

**STANDARD OPERATING
PROCEDURES**

FOR PERFORMING ESF

BY

VARIOUS DEPARTMENTS

**OPERATING PROCEDURE GUIDELINES
FOR
FOREST DEPARTMENT**

Planning Assumptions

- There is no substitute for maintaining standards of services and regular maintenance during normal times. This affects the response of the department to any disaster situation.
- The department is required adopt appropriate measures to ensure that community participates substantially.
- For effective preparedness, the department must have a disaster response plan or disaster response procedures clearly defined in order to avoid confusion, improve efficiency in cost and time.
- Orientation and training for disaster response plan and procedures accompanied by simulated exercise will keep the department prepared for such eventualities. Special skills required during emergency operations need to be imparted to the officials and the staff. Select personnel can be deputed for training as “NODAL OFFICER – FOREST” at district level.

Action Plan Objective in a Disaster Situation

- Forest protection

Activities on Receipt of Warning or Activation of District DMAP (DDMP)

- Within the affected district all available personnel will be made available to the District Disaster Manager. If more personnel are required, then out of station officer or those on leave may be recalled.
- All personnel required for Disaster Management should work under the overall supervision and guidance of District Disaster Manager.
- Establish communications with District control room and your departmental offices within the division.
- Appoint one officer as “NODAL OFFICER – Forest” at district level.
- Review and update precautionary measures and procedures and review with staff the precautions that have been taken to protect equipment and the post-disaster procedures to be followed.
- Fill departmental vehicles with fuel and park them in a protected area.
- Check available stocks of equipment and materials which are likely to be most needed after disaster.
- Provide information to all concerned, about disasters, likely damages, and information about ways to protect the same.
- All valuable equipment and instruments should be packed in protective covering and stored in room the most damage-proof.
- Establish work schedules to ensure that the adequate staff are available

Relief and Rehabilitation

- Assess the extent of damage to forests, nurseries and storage facilities and the requirements to salvage or replantation
- Establish contact with remote sensing department to assess damage
- Afforestation measures should be coordinated with DRDA to ensure employment assurance to disaster hit people, with Soil Conservation Officer to ensure stabilization of slopes and district control room.
- Ensure that the adequate conditions through cleaning operations are maintained to avoid water-logging and salinity in low lying areas.
- A pests and disease monitoring system should be developed to ensure that a full picture of risks is maintained.
- Plan for emergency accommodations for forest staff from outside the area.
- Information formats and monitoring checklists should be used for programme monitoring and development and for reporting to DCR. This is in addition to existing reporting system in the department.
- Establishment of a public information centre with a means of communication, to assist in providing an organized source of information. The department is responsible for keeping the community informed of its potential and limitations in disaster situations.
- The NGOs and other relief organizations should be aware of the resources of the department.
- Ensure availability of fuel and fodder for disaster effected people.

OPERATING PROCEDURE GUIDELINES FOR POLICE DEPARTMENT

Planning Assumptions

- For effective preparedness the need is for the disaster response procedures to be clearly defined.
- Orientation and training for disaster response plan and procedures accompanied by simulated exercises will keep the department prepared for such eventualities. Special skills required during emergency operations need to be imparted to the officials and the staff. Select personnel can be deputed for training as “NODAL OFFICER – Police” at the district level.

NORMAL TIME ACTIVITY

- Assess preparedness level and report the same as per the format to District Control Room every six months
- Maintain a list of disaster prone areas in the district
- Organise training on hazardous chemicals for police officers to facilitate handling of road accidents involving hazardous materials
- Designate an area, within police station to be used as public information centre

Action Plan Objective in a Disaster Situation

- Maintain Law and order

Activities on Receipt of Warning or Activation of DDMP

- Within the district, all available personnel will be made available to the District Disaster Manager. If more personnel are required, then out of station officers or those on leave may be recalled.
- All personnel required for disaster management should work under the overall supervision and guidance of District Disaster Manager.
- Establish radio communications (and assist in precautionary evacuation activities) with
 - State Emergency Operations Centre
 - District control room
 - Departmental offices
- All district level officials of the department would be asked to report to the DDM.
- Appoint one officer as “Officer-in-Charge – Police” at the district level
- The DDM shall provide “Officer-in-Charge - Police” or the field staff as the need be, with all needed authorizations with respect to
 - Recruiting casual labourers.
 - Procuring locally needed emergency tools and equipment and needed materials.
 - Expending funds for emergency needs.
- The “Officer-in-Charge - Police” will ensure that all field staff and other officers submit the necessary reports and statement of expenditure in a format as required by DDM
- Provide guards as needed for supply depots such as cooperative food stores and distribution centres.

