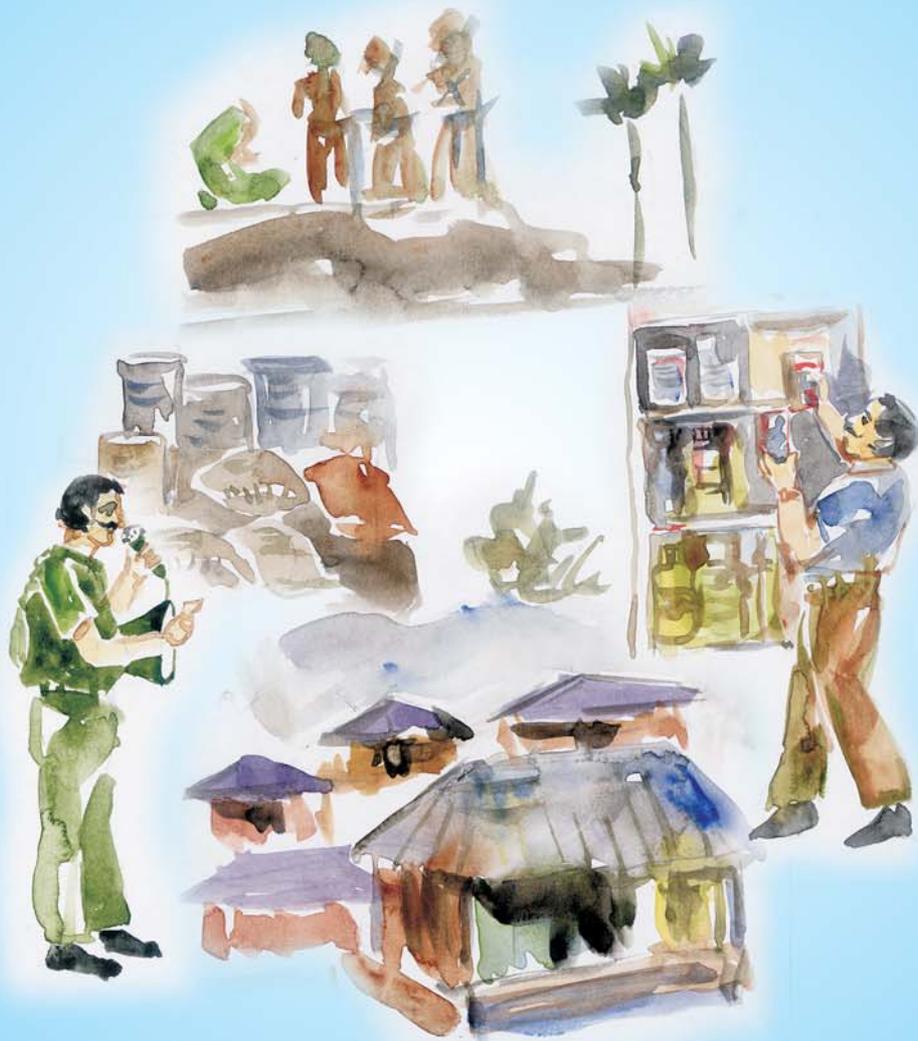


Series: D.3

# CRISIS MANAGEMENT PROCEDURE TRAINERS' MANUAL



GoI-UNDP Disaster Risk Management Programme

Series: D.3

# CRISIS MANAGEMENT PROCEDURE (Trainers Manual)

**GoI-UNDP Disaster Risk Management Programme**

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## **CHAPTER-I**

Hazards are a common phenomenon all over the world. But it becomes a visible one with a large-scale devastation in the third world countries. About 90% of natural disasters and 90% of disaster-related deaths and losses are seen only in the developing nations. In Indian scenario, the coastal states are the most disaster-prone areas in which every year on an average 1241 lives are lost. A report says, in our country every year about 6% of the total population is directly affected by the disasters. This report also reveals that in our country:

57% regions are earthquake prone.

11.2% regions are flood-prone (in 1998, 37% region were inundated with flood water)

Besides these, two major hazards, the country also experienced other minor and major hazards.

A survey report says, Orissa one is the poorest states in the Indian Union. Out of the worst disaster-prone states of India, Orissa is one. Even though the state is full of rich mineral resources regular visit of disasters to this state has worsen the state's social, political and economic position.

### **HISTORICAL BACKGROUND OF INDIAN DISASTERS:**

The unique geo-climate conditions of the Indian sub-continent make this region among the most vulnerable to natural disasters in the world. Disasters occur with amazing and frequency and while the community at large has adapted itself to these regular occurrences, the economic and social costs continue to mount year after year.

The Indian sub-continent is highly vulnerable to Drought, Floods, Cyclones and Earthquakes, though Landslides, avalanche and Bush fire too.

Frequently occur in the Himalayan region of northern India. Of the 35 States\Union Territories in the country, 22 are disaster prone.

Among all the disasters that occur in the country, River Floods are the most frequent and often the most devastating. The cause for flood is chiefly the peculiarities of rainfall in the country, out of the total annual rainfall in the country, 75% is concentrated over short monsoon season of three to four months. As a result there is a heavy discharge from the rivers during this period causing widespread floods. As much as 40 million hectare of land in the country has been identified as flood prone an average of 18.6 million hectare of land is flooded annually. Floods are caused mainly in the Ganga-Brahmaputra –Meghna basin that carries 40% of the nation's total river flow.

Earthquakes are considered to be one of the most dangerous and destructive natural hazards. The impact of this phenomenon is sudden with little or no warning, making it just impossible to predict or make preparations against damages and collapses of buildings and other man-made structures. About 50-60% of total area of the country is vulnerable to seismic activity of varying intensities.

Drought is a perennial feature in some states of India. In fact drought is a significant environmental problem too as it is caused by less than average rainfall over a long period of time. In India about 68% of total sown area of the country is drought prone. Most of the drought prone areas identified by Govt. of India lie in the arid, semi arid and sub-humid areas of the country.

India has a very long cost line of 8041 km, which is exposed to tropical cyclone arising in the bay of the Bengal and Arabian Sea. The Indian Ocean is one of the six major cyclones –prone regions of the world. In India cyclones occur usually between April and May, and also between October and December. The eastern cost line is more prone on to cyclones as about 80% of the total cyclones generated in the region hit there.

