which include but not limited to:

- Compiling Status

- Area of damage

- Damage and loss of functionality to essential facilities (police, fire, and medical)

- Damage and loss of functionality of shelters

- Damage to roads, bridges, utilities and other key infrastructure

- Disaster impacts on vulnerable populations, including special needs groups.

- Human Needs Assessment

• Status of designated staging areas (Points of Distribution, storage Areas, and Logistical Staging Areas).

. The **Planning** section is responsible for incorporating information and analysis on the current and forecasted situation into incident action plans and situation reports, which set forth tactical objectives for subsequent operational periods.

The **Technical Services** section brings together technical specialists whose skills are critical to the use of proven information management systems and technologies to support the ESF 9 mission.

The Technical Services section will perform three interrelated functions:

1) To fully integrate RS and GIS into ESF 9;

2) To become proficient in the identification and application of the analyses that contribute to the ESF 9 mission, including and

3) To provide the analyses to the planning unit in a format that can be readily used to prepare disaster information plans and other reports.

The **Documentation** section maintains accurate and complete incident files, including a record of the major steps that ESF 9 has taken in preparing and executing the disaster information plans.

Secondary agencies

Department Of Science And Technology \ Remote Sensing Application Centre Uttar Pradesh

- ✓ To Collects and processes essential elements of information.
- ✓ Maintains and updates the status board with current information, maps, charts and computer displays.
- ✓ Provides weather and climate information during emergencies and disasters as required.
- ✓ Provides staff supervision for hazard specific information as related to the disaster or emergency.
- ✓ Collects, updates and disseminates information about the status of missions assigned to state agencies throughout the EOC activation process.
- ✓ Collects and updates current and potential incident-specific needs on a regular basis and works to fulfill proposed incident needs
- ✓ Provides technical input into the operational, planning, recovery functions coordinated by the EOC and provides advice on actual and potential incident related impacts.
- ✓ An advanced information system should be maintained at each level of hierarchy
- ✓ The information should immediately reach the Emergency Management Group who in turn through chain of command be made known to all the key personnel in the organization.

✓ An illustrative check list of who has to do what, to whom report and how to do, is required to be prepared by each sub- station, in case of emergency.

✓ An illustrative check list of the material being used during and after the disaster condition should be made.

✓ At the time of disaster the mutually cohesive actions and response of the local authorities is needed.

Remote sensing makes observation of any object from a distance and without coming into actual contact. Remote sensing can gather data much faster than ground based observation, can cover large area at one time to give a synoptic view. Remote sensing comprises Aerial Remote Sensing which is the process of recording information, such as photographs and images from sensor on aircrafts and Satellite Remote Sensing which consists of several satellite remote sensing system which can be used to integrate natural hazard assessments into development planning studies. These are: Landsat, SPOT Satellite, Satellite Radar System, Advanced Very High Resolution Radio

GIS provides a tool for effective and efficient storage and manipulation of remotely sensed data and other spatial and non-

spatial data types for both scientific management and policy oriented information. This can be used to facilitate measurement, mapping, monitoring and modeling of variety of data types related to natural phenomenon. The specific GIS application in the field of Risk Assessment is: - Hazard Mapping to show earthquake, landslides, floods or fire hazards. These maps could be created for cities, districts or even for the entire country.

The preparedness aspects of the RSAC UP include:

- ✓ To provide satellite data of the disaster vulnerable area.

- ✓ Provides digital data that can be used for the purpose of locating, assessing and monitoring of the disaster situation.

- ✓ Provides early warnings of drought/flood/cyclone and earthquake conditions.

- ✓ Preparation of seismic hazards maps in order to assess the exact nature of risks.

- ✓ flood damage assessment, flood hazard zoning and post-flood survey of rivers configuration and protection works.

- ✓ Preparation of landslide hazard zonation map which will able to provide help concerning location,-extent of the slop area likely to be affected, and rate of mass movement of the slope mass.

- ✓ The information should immediately reach the Emergency Management Group who in turn through chain of command be made known to all the key personnel in the organization.

- ✓ An illustrative check list of who has to do what is required to be prepared by each organization for its each station, in case of emergency.

- ✓ Exhaustive training of personnel's at each level of the hierarchy for dealing with the disaster situation ,working long hours under stress conditions.

- ✓ An illustrative check list of who has to do what, to whom report and how to do, is required to be prepared by each sub-station, in case of emergency.

- ✓ An illustrative check list of the material being used during and after the disaster condition shold be made.