- Identify anti-social elements and take necessary precautionary measures for confidence building.

Evacuation

- All evacuations will be ordered only by the DC, SP, and Fire Brigade.
- For appropriate security and law and order, evacuation should be undertaken with assistance from community leaders.
- All evacuations should be reported to DC or District Superintendent of Police immediately.

Relief and Rehabilitation

- Immediately after the disaster, dispatch officers to systematically identify and assist people and communities in life threatening situations.
- Help identify the seriously injured people, and assist the community in organizing emergency transport of seriously injured to medical treatment centres.
- Ensure that the police stations are functioning immediately after the disaster at all required locations, as may be requested by the district control room, and that staff are available for the variety of needs that will be presented.
- Assist and encourage the community in road-clearing operations.
- Identify roads to be made one-way, to be blocked, alternate routes, overall traffic management and patrolling on all highways, and other access roads to disaster site.
- Provide Security in transit and relief camps, affected villages, hospitals and medical centres and identify areas to be cordoned off.
- Transport carrying transit passengers (that is, passengers traveling through buses and passing through the district), should be diverted away from the disaster area.
- Provide security arrangements for visiting VVIPs and VIPs.
- Assist district authorities to take necessary action against hoarders, black marketers and those found manipulating relief material.
- In conjunction with other government offices, activate a public information centre to:
 - Respond to personal inquiries about the safety of relatives in the affected areas
 - Compile statistics about affected communities, deaths, complaints and needs
 - Respond to the many specific needs that will be presented
 - Serve as a rumour control centre
 - Reassure the public
- Make officers available to inquire into and record deaths, as there is not likely to be time nor personnel available, to carry out standard post-mortem procedures.
- Monitor the needs and welfare of people sheltered in relief camps.
- Coordinate with military service personnel in the area.

**OPERATING PROCEDURE GUIDELINES
FOR HEALTH DEPARTMENT**

- There is no substitute for maintaining standards of services and regular maintenance during normal times. This affects the response of the department to any disaster situation.
- For effective preparedness, the department must have disaster response procedures clearly defined in order to avoid confusion, improve efficiency in cost and time.
- Orientation and training for disaster response plan and procedures, accompanied by simulated exercises, will keep the department prepared for such eventualities. Special skills required during disaster situations need to be imparted to the officials and the staff.
- Select personnel can be deputed for training as “NODAL OFFICER”.

ACTION PLAN OBJECTIVE IN A DISASTER SITUATION

- Providing efficient and quick treatment
- Preventing outbreak of epidemics.

ACTIVITIES ON RECEIPT OF WARNING OR ACTIVATION OF DDMP

- Within the affected district all available personnel will be made available to the District Disaster Manager. If more personnel are required, then out of station officers or those on leave may be recalled.
- All personnel required for disaster management should work under the overall supervision and guidance of District Disaster Manager.
- Ensure that personnel working within the district come under the direction and control of the DDM.
- Appoint one person as “NODAL OFFICER”.
- Review and update precautionary measures and procedures, and review with staff, the precautions that have been taken to protect equipment and the post-disaster procedures to be followed.
- Stock emergency medical equipment which may be required after a disaster.
- Determine type of injuries/illnesses expected and drugs and other medical items required, and accordingly ensure that extra supplies of medical items be obtained quickly.
- Provide information to all hospital staff about the disasters, likely damages and effects, and information about ways to protect life, equipment and property.
- Discharge all ambulatory patients whose release does not pose a health risk to them. If possible, they should be transported to their home areas.
- Non-ambulatory patients should be relocated to the safest areas within the hospital. The safest rooms are likely to be:
 - On Ground Floor
 - Rooms in the centre of the building away from windows
 - Rooms with concrete ceilings.
- Equipment supplies such as candles, matches, lanterns and extra clothing should be provide for the comfort of the patients.
- Surgical packs should be assembled and sterilized. A large enough number should be sterilized to last four to five days. The sterilized surgical packs must be stored in protective cabinets to ensure that they do not get wet. Covering the stock with polythene is recommended as an added safety measure.