**Some of the major events of natural disasters in recent past:**

**Major Disasters in India :**

Disasters	Year	Events and impact
<b>FLOOD</b>	Sept.1982	Flood in Orissa- breakdown of Dalei Ghai
	1993	Punjab flood- 359 lives lost
	May-Oct 1994	Floods in Kerala
	Aug-00	Flood in West Bengal
	Jul-02	Flood in Andhra Pradesh
	Jul-01	Orissa Flood
	Jul-02	Flood in Assam, Bihar and West Bengal
<b>CYCLONE</b>	May-90	Andhra Pradesh 962 lives lost
	Dec. 1993	Tamilnadu 61 lives lost
	Dec. 1996	Andhra Pradesh 971 lives lost
	Jun-98	Gujarat - 3500 lives lost
	Oct-99	Super cyclone Orissa 10000 [ appr.] lives lost
<b>EARTHQUAKE</b>	Oct.1991	Utter Kashi, 2000 lives lost
	Sep-93	Latur 9475 lives lost
	Mar-95	Chamoli 100 lives lost
	May-97	Jabalpur 39 lives lost
	Jan-01	Gujarat earthquake- more than 20000 lives lost
<b>HEAT WAVE</b>	May-June 1995	Utter Pradesh - 566 lives lost
	May - June 1998	Orissa- 2000 lives lost
	May - June 1999	Orissa- 20 lives lost
<b>CLOUD BRUST</b>	Aug-02	Uttaranchal
<b>DROUGHT</b>	1994-95	Drought in AP, Gujarat, Maharashtra, Karnataka, Rajasthan and Orissa
	1996-97	Drought in Gujarat, Madhya Pradesh, Maharashtra, and Orissa
	2000-01	Drought in Gujarat, Madhya Pradesh, Maharashtra, Chhattisgarh and Orissa
	2002	Drought in Gujarat, AP, Maharashtra, Rajasthan, Chhattisgarh, MP and Orissa

## CHAPTER-II

### **Introduction to Crisis Management:**

Disaster may come at any time at any moment and in any form. This may be a natural or man-made disaster. Because of the geographical location of the country, the people usually face major disasters like flood, cyclone, earthquake, drought, landslides and sunstroke. The analyse of the past years record shows that, in India, between 1988 and 1997 disasters killed 5,116 people and affected 24.79 million every year. As per the disaster situation of India, 11.2 % of areas are flood prone but in 1998, floods inundated 37 %. Two major disasters that India has experienced in the recent past are Super cyclone in Orissa (1999) and earthquake in Gujarat (2001). These two major disasters have very clearly illustrated the fact that we need to have hazard-specific response and preparedness plans. Because of frequent advancement of these disasters, the common mass has no social and economical psychological strength to face the forthcoming natural disasters.

The outcome of any disaster is crisis situation, which arises because of the sudden disruption in the socio-economic system and communication network. Crisis is a situation where there is a huge gap between supply and demand. In the connection of any disaster the demand to save the life and property is badly felt but the supply of manpower, material support are inadequate. The crisis may be political, financial, cultural or emotional. Here comes the necessity of crisis management.

### **Necessity of Crisis Management**

As we discussed earlier that crisis is the next stage of any disaster. And disaster is that hazard which causes massive loss of life and property. In simple terms Disaster means:

$$\text{Disaster} = \text{Vulnerability} + \text{Hazard}$$

↓  
(People + Condition + Place + Time + Event)

Vulnerability depends upon the following factors:

- **People:** Population of the area, the vulnerable groups such as old people, patients, pregnant women, children, physically handicapped persons etc.
- **Condition:** Social and financial condition of the people.
- **Place:** Its geographical location, physical set up and distance from the hazardous source like river, sea etc.
- **Time:** This is also an important factor. For example, if hazard strikes during nighttimes then the casualty will be more.
- **Event:** The type and intensity of the event/hazard.

The vulnerability can be of following types:

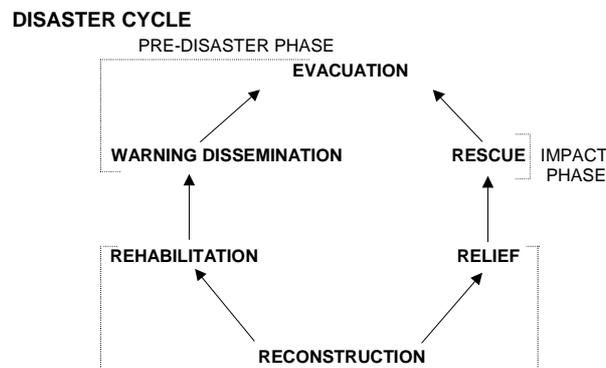
- a) **Physical Vulnerability:** Includes buildings, infrastructure, transport, telecommunication, public utility services, water and sanitation, essential public services (such as health, public administration etc.).
- b) **Economic Vulnerability:** It can be direct or indirect loss of property.

c) **Social Vulnerability:** Includes poverty, limitation of resources, illiteracy and lack of awareness etc.

All hazards cannot be checked. Rather we have to take measures to minimize or to avoid disasters with massive loss of life and property by reducing or giving protection to the vulnerable groups. This is the task of the crisis management group.

### How to proceed for crisis management?

- To carry out any activity for crisis management, analysis of the disaster cycle is to be done first.
- Community, block, district and state level committees and taskforce should be made.
- The tasks to be divided among different taskforces and committees.
- Ensure that there should not be any overlapping of duties.
- Maintain proper coordination among different taskforces, committees, departments and organization.
- Periodic evaluation.



### POST-DISASTER PHASE

The crisis management begins from the warning dissemination stage to the distribution of relief materials. It also includes the planning for the future initiatives after analysing the present situation.

#### Aims and Objectives of Disaster Management

To avoid the massive loss of life and property, we have to take measures under the following plans:

- ❑ Plan for Rehabilitation and livelihood restoration.
- ❑ Plan to protect and maintain roads, bridges, embankment and forests to avoid disaster crisis.
- ❑ Plan for construction and maintenance of irrigation canals, afforestation etc.
- ❑ Rehabilitation work and economic development programs through the formation of self-help groups, and community based teams.

#### Objectives behind these Planning

- ❑ To train the villagers to remain prepared to face the forthcoming disasters and protect themselves and the properties.
- ❑ To train the villagers to avoid the unexpected dangers and planning for their future.
- ❑ To minimize the casualty rate and loss of property.
- ❑ To decide rehabilitation, reconstruction and relief management in post-disaster period.

### **CHAPTER-III**

#### **WHAT IS DISASTER ?**

In simple terms, when a hazard causes massive loss of life and property, it is referred to as a **Disaster**. It is a serious disruption of the functioning of a society causing widespread human, material or environmental losses. The loss is such widespread that the existing available local resources cannot fulfill the damage or losses caused by disaster.