✓ At the time of disaster the mutually cohesive actions and response of the local authorities is needed.

✓ Remote Sensing technology due to its synoptic viewing capability, repetitive & real time information in a cost effective manner gives the required information with great deal.

✓ SATELLITE COMMUNICATION

Communication technology has emerged as such a powerful tool in disseminating the information to the local level, but when this communication technology is used in conjunction with Remote Sensing & GIS. The information gets properly disseminated to the local level. Communication systems dedicated for alerting disaster managers/decision makers is most essential technological application. Communication system capable of conveying messages and data files (documents, maps, pictures) is prime requirement of disaster management, especially during relief operations. These

Systems include telephones, emails, fax, wireless and video-conferencing. A disaster resistant communication system, based on wireless and satellite technology, connecting blocks, tehsils, and districts with the state capital is the most critical facility for emergency response. In the flood affected areas, a wireless network can serve as early warming facility. Similarly geographical representation of all the villages and towns, physical landscape, and all the critical facilities through GIS has emerged as an important tool for both response & mitigation planning.

Application of GIS and Remote Sensing in various disasters are   as   follows:-

Drought

GIS and Remote Sensing can be used in drought relief management such as early warnings of drought conditions will help to plan out the strategies to organize relief work. Satellite data may be used to target potential ground water sites for taking up well-digging programmes. Satellite data provides valuable tools for

evaluating areas subject to desertification. Film transparencies, photographs and digital data can be used for the purpose of locating, assessing and monitoring deterioration of natural conditions in a given area.

Earthquake

GIS and Remote Sensing can be used for preparing seismic hazards maps in order to assess the exact nature of risks.

Floods

Satellite data can be effectively used for mapping and monitoring the flood inundated areas, flood damage assessment, flood hazard zoning and post-flood survey of rivers configuration and protection works.

Landslides

Landslide zonation map comprise a map demarcating the stretches or area of varying degree of anticipated slope stability or instability. The map has an inbuilt element of forecasting and is hence of probabilistic nature. Depending upon the methodology adopted and the comprehensiveness of the input data used, a

landslide hazard zonation map able to provide help concerning location,-extent of the slop area likely to be affected, and rate of mass   movement   of   the   slope   mass.

2. Warning and Forecasting System

An advance system of forecasting, monitoring and issuing early warnings plays the most significant role in determining whether a natural hazard will assume disastrous proportions or not. The country   has   the   following   forecasting   systems:

a. Indian Meteorological Department (IMD)

IMD provides cyclone warnings from the **Area Cyclone Warning Centers (ACWCs)** It has developed the necessary infrastructure to originate and disseminate the cyclone warnings at appropriate levels. It has made operational a satellite based communication system called Cyclone Warning Dissemination System for direct dissemination of cyclone warnings to the cyclone prone coastal areas. IMD runs operationally a Limited-area Analysis and Forecast System (LAFS), based on an Optimal Interpretation (OI) analysis and a limited area Primitive Equation (PE) model, to

provide   numerical   guidance.

b. National Remote Sensing Agency (NRSA)

Long term **drought proofing programmes** on the natural resources of the district have been greatly helped by the use of satellite data obtained by NRSA. Satellite data can be used very effectively for mapping and monitoring the flood inundated areas, flood damage assessment, flood hazard zoning and past flood survey of river configuration and protection works.

c. Seismological Observations

Seismological observations in the country are made through national network of 36 seismic stations operated by the IMD, which is the nodal agency. These stations have collected data over long periods of time.

d. Warning System for Drought

The **National Agricultural Drought Assessment and Management System (NADAMS)** has been developed by the Department of Space for the Department of Agriculture and Cooperation, and is primarily based on monitoring of vegetation

status through National Oceanic and Atmospheric Administration (NOAA) Advanced Very High Resolution (AVHR) data. The drought assessment is based on a comparative evaluation of satellite observed green vegetation cover (both area and greenness) of a district in any specific time period, with that of any similar period in previous years.

e. **Flood Forecasting**

Flood forecasts and warnings are issued by the **Central Water Commission (CWC), Ministry of Water Resources.** These are used for alerting the public and for taking appropriate measures by concerned administrative and state engineering agencies in the flood hazard mitigation. Information is gathered from the CWC's vast network of Forecasting Stations on various rivers in the country.

f. Cyclone Tracking

Information on cyclone warnings is furnished on a real-time basis to the control room set up in the Ministry of Agriculture, Government of India. High-power **Cyclone Detection Radars**

(CDRs) that are installed along the coastal belt of India have proved to be a very useful tool to the cyclone warning work. These radars can locate and track approaching Tropical Cyclones within a range of 400 km. Satellite imagery received from weather satellite is extensively used in detecting the development and movement of Tropical Cyclones over oceanic regions, particularly when they are beyond the range of the coastal radars. The existing mode of dissemination of cyclone warnings to various government officials is through high priority telegrams, telephones, telex and fax.