- All valuable instruments, such as surgical tools, ophthalmoscopes, portable sterilizers, CGS, dental equipment, etc., should be packed in protective coverings and store rooms considered to be the most damage-proof.
- Protect all immovable equipment, such as x-ray machines, by covering them with tarpaulins or polythene.
- All electrical equipment should be unplugged when disaster warning is received.
- Check the emergency electrical generator to ensure that it is operational and that a buffer stock of fuel exists. If an emergency generator is not available at the hospital, arrange for one on loan.
- All fracture equipment should be readied.
- If surgery is to be performed following the disaster, arrange for emergency supplies of anaesthetic gases.
- Check stocks of equipment and drugs which are likely to be most needed after the disaster. These can be categorized generally as:
 - Drug used in treatment of cuts and fractures, such as tetanus toxoid, analgesics and antibiotics.
 - Drugs used for the treatment of diarrhoea, water-borne diseases and flu (including oral rehydrating supplies).
 - Drugs required to treat burns and fight infections.
 - Drugs needed for de-toxication including breathing equipment.
- Assess the level of medical supplies in stock, including :
 - Fissure materials
 - Surgical dressings
 - Splints
 - Plaster rolls
 - Disposable needles and syringes
 - Local antiseptics.
- Prepare an area of the hospital for receiving large number of casualties.
- Develop emergency admission procedures (With adequate record keeping).
- Orient field staff with DDMP, standards of services, procedures including tagging.
- Hospital administrators should
 - Establish work schedules to ensure that adequate staff are available for in-patient needs.
 - Organise in-house emergency medical teams to ensure that adequate staff are available at all times to handle emergency casualties.
 - Set up teams of doctors, nurses and dressers for visiting disaster sites.

RELIEF AND REHABILITATION

- Transport should be arranged for the transfer of seriously injured patients from villages and peripheral hospitals to general hospitals. If roads are blocked, a method should be established to request helicopter transport.
- Establish health facility and treatment centres at disaster sites.
- The provision of medical services should be coordinated by the CMO with district control room.
- Procedures should be clarified between
 - Peripheral hospitals
 - Private hospitals
 - Blood banks

- General hospitals and
- Health services established at transit camps, relief camps and affected villages.
- Maintain check posts and surveillance at Transport depots and all entry and exit points from the affected area, especially during the threat or existence of an epidemic.
- An injury and disease monitoring system should be developed to ensure that a full picture of health risks is maintained.
- Monitoring should be carried out for epidemics, water and food quality and disposal of waste in transit and relief camps, feedings centres and affected villages.
- Plan for emergency accommodations for auxiliary staff from outside the area.
- Information formats and monitoring checklists should be used for programme monitoring and development and for reporting to Emergency Operations Center. This is in addition to existing reporting system in the department.
- Seek security arrangements from district police authorities to keep curious persons from entering hospital area and to protect staff from hostile actions.
- Establishment of a public information centre with a means of communication to assist in providing an organized source of information. The hospital is responsible for keeping the community informed of its potential and limitations in disaster situations.
- The Local Police, rescue groups, and ambulance teams should be aware of the resources of each hospital.

STANDARDS OF SERVICE

Tagging

Tagging is the process of prioritizing transfer of injured, based on first hand assessment of the medical officer on the disaster site. It is based on the medical criterion of chance of survival. Decision is made regarding cases which can wait for treatment, these which should be taken to more appropriate medical units, and these which have no chances of surviving. The grouping is based on the benefit that the casualties can expect to derive from medical care, not on the seriousness of the injuries.

Whenever possible, the identification of patients should be accomplished concurrently with triage. This is done by attaching a tag to each patient, usually color-coded to indicate a given degree of injury and the priority for evacuation.