Some of the general consequences of disasters are :

1. Injury and sufferings.
2. Disease.
3. Starvation Deaths.
4. Damage and loss of property.
5. Disruption of normal life or activities.
6. Rise of anti-social Activity.
7. Affects the livelihood of most people.
8. Influence on the basic needs like food, cloth, shelter, health and education and many more.

#### **IMPACT OF DISASTER**

The impact of a disaster varies from place to place. It also depends upon the intensity, habitation, time, place and so on. It not only affects the life and property, but also affects their occupation or livelihood, culture etc which can be summarized under the following headings:

- Psychological impact
- Economic impact
- Social impact
- Political impact
- Cultural impact

#### **Psychological Impact**

- Women and children lose their mental balance.
- The person who loses his/her family member(s), wealth, and property; suffers a lot psychologically.

#### **Economical Impact**

- Destruction of houses and household materials.
- Destruction of livestock like cattle, goat, sheep etc.
- Destruction of cultivated land.

- ❑ Loss of cash crops like coconut, mango, cashew nut, beetle nut etc.
- ❑ Loss of stored food and seeds
- ❑ Stalemate/deadlock of wells and tube wells.
- ❑ Traditional occupations get hampered.
- ❑ Loss of occupational equipments like net, country boat, pump set etc.
- ❑ Loss of Valuable things and ornaments.
- ❑ Loss of necessary documents like land records, bank documents, passbook, records related to job, educational certificates, ration cards etc.
- ❑ Price hike of essential commodities.
- ❑ Business transactions are hampered.
- ❑ Destruction of communication facility.
- ❑ Disruption in basic services like electricity, water supply etc.

### **Social Impact**

- ❑ Break down of joint-family system.
- ❑ Educational system hampered due to destructions of school and college buildings.
- ❑ Destruction of various social organizations like police station, hospitals, post office, recreation centre, Bhagbat tungi / community temple, Panchayat office, clubs and library etc.
- ❑ Labourers are adversely affected, no work or employment.
- ❑ Numbers of Child labourer is increased.
- ❑ Helpless, widow, old people are among the worst affected.
- ❑ Increase of loan load.
- ❑ Sale of cattle, goat and other households.
- ❑ Could not avail educational and health facilities.
- ❑ The poor-rich gap increases.
- ❑ Village welfare programmes are influenced negatively due to casteism.
- ❑ Destruction of roads, bridges, and buildings of social institutions.
- ❑ Shift to other states as migrant labourer.

### **Cultural impact**

- ❑ Destruction of traditional and cultural practices.
- ❑ Destruction of religious institutions like Matha, Temple, Girja, Church etc.
- ❑ Destruction of cultural heritage like Pala, Daskathia, Bhajan and Kirtan etc.
- ❑ Destruction of instruments used in cultural programme.
- ❑ Obstruction in the festival celebration.
- ❑ Deterioration of art and craft.
- ❑ Obstruction in the celebrations like marriage and other social functions etc

### **Health impact**

- ❑ Possible out break of epidemics like cholera, diarrhoea and other health hazards.
- ❑ Disruption in health services.
- ❑ The domestic animals may also get affected and if proper care is not taken then they may die.
- ❑ Many deaths occur due to snakebite.

### **Environmental impact**

- ❑ Water pollution.
- ❑ Salinity of soil increases.
- ❑ Destruction of Prawn ghery.
- ❑ Deforestation.
- ❑ Destruction of saline forest.
- ❑ Soil erosion.
- ❑ Pollution of atmosphere.
- ❑ Death of dogs, eagle and other animal, etc who practically keep the environment clean.

### **TYPES OF DISASTER**

Mainly, disaster is of two types i.e. natural disaster and man-made disaster. On the basis of loss valuation, the natural and man-made disaster can be divided into two parts

- 1- Major Natural Disaster.
- 2- Minor Natural Disaster.
- 3- Major man-made Disaster.
- 4- Minor man-made Disaster.

#### **1. Major Natural Disaster**

- Flood
- Cyclone
- Drought
- Earthquake
- Sunstroke.

#### **2. Minor Natural Disaster**

- Cold wave.
- Landslide.
- Thunderstorm.

#### **3. Major man-made Disaster**

- Set a fire.
- Epidemics.
- Loss of Saline forest.
- Pollution due to prawn cultivation.
- Chemical pollution.

#### 4. Minor man-made Disaster

- Road accidents & train accidents.
- Accident during festival.
- Food poisoning.
- Industrial Accidents.
- Acid rain.
- Riot.
- Environmental pollution.
- War.

#### What is Crisis Management?

A crisis is a temporary state of emotional turmoil and disorganization, which occurs due to the outbreak of an event or disaster. And whatever we do during a disaster or emergency period to check or control the situation is known as **Crisis Management**. In our analysis, we have taken four types of disasters, which are common in the state Orissa. They are as follows:

1. Flood
2. Cyclone
3. Earthquake
4. Drought
5. Heat wave or sunstroke

#### 1. FLOOD

The country receives an annual precipitation of 400 million –hectare metres. Of the annual rainfall, 75% is received during monsoon that is June to September and as a result, almost all the rivers carry heavy discharge during this period. The flood hazard is compounded by the problems of sediment deposition, drainage congestion and synchronisation of river floods with sea tides in the coastal plains. The predominant flood regions of India are Brahmaputra river region, Ganga river region, North West river region and Central and Deccan region.

The Brahmaputra river region mostly affects the entire Assam, north eastern states and partially West Bengal. Uttar Pradesh, Bihar, West Bengal and few other areas are fully affected by Ganga river basin. Andhra Pradesh, Gujarat, Tamil Nadu and Karnataka are mostly affected by the central and deccan river region. In Orissa damage due to floods is caused by the Mahanadi, the Brahmani and the Baitarani, which have a common delta, where the floodwaters intermingle and cause considerable havoc.

Some of the causes of flood are:

1. Heavy precipitation.
2. Rise in riverbed.
3. Deforestation.
4. Ingress of saline water due to Cyclone.
5. Silting of delta area.
6. Meandering flow of river.

7. Inadequate drainage system.
8. Obstruction in free flow of river.
9. Earthquakes and Landslide.
10. Sudden flow of water due to heavy rainfall in the upper catchments area.

A flood may leads to the **following crisis** which are enumerated below:

1. Damage to crop.
2. Loss of life.
3. Spread of epidemics.
4. Damage of infrastructure.
5. Damage of property.
6. The gap between the rich and poor widens.
7. Damage of livestock.
8. Loss of soil fertility.
9. Loss of vegetation covers leading to further soil erosion.
10. Disruption in the governmental process and systems.
11. Loss to national, state and local economy.
12. Loss of essential services.