NGO'S

The actions carried out by NGO's before any disaster is as follows

 To carry out Public Awareness Programme

Public Awareness Programme should be conducted regularly to make the general public aware about potential hazards likely to occur in their area. Emphasis may be given to the following aspects.

- Display of information at all the suitable places in the area related to assisting agencies, their telephone numbers, etc.

- Participation of local youth organizations, voluntary organizations, educational institutions be sought to conduct educational session to make people aware about the safely measures and rescue operations in the event of a disaster.

- Community mobilization

- Ensure regular meetings of NGO coordination cell

- Working in coordination with all governmental organizations.

Actions During The Disaster

Primary agency

Department of information and public relation and planning

The following actions are taken at the time of disaster

> ➢ Activates as needed in anticipation of, or immediately following, a disaster or emergency;

> ➢ Processes information that is common to one or more operational elements and that contributes to the overall perspective of the emergency

> ➢ Coordinates activities of on-the-ground assessment personnel

➢ Serves as site of overall coordination of situation assessment operations

➢ Tasks support agencies to provide technical expertise and information necessary to develop accurate analysis of a developing or ongoing situation

➢ Contacts other organizational elements to provide daily information updates for reporting and analysis requirements.

➢ To collect, process and disseminate information concerning a potential or actual disaster or emergency; identify problems and recommend solutions; and plan and coordinate with the different supporting agencies

➢ Develop procedures and formats for information gathering and reporting

➢ All personnel required for disaster management should work under the overall supervision and guidance of district disaster manager.

➢ In response to a disaster situation or incident, emergency personnel from the affected State and the local Government should jointly assess the situation initially to determine if there is a need for response operations.

➢ Establish radio communication with emergency operation centre, Divisional secretary/District secretary,District control room and the departmental offices within the division.

➢ Notify all supporting agencies and personnel upon activation and Assign duties to support agency personnel and provide training as required.

➢ Coordinate efforts in collecting, processing, reporting and displaying essential information for inclusion.

➢ Plans for the activation of the DRC (Disaster relief camp/code) and recovery operations.

➢ Establish an information collection point and collect information.

➢ Analyze provided information and distribute with the appropriate agencies. Information should be distributed by best fastest means, such as fax.

➢ Request special information from local agencies and volunteer organizations, as necessary.

Establish control room

It is necessary to have an integrated approach at national level to monitor and meet the various situations arising out of the crisis in the power sector. It is, therefore, proposed to have a three tier controlling system as per details given below:

a. Central Control room with headquarters at Delhi.

 b. State level control room to be located at convenient place in the region/State.

c. District/Zonal level control room.

These Control Rooms will work in a very well coordinated manner. The main objectives of these control rooms will be to pool up all the possible resources to ensure smooth flow information in the country/state/area. These control rooms should have fast communication facilities for exchanging the up-to-date information. In this regard, direct hot line communication and equipment have to be provided. These Control Rooms shall have list of minimum man power required for continuous operation and maintenance of a particular utility on 24 hours basis with 2 or 3 shifts operation. A complete list of the personnel/experts at national/ regional level for the operation and maintenance of the utilities shall be maintained so that in case of emergency, the experts may be sent for quick response.

Resource requirements

Standard office machines, computers, printers, facsimile machines, charts, boards, and communications equipment.

 Internet   As   Important   Information   Tool

In the present era of electronic communication, the internet provides a useful platform for disaster mitigation communications.

Launching of a well defined web site is a very cost-effective means of making an intra-national and international presence felt. It provides a new and potentially revolutionary option for the rapid, automatic, and global dissemination of disaster information. A number of individuals and groups, including several national meteorological services, are experimenting with the Internet for real-time dissemination of weather observation, forecasts, satellite and other data. In the most critical phase of natural disasters electronic communication have provided the most effective and in some instances perhaps the only means of communication with the outside world.