Red Tag

This tag signifies that the patient has a first priority for evacuation. Red-tagged patients need immediate care and fall into one of the following categories:

- 1 Breathing problems that cannot be treated at the site.
- 2 Cardiac arrest (witnessed).
- 3 Appreciable loss of blood (more than a litre).
- 4 Loss of consciousness.
- 5 Thoracic perforations or deep abdominal injuries.
- 6 Certain serious fractures:
 - a. Pelvis
 - b. Thorax
 - c. Fractures of cervical vertebrae
 - d. Fractures or dislocations in which no pulse can be detected below the site of the fracture or dislocation
 - e. Severe concussion.

f. Burns (Complicated by injury to the air passages)

Green Tag

This tag identifies those patients who receive second priority for evacuation. Such patients need care, but the injuries are not life-threatening. They fall into the following categories:

1. Second-degree burns covering more than 30 per cent of the body.
2. Third-degree burns covering 10 percent of the body.
3. Burns complicated by major lesions to soft tissue or minor fractures.
4. Third -degree burns involving such critical areas as hands, factor face but with no breathing problems present.
5. Moderate loss of blood *(500-1000cc)
6. Dorsal lesions, with or without injury to the spinal column.
7. Conscious patients with significant craniocerebral damage (serious enough to cause a subdural hematoma or mental confusion). Such patients will show one of the following signs:
 - a. Secretion of spinal fluid through ear or nose
 - b. Rapid increase in systolic pressure
 - c. Projective vomiting
 - d. Change in respiratory frequency
 - e. Pulse below 60ppm
 - f. Swelling or bruising beneath the eyes
 - g. Anisocoric pupils
 - h. Collapse
 - i. Weak or no motor response
 - j. Weak reaction to sensory stimulation (Profound stupor)

Yellow Tag

Used on patients who are given third priority for evacuation and who fall into the following categories:

1. Minor Lesions
2. Minor fractures (fingers, teeth, etc).
3. Other minor lesions, abrasions, contusions.
4. Minor burns:
 - Second-degree burns covering less than 15% of the body
 - Third degree burns covering less than 2% of the body surface
 - First-degree burns covering less than 20% of the body, excluding hands, feet, and face.
5. Fatal Injuries
 - Second and third-degree with burns over more than 40 percent of the body with death seeming reasonably certain.
 - Second and third-degree burns over more than 40% of the body with other major lesions, as well as major craniocerebral lesions etc.
 - Cranial lesions with brain tissue exposed and the patient unconscious.
 - Cranio-cerebral lesions where the patient unconscious and has major fractures.
 - Lesions of the spinal column with absence of sensitivity and movement.
 - Patients over 60 years old with major lesions.

It should be noted that the line separating these patients from red-tag casualties is very tenuous. If there are any red-tag patients, this system will have to be followed. If there are none, the yellow-tag patients with apparently fatal injuries become red-tag candidates. The reason is simple: If there are many red-tag patients who apparently cannot be saved because of their injuries, the time spent on the dying wounded could be better spent on the patients with chance to survive.

Black Tag

Black tags are placed on the dead, i.e. casualties without a pulse or respiration who have remained in that condition for over 20 minutes, or whose injuries render resuscitation procedures impossible.

Evacuation Procedure under the following conditions

- 1) Casualties not trapped or buried. Evacuate in the following order:
 - a. Red-tag casualties.
 - b. Green-Tag casualties.
 - c. Yellow-Tag casualties.

- 2) Casualties not trapped or buried. Evacuate in the following order:
 - a. Red-tag casualties.
 - b. Green-Tag casualties.
 - c. Yellow-Tag casualties.
 - d. Black-tag casualties not trapped or buried.
 - e. Trapped black-tag casualties.

Vector Control Standards

Vector control programmes should be planned so as to cope with two distinct situations:

- The initial phase immediately following the disaster, when control work should concentrate on the destruction, by a physical or chemical process, of vermin on persons, their clothing, bedding and other belongings and on domestic animals. An emergency sanitation team should be available from the beginning for carrying out these disinfestations.
- The period after the disaster subsided, control work should be directed towards proper food, sanitation, safe disposals of wastes, including drainage, and general personal cleanliness.

Suggested Vector Surveillance Equipment and Supplies

- Collecting Bags
- Collecting forms
- Mouth or battery powered aspirations
- Tea strainer
- Flashlight and spare batteries
- Grease pencil
- Memo pad
- Sweep net
- Pencil
- Tweezers

- White enameled dipper
- Keys and other references
- Labels
- CDC light traps (Optional)
- Collecting vials
- Aedes aegypti Ovitrap (Optional)
- Bulb syringe or medicine dropper
- Fly grill
- Mirror

Suggested Rodent Surveillance Equipment and Supplies

- Teaching aids
- Transfer bags
- Plastic bags
- Vials
- Plastic cups
- Alcohol
- Rubber bands
- Forceps
- Scissors
- Insecticide dusting pan
- Snap traps
- Formaldehyde
- Live Traps
- Acute rodenticides
- Gloves
- Anti Coagulant rodenticides
- Flashlights and batteries.