## **2. CYCLONE**

When air of a particular region becomes hot, it rises up; thus creating a low-pressure zone. To fill up this region air from the surrounding zone rushes into that site. The low-pressure situation in the deep ocean results in rainfall and cyclone in the surrounding region.

During the cyclone, wind blows with a speed of 120 km/hr to 150 km/hr. But when it reaches to 250-300 km/hr or more, then devastation reaches to peak. When a low pressure centers at 20-25 k.m. off the seashore then the sea water along with high tides at the height of 3-12 m ingresses the coastal areas up to 25-30 k.m.. This also brings with heavy rain, wind, and thunderstorm. Mostly it happens in the coastal districts.

### **Wind velocity during cyclone**

<b>Wind velocity</b>	<b>Name</b>	<b>Degree of Impact</b>
Less than 100 km/hr	Equatorial low pressure	Less
100 to 200 km/hr	Cyclone	Average. Loss of vegetation. and Disruption in the normal life.
More than 200 km/hr	Super cyclone	Unimaginable damage occurs.

**A cyclone may result in following crises :**

- Blows up the asbestos, and thatched roofs.
- Uproots the trees.
- Bent electric and telephone poles.
- Ingress of saline water may cause the loss of many life and property in the coastal areas and so on.

### **3. DROUGHT**

Drought is a temporary reduction in water or moisture availability significantly below the normal or expected amount for a specific period. This condition occurs either due to inadequacy of rainfall, or lack of irrigation facilities or deficient availability of water for meeting the normal crop requirements in the context of agro-climatic conditions prevailing in any particular areas. If rainfall amount goes down continuously and temperature rises up in any region then it leads to drought condition. Apart from this, less erratic rainfall, lack of irrigation facilities and water holding capacity of soil are the other causes of drought and yield loss. In simple terms, shortage of rainfall or water continuously for a long period is known as **Drought**. Usually it is very common in the Rajasthan, Gujarat, Orissa, Madhya Pradesh, and Chhattisgarh.

There are many causes of drought. Some of the important causes are jotted down here:

- Deforestation.
- Low production.
- Heavy and continuous use of fertilizers.

**It results in following crises:**

- Shortage of drinking water.
- Loss of vegetation due to the dryness in water bodies.
- If drought is not managed properly, it could turn to famine.

There are three types of Drought:

- A. Hydrological drought:** caused by lack of water resources or reduction of existing water sources like stream flow, ground water and underground water in a specified time period.
- B. Meteorological drought:** caused by lack of rainfall or reduction in rainfall in a specified time period.
- C. Agricultural drought:** caused by very less of crop production, which gets worsened due to hydrological and meteorological drought.

There are many factors that lead to drought. Some of them are:

- 1. Irregularity of rain:** The average rainfall of India is 1200 mm and as such its water resources are enormous and are well comparable to any other country but the problem is lying in its distribution. Some region gets very high rainfall and some region receives low rainfall due to erratic behaviour of the rainfall. The medium rainfall region is most vulnerable to drought conditions. Consequently, 68% of the country areas is drought prone area.
- 2. Crop loss due to flood:** In India, major segment of the population depend solely upon cultivation for their livelihood. So, the ingress of flood causing crop loss brings drought like situation.
- 3. Lack of Irrigation:** In most of the states, very less percentage of agricultural lands are irrigated. Out of which a few irrigation canals are in very bad condition. So, this may also be one of the reasons for drought.

**Besides these, the other factors are:**

- ❑ Excessive use of chemical fertilizers and pesticides leading to decrease of soil fertility, reduce the water holding capacity of soil etc.
- ❑ Large-scale deforestation leads to decrease in rainfall rate, soil erosion leading to loss of soil fertility and consequently leading to drought.
- ❑ Misuse of water resources in our country specially ground water.
- ❑ Absence of an efficient water distribution system.
- ❑ Absence of proper recharge system for ground water resources.
- ❑ Population explosion and the ever-escalating demand for water.
- ❑ Absence of farmer-friendly water schemes.
- ❑ Importance on capital-intensive farming; instead of drought-resistant cropping patterns.
- ❑ Lack of awareness regarding alternative cropping pattern, soil conservation and various mulching techniques.

**4. SUNSTROKE**

When the atmospheric temperature rises up abnormally in a region leading to the heavy loss of water from the body due to heavy perspiration and ceasing the normal body mechanism is called **Sunstroke**. This may be due to the ecological imbalance or some other factor. People suffer a lot due to drinking water problem, earth splits due to higher temperature and dryness ultimately it leads to yield loss. Sometimes it becomes fatal.

**Effects:**

- ❑ Blowing of hot wind (Loo).
- ❑ Profuse sweating leads to dehydration
- ❑ It becomes hard to work under scorching sun.
- ❑ Daily wage labourers, old people, school-going children and women are the most vulnerable group.

## CHAPTER-IV

### **PREPAREDNESS FOR CRISIS AND ITS MANAGEMENT**

From the community level to the Block level, the crisis preparedness and management procedures may be briefly presented as below:

#### **COMMUNITY CONTINGENCY PLAN**

##### **a) What is a community contingency plan?**

A community contingency plan is a list of activities; a village/community decides to follow to prevent loss of life, livelihoods and property from the hazards. It also identifies well in advance, actions to be taken by individuals in the community so that each one is aware of his/her responsibilities when an emergency warning is received.

##### **b) Who makes the plan?**

The members from all the three levels perform this work

**The community:** A community contingency plan, as the name suggests, has to be made by the inhabitants of the village itself, irrespective of class, caste, sex & occupation, including community based organizations like youth clubs, Mahila Mandals, SHGs etc

**NGOs & Govt. Officials:** To carry forward the process of discussions and to guide the community towards drawing a workable plan, the involvement of NGO volunteers, community leaders, Government agencies and the elected people's representatives. They possess the necessary authority and skills to motivate the community, conduct these sessions and ensure participatory decision-making.

#### **THE PLAN**

The preparation of a community contingency plan involves the following 5 stages:

<b><u>Stage</u></b>	<b><u>What</u></b>	<b><u>Who</u></b>	<b><u>How</u></b>
I	Review and Analysis	Community	Group Discussion
II	Situation Analysis	Community	Group Discussion, Social Mapping
III	Hazard Mapping	Community	Social Mapping
IV	Risk Mapping	Community	Social Mapping
V	Opportunity Mapping	Community	Social Mapping

#### **STAGE I      REVIEW AND ANALYSIS**

Discussion on what happened in the village during the last disaster (esp. flood, cyclone drought).

The community will discuss their experience in the last disaster that hit the village. For example, incase of cyclone and flood, the content of the discussion should be on :

- ❑ What happened before, during and after the disaster in terms of warning
- ❑ Extent of severity and damage
- ❑ The nature and extent of self-help etc.