Secondary agencies

Department Of Science And Technology/ Remote Sensing Application Centre Uttar Pradesh

➢ GIS can be used in carrying out search and rescue operations in a more effective manner by identifying areas that are

disasters prone and zoning them accordingly to risk magnitudes.

➢ To collect and provide information regarding the current condition of weather phenomenon with the help of scientific technology.

➢ Coordinate efforts in collecting, processing, reporting and displaying essential information for inclusion

➢ To warn regarding the approaching cyclone/heavy rainfall/wind storms and other weather phenomenon.

➢ Coordinate and prepare periodic situation reports for local officials and State government

➢ Conduct planning to identify priorities, develop approaches and devise recommended solutions for future response operations.

➢ Provides weather information and briefings to the EOC staff and

➢ Prepare paper maps for use in route alerting or other mapping needs as they occur during the disaster

NGO'S

- To work in coordination with primary and secondary agency

- Keeps the public informed about the the emergncy situation

- Checking the spread of rumours.

- Provides informaqtion regarding the disaster assistance and recovery programmes such as relief shelter, mass feeding sites, medical help, etc.

Action After Disaster

Department Of Information And Planning And Public Relation

- Continue information gathering and processing.

- Continue to prepare situation reports, as necessary. Continue to gather information, as necessary.

- Prepares situation reports as necessary.

- Continues compiling information and documentation as necessary.

➢ Reviews and revises reporting procedures and formats as necessary.

➢ Prepares, submits and tracks all documentation necessary for state reimbursement of declared disasters

➢ Assist state government in the establishment of the Disaster Recovery Center (DRC).

➢ Anticipate and plan for the support and establishment of staging areas,

➢ Assist related ESF– Long-term Community Recovery and Mitigation in their damage assessment role in determining the specific areas of the county that require Damage Assessment Teams.

➢ Ensure that records of costs incurred during the disaster are maintained.

➢ Coordinate damage assessment and other information using the recovery phase for State and/or Federal use, as appropriate.

➢ Collect and process information concerning recovery activities to include anticipating types of recovery information the EOC and other agencies will require.

Secondary Agencies

Department Of Science And Technology And Remote Sensing Application Centre Uttar Pradesh

➢ Studies the post disaster situation with the help of satellite imageries.

➢ Identify the regions which are badly affected.

➢ Spatial and temporal variation of the impact of hazard is studied.

➢ Comparative study of pre and post disaster conditons are done.

➢ Maintains and updates the status board with current information, maps, charts and computer displays.

➢ Provides weather and climate information post emergencies and disasters as required.

➢ Generates hazard specific information as related to the disaster or emergency which may help in the future planning.

➢ Collects, updates and disseminates information about the status of missions assigned to state agencies throughout the EOC activation process.

➢ Collects and updates current and potential incident-specific needs on a regular basis and works to fulfill proposed incident needs.

➢ Provides technical input into the operational, planning, recovery functions coordinated by the EOC and provides advice on actual and potential incident related impacts.

Provide information concerning damage to roads and the infrastructure, in a timely manner to the disaster relief centre or point of contact.

Disaster or other significant event will be of such severity and magnitude as to require the assistance to supplement State and local efforts to save lives and protect property. Information and

Planning will support initial assessment of developing situations and will provide timely and appropriate information

Information and Planning collects, analyzes, processes, and disseminates information about a actual disaster or emergency to facilitate the overall activities of the state Government in providing assistance to one or more affected districts. It fulfills this mission to supports planning and decision making at both the state and district operations levels. The Information and Planning coordinates overall information and planning activities in the EOC (emergency operation centre) in support of emergency operations and provides disaster information for release through the various media outlets to citizens in the county.

Annexures

To be filled in by OFFICER-IN-CHARGE and submitted to district control room and the

Action Taken	Yes/No	Details/Remark
• Radio communications established with • Commissioner Disaster Management • Divisional Commissioner • District control room • And departmental offices within the division		
An officer appointed as Officer-in-charge-power supply		
Standby arrangements for temporary electric supply or generators made for • Hospitals • Jal Sansthan • Collectorate • Police Station • P&T • Transit camp • SOC • Feeding centers • Relief camp • Godown for storing relief material • Access road		
Each depot provided with the disaster management tool kit		
Inspection , and repair if needed, carried out for • High tension lines • Tower • Substation • Transformer • Insulators • Poles		
Clearing of damaged poles carried out		
Salvage of conductors and insulators done		
Emergency accommodation undertaken for staff from outside the area		
An itemized damage assessment carried out		

department head)