Materials and equipment

In the absence of clear indication from field, a minimum kit comprising of the following materials and equipment should be carried by the advance party to the disaster site

1. Equipment for paediatric intravenous use	36
2. Tensiometers for children and adults	12
3. Assorted ferrules Boxes	2
4. Tracheal cannulae	36
5. Set of laryngoscopes for infants, children And adults	1 each
6. Endotracheal tubes, No. 7 Murphy	36
7. Endotracheal tubes, No. 8	36
8. Nasogastric probes	36
9. Oxygen masks, for adults and children	2
10. Large scissors for cutting bandages	3
11. Plastic linings	60
12. Phonendoscopes	15

Sterilization Unit Supplies

1. Tracheotomy set	6
2. Thorachotomy set	6
3. Venous dissection set	6
4. Set for small sutures	12
5. Bottles for drainage of thorax	10
6. Hand scissors No. 4	6
7. Syringes (disposables) x 2cc	60
8. Syringes (disposables) x 10cc	90
9. Syringes (disposables) x 50cc	60

Ambulance Fleet

The ambulances will carry the following equipment:

1. Oxygen, Oxygen Mask, and manometer.
2. Stretchers and blankets
3. Emergency first aid kit
4. Suction equipment
5. Supplies for immobilizing fractures
6. Venoclysis equipment
7. Drugs for emergency use
8. Minimal equipment for resuscitation maneuvers

Each ambulance should be staffed by at least a physician, a nurse, a stretcher-bearer and a driver. The medical and paramedical personnel should be experienced in procedures for the management of patients in intensive care units.

Equipments and Supplies required for Vermin control for a population of 10,000

Power sprayers	2
Hand-pressured sprayers, capacity 20-30 litres	50
Dusters (hand-operated, plunger type)	50
Dusters (power-operated)	2
Space sprayer	1
Adequate supply of accessories and spare parts for the above equipment	

○ Insecticides:

DDT, technical powder	0.5 tons
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DDT, 75% water wettable	1-2 tons
DDT, 10% powder	1 ton
Dieldrin, 0.625 – 1.25% emulsifiable concentrate or wettable power	100 Kg
Lindane, 0.5% emulsifiable concentrate or wettable power	100 Kg
Chlordane, 2% emulsifiable concentrate or wettable power	100 Kg
Malathion, 1% emulsifiable concentrate or wettable power	100 Kg
Dichlorvos emulsion	100 litres
Rodenticides, anticoagulant type (warfarin, etc.)	1-2 Kg
Rodent traps	100
Screen for fly control	10 rolls
Garbage cans, capacity 50-100 litres	300-500
<i>a* Quantity depends on availability and on distribution points</i>	

OPERATING PROCEDURE GUIDELINES FOR IRRIGATION AND PUBLIC HEALTH DEPARTMENT

Planning Assumptions

- There is no substitute for maintaining standards of services and regular maintenance during normal times. This affects the response of the department to any disaster situation.
- Operating procedures for mobilizing community participation during various stages of disaster management. The department is required to adopt appropriate measures to ensure that community participates substantially.
- For effective preparedness, the department must have a disaster response plan or disaster response procedures clearly defined in order to avoid confusion, improve efficiency in cost and time.
- Orientation and training for disaster response plan and procedures accompanied by simulated exercise will keep the department prepared for such eventualities. Special skills required during emergency operations need to be imparted to the officials and the staff. Select personnel can be deputed for training as “NODAL OFFICER – Water supply” and “Officer-in-Charge – Water supply” at state and district level respectively.
- To the extent possible, preventive measures as recommended in the preparedness and mitigation document of DDMP should be undertaken to improve departmental capacity to respond to a disaster.

Normal Time Activity

- Assess preparedness level and report the same as per the format to the District Control Room every six months.
- Identify flood prone rivers and areas and activate flood monitoring mechanisms.
- Mark water level gauges on rivers, dams, and reservoirs.
- Establish disaster management tool kits with at sub-divisional levels consisting of ropes, pulley blocks, jungle knives, shovels, cement in bags, concrete pans, gunny bags, cane baskets.