Likewise, the community has to decide, the different ways through which the village can be better prepared to respond to any emergency.

**STAGE II: ANALYSIS OF THE SITUATION**

(Demographic Description of the village)

The participants which include community, local youth volunteers, people's representatives and person from Government and non-government organizations/institutions draw a map of the village identifying the following characteristics.

(a) Mark on the map the geography and topography of the village, for e.g., Physical location and demographic details of the village and its surroundings. Updated revenue map of the village can be used as a reference during the exercise

(B) Mark on the map the habitations in the village and where they are located, for e.g. Number of houses - Thatched, tiled, pucca houses.

(C) Make a list of the population

- Number of families - men, women, children, castes, the disabled, pregnant women, mothers, so on.
- Number of BPL & APL families.

(D) Mark on the map the natural resources in the village. For e.g.

- Lands and fields
- Forests / Trees
- Pastureland
- Tank & ponds / Tube wells / well

(E) Make a list of various livelihoods and assets of the community. For e.g.

- Boats and fishing crafts.
- Nets.
- Irrigation facilities, agricultural implements.
- Food grain stores and other inventories.
- Different livelihoods practiced in the village. Mention their numbers.

(F) Mark the map with existing safe and risk prone infrastructure in the village and where they are located (for flood & Cyclone prone Area). For e.g.

- Cyclone / Flood shelters if any.
- Safe areas and buildings
- Any community building that can be used as a shelter during disaster.
- Drinking water facilities
- Dispensaries or primary healthcare units
- Risk-prone embankments and safe embankments
- Telephone.
- Post office, police outposts, and other such structures.

This information is to be put on a map and displayed for the session is important for situational analysis because the following stages to contingency planning depend on the information listed here.

Make a description of the village with the participation of people from all sectors such as local volunteers, youth, women, ward member, Sarpanch, elderly persons etc. In the map identify the following characteristics:

- Geographical feature
- Mark on the map the habitations in the village and where they are located.
- Make a list of the population
- Mark on the map the natural resources of the village
- Make a list of various livelihoods and assets of the community.
- Mark on the map existing safe and risk-prone infrastructure in the village and their whereabouts (for e.g., cyclone shelter, safe areas and buildings, drinking water sources, health care centres, risk-prone as well as weak embankments, power installations, telephone facility etc.).

### **STAGE-III: HAZARD MAPPING**

Listing out damage causing agents.

#### **a) Flood Hazards:**

- Mark on the map areas near riverbanks, canal banks, or the sea facing side of the village, which is more prone to flooding.
- Electricity tower, power transmission line and other infrastructure installations.

#### **b) Wind Hazards:**

- Mark on the map weak structures vulnerable to high-speed winds.
- Hut, thatched houses and tiles or asbestos-roofed houses.
- Plantations.
- Electricity and telephone towers etc

#### **c) Rain Hazards:**

- Mark on the map sloppy lands without any green cover that are most likely to get eroded.
- Mark nearby tanks and ponds, which may flood fields and submerge houses.

### **STAGE-IV: RISK MAPPING**

Assess who is at risk and what is at risk (i.e. identify vulnerable people and areas)

### **STAGE-V: OPPORTUNITY MAPPING**

Find out the ways to reduce the risk. This is to be done in the community in presence of the selected representatives from the village, government and non-government officials and experts.

### **BLOCK LEVEL DISASTER MANAGEMENT PLAN**

- 1) Block profile
- 2) Identification of major disaster and disaster prone areas in the block.
- 3) Risk assessment and vulnerable analysis.
- 4) Addresses of different authorities, institutions and individuals.
- 5) Inventory of resources covering warning system, rescue and evacuation equipments.

- 6) Establishment of an effective communication network.
- 7) Improvement Healthcare facilities in terms of manpower (Health workers etc), medicines and medical equipments.
- 8) Improvement agricultural practice and cropping pattern.
- 9) Promotion of villager-friendly area-based cottage and small-scale industries.
- 10) Identification of local NGOs, CBOs, SHGs, Youth Clubs and other existing institutions for their role identification.

### **PREPAREDNESS PLAN**

- Preparedness starts from:**
- 1) Household preparedness
  - 2) Village preparedness
  - 3) G.P preparedness
  - 4) Block preparedness

#### **1) Household preparedness**

##### **Do's**

- a. Check your house, repair doors and windows, wherever necessary
- b. Keep a lantern filled with kerosene, flashlight with new dry cells.
- c. Make sure that your radio is functioning.
- d. Keep your radio set on, and listen to the latest weather forecasts and disseminate the information to others.
- e. If you are living in a low land area then shift to the safer places.
- f. Be alert for high water in areas where streams or rivers may flow due to heavy rain
- g. Get extra foods stored mainly dry food, which can be taken without cooking.
- h. When you are moving to a shelter, take your valuable articles to upper floor or tie it to the roof, which cannot be taken.
- i. Make provisions for children and old people requiring special diets.
- j. Be calm. Your ability to meet emergency will inspire and help others. Stay in the shelter, as long as you are informed to be.
- k. While in the shelter, follow the instructions of personnel-in-charge.

##### **Don'ts**

- a. Do not keep loose objects like cans or any other implements, which may likely to cause harm during strong winds.
- b. Do not spread rumours so also don't listen them. Only official version of the warning may be listened through radio, TV. etc.
- c. Do not stay in your house when advised to vacate by authorities especially when your house is located in a low-lying areas. You may run the risk of being marooned.
- d. Do not venture out, if the weather suddenly clears during a storm as indicated by lull in the wind and rain. Remember, strong wind may return equally suddenly from the opposite direction with even greater violence. This happens when the eye of the storm passes over your area.
- e. Don't come in contact with any loose wires hanging from the poles to avoid electrocution.

**DRILLS**

1) Keep safety equipments ready. For e.g. tube, ropes, small boats etc.

**2) Village Preparedness**

- Resources and vulnerability mapping will help us to chalk out the weak points of the village.
- Formation of village volunteers groups.
- Task distribution.
- Mock drills.

**3) Gram Panchayat Preparedness**

- Resource Mapping
- Identification of vulnerable hamlets, village mapping.
- Formation of G.P. Task force /Committee.
- Early warning disseminations.
- Structural measures for e.g. storage, stock piling etc.
- Road/ Communication.

**4) Block Preparedness**

- Formation of Block task force.
- Early warning disseminations.
- Task distribution.
- Structural measures - storage, stock piling etc.
- Road/ Communication.
- Networking with NSS and Youth Clubs etc.
- Civil defence, Home Guards, Village Volunteers.

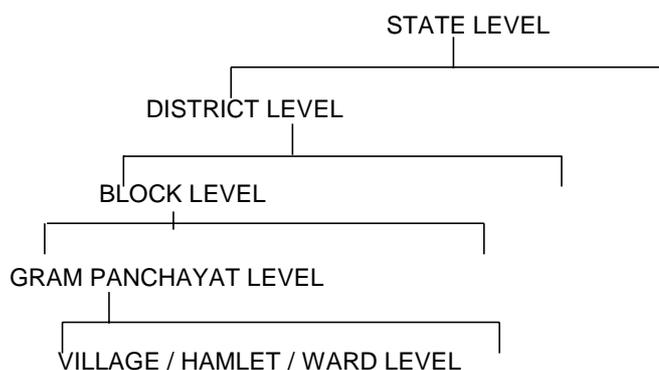
**CRISIS MANAGEMENT TEAMS**

The crisis demands concerted and organized efforts to effectively save the lives and properties as much as possible. For this purpose, there should be several teams to deal with any crisis resulting from disaster.

Following table shows the names of different teams and their period of intervention:

Name of the Team	Phase of disaster and responsibility/Duty		
	Before	During	After
Warning dissemination Team	✓		
Shelter Management Team	✓	✓	✓
Evacuation and rescue team	✓	✓	
First Aid and health team		✓	✓
Sanitation and carcass disposal Team			✓
Counselling Team			✓
Damage assessment Team			✓
Team for collection, storage, distribution of relief materials			✓

## CHAPTER-V



LEVELS	WHO ARE INVOLVED
State Level	Dept. of Revenue, Agriculture and forest, Animal Husbandry, Health, Home Dept., Rural development, Public Works Dept., State water supply and sewerage board, Electricity board, Meteorological dept., Regional Research Laboratory, Geological survey of India etc.
District Level	Collector, Related government departments and their heads.
Block Level	BDO, related Government officials and departments.
Gram Panchayat and Village Level	Disaster management team, CBOs, Youth clubs, Mahila Mandals etc.

### STATE LEVEL

In a welfare state, government has assumed the responsibilities of rendering relief to the people affected by a natural calamity. In such a state, the entire government machinery is switched on to render relief to the people in distress.

The Board of revenue and revenue department coordinate the work of all the government departments in regard to relief operation. The government departments associated with relief operation and their responsibility are described in brief below:

#### 1. **Agricultural Department:**

- Supply of seeds, fertilizers, pesticides, etc at a subsidized rate.
- Credit facilities for agricultural operations including purchasing bullock, pumps etc.
- Submission of periodical crop statistics.
- Collection of statistics of damage and restoration work etc.

2. **Panchayati Raj Department and Women and child development department:**
  - Organizing employment-oriented labour-intensive works including “food-for-work” schemes.
  - Drinking water supply programme.
  - Collection of statistics of damage or loss.
  - Restoration works etc.
3. **Health and family welfare Department:**
  - Ensure the provision of Health measures (both preventive and curative).
  - Formation of Health squads in case of necessity.
  - Prevention of epidemics.
  - Disinfectification of wells and other drinking water sources.
  - Special healthcare of children, old people etc.
4. **Mass Education Department:**
  - Restoration of normalcy in the educational institutions of affected areas.
  - Measures of relief to students and educational institutions in the affected areas.
  - Mobilizing student volunteer force when needed etc.
5. **Forest and Environmental Department:**
  - Afforestation programme.
  - Supply of forest materials for housing
  - Works on forest roads, other employment programmes etc.
6. **Animal Husbandry Department:**
  - Veterinary measures (both preventive and curative).
  - Provision of fodder, cattle food.
  - Mobile health unit for cattle etc.
7. **Home Department:**
  - Maintenance of Law and order at the time of distress.
  - Provision of police help for protection of weak points in embankments and for transport of relief goods, utilizing Home guards for relief measures.
  - Installation of wireless stations etc.
8. **Water resource Department:**
  - Energizing lift irrigation points.
  - Supply of pump sets to cultivators.
  - Watching over weak points in rivers and embankments.
  - Long-term measures for harnessing river system for irrigation etc.
10. **Rural development Department:**
  - Undertaking river irrigation works in large scale.
  - Village road programme through which temporary employment opportunities can be provided to the villagers.

**11. Food and consumer welfare Department:**

- Taking steps for opening of fair-price shop, retail sale centre in affected areas with adequate stock of foodstuff.
- Supply of foodstuff for relief operation.

**12. Tribal welfare Department:**

- Ensuring necessary drinking water supply.
- Labour employment programmes for tribal people.
- Establishment of Sebashram and Ashram schools etc.

**13. Housing and urban welfare Department:**

- Control of relief work in urban areas.
- Water supply at time of scarcity.
- Checking construction of illegal buildings.

**14. Revenue Department:**

- For operating relief housing schemes under taken due to heavy damages on account of flood or cyclone.
- Financing calamity relief fund and those under taken voluntary organizations, submitting reports etc.

**17. Other Departments:**

The heads of other different government departments responsible for relief measures within their respective jurisdiction are subject to overall control of the concern department of government.

**DISTRICT LEVEL**

At the district level, collector and sub-collectors at sub-divisional level basically handle the crises situations along with district disaster management committee and team.

1. Collectors: Collectors are responsible for relief operation in their districts and to coordinate the relief activities of district level officers of different dept.
2. Sub-collectors: Sub-collectors are responsible for all relief operations in the sub division and have to coordinate and supervise the work of relief officers. Tahasildars and the BDO's.

**BLOCK LEVEL**

The block is the unit of relief organization and the BDOs shall be the in-charge of the unit, which depends on the degree of distress. Block disaster management committee is also supporting BDO in discharging the duty efficiently. Tahasildars and Additional Tahasildars are also assist in his works.

**GRAM PANCHAYAT AND VILLAGE LEVEL**

Gram Panchayat and Village level disaster management committees are responsible for managing the crisis and if required they may take the help of existing committees in their locality like Mahila Mandals, youth clubs, CBOs, Local NGOs etc.

**ASSOCIATION OF PEOPLE'S REPRESENTATIVE IN RELIEF ADMINISTRATION:**

In this regard government has to form committees at different levels.

**A. STATE LEVEL COMMITTEE ON NATURAL CALAMITIES:**

In this, some of the MLAs and MPs have to be taken in as member. State Steering Committee for disaster risk management also involved in this process.

**Functions of this committee :**

1. To advice government regarding precautionary measure to be taken in respect of flood, drought and other natural calamities.