Action Plan Objective in a Disaster Situation

- Restoration of water supply to the affected area
- Monitor flood situation
- Monitor and protect irrigation infrastructure
- Restore damaged infrastructure

Activities on Receipt of Warning or Activation of DDMP

- Within the affected district/sub-division all available personnel will be made available to the District Disaster Manager. If more personnel are required, then out of station officer or those on leave may be recalled.
- All personnel required for Disaster Management should work under the overall supervision and guidance of District Disaster Manager.

- Establish communications with Emergency operations Centre at State HQ, District Control Room and your departmental and field offices within the division.
- Appoint one officer as “Officer-in-Charge – Water Supply and Irrigation” at district level.
- Review and update precautionary measures and procedures and review with staff the precautions that have been taken to protect equipment and the post-disaster procedures to be followed.
- Fill departmental vehicles with fuel and park them in protected area.
- Make sure that the hospital storage tank is full and hospital is conserving water.
- Inform people to store an emergency supply of drinking water.
- Organize on the receipt of disaster warning continuous monitoring of
 - Wells
 - Intake structures
 - Pumping stations
 - Buildings above ground
 - Pumping mains
 - The treatment plant
 - Bunds of Dams
 - Irrigation Channels
- The inlet and outlet to tanks should be inspected to ensure that waterways are unobstructed by trees and vegetation.
- Any repairs/under construction activity should be well secured with sandbags, rock falls, etc.

Relief and Rehabilitation

- Carry out emergency repair of all damages to water supply system.
- Assist health authorities to identify appropriate source of potable water.
- Identify unacceptable water sources and take necessary precautions to ensure that no water is accessed from such sources, either by sealing such arrangements or by posting department guards.
- Arrange for alternate water supply and storage in all transit camps, feeding centres, relief camps, cattle camps, and also the affected areas, till normal water supply is restored.
- Ensure that potable water supply is restored as per the standards and procedures laid down in “Standards of Potable Water”.
- Continue round the clock inspection and repair of bunds of dams, irrigation channels, control gates and overflow channels.
- Continue round the clock inspection and repair of pumps, generators, motor equipment and station building.
- Plan for emergency accommodations from staff from outside the area.
- Report all activities to the head office.

On the recommendations of “NODAL OFFICER – “Water Supply”/ Deputy Commissioner/District Control Room

- Provide for sending additional support along with food, bedding, tents
- Send vehicles and any additional tools and equipment needed.
- Standby diesel pumps or generators should be installed in damage proof buildings.
- A standby water supply should be available in the event of damage.
- Establish procedures for emergency distribution of water if existing supply is disrupted.
- Make provisions to acquire tankers and establish other temporary means of distributing water on an emergency basis.
- Make provisions to acquire containers and storage tanks required for storing water on an emergency basis.
- Prepare plan for water distribution to all transit and relief camps, affected villages and cattle camps and ensure proper execution of these plans.
- A minimum level of stock should be maintained for emergencies, and should include extra lengths of pipe, connections, joints, hydrants and bleaching powder. Adequate tools should be on hand to carry out emergency repair.
- Make sure auxiliary generators and standby engines are in good working order.
- Acquire a buffer stock of fuel for the motors and store in a protected place.
- Establish emergency work gangs for immediate post-disaster repair.

Standards of Services Water Supply

Piped Water

- After any repair on the distribution system, the repaired main should be flushed and disinfected with a chlorine solution of 50 mg/litre for contact period of 24 hours, after which the main is emptied and flushed again with potable water.
- If the demand for water is urgent, or the repaired main cannot be isolated, the concentration of the disinfecting solution may be increased to 100mg/litre and the contact period reduced to 1 hour.
- At the end of disinfection operations, but before the main is put back into service, samples should be taken for bacteriological analysis and determination of chlorine residue.
- When a water treatment plant, pumping station, or distribution system is so badly damaged that operation cannot be restored for some time, other methods described in the following paragraphs must be used.

Private System (open well or tube)

- Water from these sources, with adequate chlorination as necessary, can be connected to a distribution system or hauled to points of consumption.

Springs and wells (non-private)

- Ground water originating from deep aquifers (such as is obtained from deep wells and certain springs) will be free from contamination if certain simple protective measures are taken.