1. To assess the situation arising out of such calamities.

3. To advice the government on relief matters. To recommend the government about:

- The nature and quantum of relief

- The policy to be adopted in giving such relief to the affected areas.

**B DISTRICT LEVEL DISASTER MANAGEMENT COMMITTEE:**

In this, MLAs and MPs of the respective districts have to be taken in as members.

Functions :

1. To advise on precautionary measures to be taken in flood, drought and other natural calamities.

2. To assess the situation arising out of such calamities.

3. To advise on appropriate relief measure and location of relief works.

**C. BLOCK, GRAM PANCHAYATS AND VILLAGE LEVEL DISASTER MANAGEMENT COMMITTEE :**

In which BDOs will be the head and the Sarpanch will be the member.

Function :

1- To look after proper implementation of the advised precautionary measures with regard to flood, drought and other calamities.

2- To assess the situation arising out of such calamities.

3- To put forward the basic need required to meet the natural calamities.

4- To collect, store and proper distribution of the relief materials.

5- To assign task and channelise work of different local NGO's, CBO's, SHG's, Mahila Mandals, Youth clubs etc to meet the crisis.

6- To help in the function of different task force at Gram Panchayat and village level and give them appropriate training.

7- Different task force at the different level are:

Warning dissemination team

Evacuation and rescue team

First-aid and health team.

Shelter management team

Damage assessment team

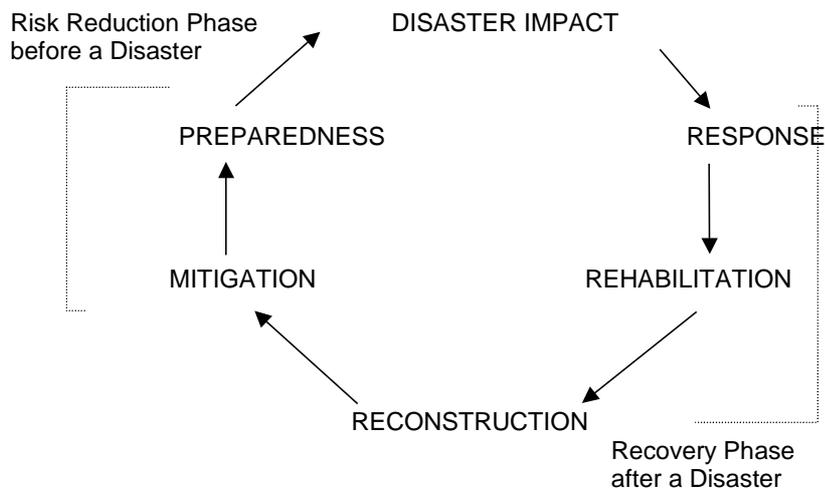
Relief management (collection, storage and distribution) team.

Counselling team.

## CHAPTER-VI

### **CRISIS MANAGEMENT PROCEDURE :**

As we discussed earlier, Disaster is followed by crisis. And before jumping directly in to the crisis management procedure let us have a look at the “DISASTER CYCLE”.



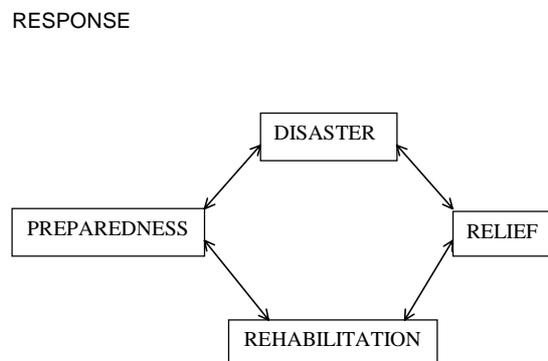
The Crisis Management includes following phases:

Phases of crisis Management:

1. Pre-Disaster Phase (before the occurrence of a disaster)
2. Impact Phase (during the disaster)
3. Post-Disaster Phase (After the occurrence of the disaster)

These phases are also called as emergency responses.

### **CRISIS MANAGEMENT CHART**



The disaster management team comprising of:

- Warning Dissemination Team
- Shelter Management Team
- Evacuation and Rescue Team
- First-Aid and Health Team
- Sanitation and Carcass disposal Team
- Counselling Team
- Damage Assessment Team
- Team for collection, storage and distribution of Relief materials.

This team is given the responsibility of handling Pre-, during and Post-disaster situation. Now let us analysis the functions of different crisis management team during disaster situation:

## 1. FLOOD

### PRE-FLOOD ARRANGEMENTS:

This is the most important stage of action. The collector or the emergency officer so allotted shall himself look to these arrangements in the month of May and October.

The following aspects need his attention:

- Covering a meeting of the District level committee on Natural calamities in the month of May and October to review the precautionary measures taken or proposed to be taken against the possible flood.
- Functioning of the control room.
- Closure of past breaches in river and canal embankments and guarding of weak points
- Communication of gauge readings and preparation of maps and charts.
- Dissemination of weather reports and flood bulletins issued by the meteorological Centre and central flood forecasting Division at Bhubaneswar.
- Deployment of boats at strategic points.
- Use of powerboats.
- Installation of temporary police outposts, wireless stations and temporary telephones in flood prone areas.
- Arrangement for keeping telephone and telegraph lines in order.
- To estimate food reserves available (including unharvested crops)
- Storage of foodstuff in interior vulnerable strategic and key areas.
- Arrangement of dry foodstuff and other necessaries of life.
- Arrangement for keeping drainage system clean to avoid blockage of water flow.
- Agricultural measures.
- Health measures.
- Selection of flood shelters.

### Mock-drill for the taskforce as well as for the people in severe flood-prone area.

- Review of pre-flood arrangements.
- Look into proper and timely dissemination of flood warning.
- After receiving warning signal, quick arrangement for evacuation to a safer place.

#### **ARRANGEMENTS DURING FLOOD:**

- Relief parties for relief and rescue operations maybe sent out.
- Emergent relief and shelter to the people in distress may be provided.
- Daily reporting of the flood situation.
- To maintain law and order to prevent looting and crime which could add to the miseries of the victims and cause further damage.
- To organize and distribute food.
- Provision of tent or tarpaulin as temporary shelter.
- Accommodating groups of homeless people in community building such as schools.
- Medical assistance.
- Clearance and access - To clear roads, rail tracks etc in order to allow access for rescue and relief teams in the immediate vicinity of the disaster struck area.
- Temporary subsistence supplied such as clothing, cooking utensils etc, so as to enable victims to subsist temporarily in their own area.
- Public information- To keep the stricken community informed on what they should do, especially in terms of self-help.
- To prevent wild speculation and rumours concerning the future situation that may lead to unnecessary fear and mental stress to the people.

#### **POST-ARRANGEMENTS OF FLOOD:**

- Disposal of dead bodies and carcasses.
- Restoration of communication and power supply.
- Provision of safe drinking water.
- Making urgent repair to some buildings
- Land use control planning.
- Construction of reservoirs, dams, dykes, alternative drainage sources.
- Construction of structures over silts, elevated drainage sources.
- Assessment of damage.
- Grow plants and trees near the banks of water sources like pond, river etc.
- Encourage people to build houses on raised mounds and not on frequently submerging areas.

## **II. CYCLONE**

#### **PRE-CYCLONE ARRANGEMENTS:**

- o Dissemination of cyclone warning especially to fishermen.
- o Identification of suitable cyclone proof building.
- o Storage of foodstuffs.
- o Arrangement of vehicles, boats, evacuation teams for evacuation of people.
- o Advance arrangements of Army assistance.
- o A plan is to be worked out with the help of local people and through aerial surveys and then the various teams involved take appropriate steps, to carry out the operation.

- o The possible campsites for the evacuees should be identified in advance.
- o Clothing, medical supplies should be stock piled, as arranged for ready delivery when required.
- o Trained rescuers should be in position to assist the victims and local volunteers should be identified and imparted basic training in rescue and first-aid operations.
- o Public awareness programme to make the community aware of the plan.
- o Quick evacuation of the people to the safe places immediately after receiving the warning signal.

• **ACTIONS DURING CYCLONE:**

- o At the same time rescue and relief agencies also may gear up and be placed in a stand position to get into action as soon as required.
- o Rescue and relief to marooned people.
- o Identifying the location of disaster victims.
- o Bringing there to safely place and provide there with medical attention.
- o Use sniffer dogs and heavy machines to search out extricate the victims from difficult situation such as collapsed buildings.
- o Control panic and confusion and to provide moral support and relocate they're in safer areas.
- o Disposal of dead bodies and carcasses.
- o Restoration of communication.

• **POST-ARRANGEMENTS AFTER CYCLONE:**

- o Lending help is assessing crop loss, human casualty, loss to livestock and other damages.
- o Provision of drinking water supply.
- o Help in building permanent cyclone shelters.
- o Removal of fallen trees.
- o Arrangement for quick disposal of dead bodies and carcasses.
- o Precautionary measures against epidemics and other health hazards.
- o Help in afforestation.
- o Help in constructing cyclone shelters for the community.
- o Patrolling groups to look after the properties of the evacuees.

**III. DROUGHT**

• **PRE-ARRANGEMENTS:**

- o Ensure supply line of food.
- o Provision of drinking water through construction of surface wells and tanks.
- o Deepening of wells and renovation of tanks.
- o Installation of tube wells.

- **ACTIONS DURING DROUGHT:**
  - o Ensure regular supply of drinking water in the affected villages in tankers.
  - o Implement food for work scheme. Or other alternative majors for livelihood generation.
  - o Provision for immediate irrigation facilities.
  - o Take appropriate measures to avoid starvation death like situations.
- **POST-ACTIONS:**
  - o Checking of migration and providing alternate employment for people.
  - o Helping in assessing the starvation ratio.
  - o Help in proper selection of crops for drought-affected areas.
  - o Reducing deforestation and firewood cutting.
  - o Water shed management.
  - o Help in construction of dams, and check dams.

#### **GOVERNMENTS' RESPONSE**

To combat drought & its after affects, the steps to be taken by the government are:

- a) **Protective Irrigation:** Storing of water of rivers & its tributaries, using different ways and supplying these waters to the agricultural fields through diesel pump sets.
- b) **Lift Irrigation Point:** Ensure the proper functioning of L.I. point if not working then get it repaired
- c) Supply Agricultural equipments (such as diesel pump set, seeds, fertilizer etc.) at a subsidized rate.
- d) **Construction of deep bore well:** In Drought affected areas, the farmer are to be provided with the loans for construction of deep bore wells at a subsidized rate.
  - e) Supply of seeds at a subsidized rate.
- f) **Labour-Intensive work:** In the drought affected areas, through certain schemes provide some labour intensive work for the local inhabitants so as to make them earn in the crisis period, This can check the people being going out as migrant labourer in search of job.
- g) **Food-for-work scheme:** Through this scheme, arrange some work for the people of the affected areas and in exchange of their labour provide them equal amount of food or a part of their labour as food and rest in cash.
- h) **Drinking water facility:** To eradicate the scarcity of drinking water in the drought-prone areas repair the damaged tube wells, deepen the wells and also arrange tankers for the supply of drinking water in these areas in acute cases.
- i) **Social Security Scheme:**

Gratuitous Relief: To combat the starvation deaths, panchayat Sarpanchs have to identify those people and extend them help. In spite of this, if any starvation death case arrives then collectors to be instructed to carryout a through on this enquiry by a class-I officer within 24 hour

A tight vigil is made towards proper supplementation of old-age pensions, and other provisions like Annapurna Yojana in these areas.

- j) **Fodder and medicine supply:** In the drought affected area, fodder and pre medicines be provided free of cost from the Disaster relief fund.
- k) **For students:** Examination fees be exempted for the students in these drought-affected areas so that they can continue their study.

Many of the above provisions are being implemented by the govt. But for a better result the beneficiaries must be made aware of these schemes and provisions.

#### **IV. SUNSTROKE**

**Causes** of Sunstroke may be as follows;

1. Deforestation.
2. Rapid Industrialization
3. Rise in number of vehicles

#### **EFFECT:**

1. Rise in body temperature leading to profuse sweating and ultimately leads to dehydration.
2. Leads to Drought like situation.

Most vulnerable group :Old people, school students, women, Daily labourers and field workers.

#### **PREVENTIVE MEASURES:**

1. During Noon try to stay indoors or in shade places.
2. Take as much water as you can.
3. Carry sunglasses, wet towels and umbrellas.
4. Use light colour cotton cloth especially white.
5. Take special care of small children, sick person and old people.
6. Avoid alcoholic drinks and smoking.

#### **FIRST-AID MEASURES:**

1. Loosen the cloth of affected person and wipe his/her body with a wet towel. Wash her head and body if her body temperature is high.
2. Give him ORS (Oral Rehydration Solution) or lemon water etc.
3. If his/her condition doesn't improve then take him to nearest CHC (Community health centre/PHC (Primary health centre)

#### **SUNSTROKE MANAGEMENT:**

1. Make the people aware about the cause & preventive measure of sunstroke.
2. Train & Help youth clubs, Mahila Mandals, local volunteers to carry out sunstroke awareness campaigns, construction and management of rest sheds, first-aid camps, roadside plantation etc.