- When springs are used as a source of water supply for disaster area, careful attention must be paid to geological formations. Limestone and certain rocks are liable to have holes and cracks, especially after earthquake that may lead to the contamination of ground water.
- A sanitary survey of the area surrounding a well site or spring is of utmost importance. This survey, which should be carried out by a qualified professional environmental health worker, should provide information on source of contamination, geological structures (with particular reference to overlying soil and rock formations) quality and quantity of ground water, direction of flow etc.
- The well selected as a source of water, should be at least 30m away from any potential source of contamination, and should be located higher than all such sources. The upper portion of the well must be protected by an external impervious casing, extending at least 3m below and 30cm above ground level. The casing should be surrounded by a concrete platform at least 1m wide, that slope to allow drainage away from the well; it should connect to the drain that will carry the spilled water away. The opening for drop pipes should be sealed to prevent outside water from entering the well. The rim of manholes should project at least 8cm above the surrounding surface, and the manhole cover must overlap this rim.
- Immediately after construction or repair, the well should be disinfected. First the casing and lining should be washed, and scrubbed with strong chlorine solution containing, 100mg of available chlorine per litre. A strong solution is then added to produce concentration of 50-100 mg/litre in the water stored in the well. After adequate agitation, the well water is left to stand for at least hours, and then pumped out. The well is then allowed to refill. When the residual chlorine of the water drops below 1 mg/litre the water may be used.
- Most of water is stated above applies also to the location and protection of springs. The following points may be added:
 - The collection installation should be so built as to prevent the entrance of light.
 - The overflow should be so located as to prevent the entrance of surface water at times of heavy rainfall.
 - The manhole cover and gates should be locked.
 - Before using the water, the collection chamber should be disinfected with a chlorine solution.
 - An area within a radius of 50m around the spring should be fenced off to prevent ground surface contamination.

Surface water

- Surface water should be used as source of water supply only as a last resort.
- Measures should be taken to protect the watershed from pollution by animals and people. As it is usually difficult to enforce control regulations, the point of intake for water supply should be located above any tributary carrying grossly contaminated water. The pump intake should be screened and placed so that it will not take in mud from the stream bed or floating debris. The device can be something extremely simple, such as perforated drum fixed in the middle of the stream.

Treatment

- Water should be tested for the presence of Escherichia coli and unsafe concentrations of nitrate as soon as possible. Detection of E. coli indicates contamination by human waste and therefore requires immediate protective and corrective measures.
- Monitoring of water quality should be restored or initiated immediately. During the disaster, daily determination of the chlorine residual in public water supply is sufficient.

Disinfection (Quarantine)

- Chlorine and chlorine-liberating compounds are the most common disinfectants. Chlorine compounds for water disinfection are usually available in three forms:
 - Chlorinated lime or bleaching powder, which has 20% by weight of available chlorine when fresh. Its strength should always be checked before use.
 - Calcium hypochlorite, a more stable compound sold under various proprietary names. This compound contains 70% by weight of available chlorine. If properly stored in tight container and in dark cool place, it preserves its chlorine contents for considerable period.
 - Sodium hypochlorite, usually sold as solution of approximately 5% strength under a variety of proprietary names. Its use in water disinfection is limited to small quantities and special circumstances.

Methods of chlorination

Gas chlorinator

- These machines draw chlorine gas from a cylinder containing liquid chlorine, mix it in water and inject into supply pipe. Mobile gas chlorinators are made for field use.

Hypochlorinators

- These are less heavy than gas chlorinator and more adaptable to emergency disinfection. Generally, they use a solution of calcium hypochlorite or chlorinated lime in water and discharge it into a water pipe or reservoir. They can be driven by electric motors or petrol engines and their output can be adjusted.
- Hypochlorinators are small and easy to install. They consist usually of a diaphragm pump and standard accessories, including one or more rubber-lined, solution tanks and a chlorine residual testing set. The usual strength of solution is 0.1% and it seldom rises above 0.5%

The Batch Method

- In the absence of the chlorinators, water is disinfected by batch method. This method is more likely to be used in emergencies. It involves applying a predetermined volume of chlorine solution of known strength to a fixed volume of water by means of some gravity arrangements. The strength of the batch solution should not be more than 0.65% of chlorine by weight as this is about the limit of solubility of chlorine at ordinary temperatures. For example 10g of ordinary bleaching powder (25% strength) dissolved in 5 litres of water gives a stock solution of 500mg/litre. For disinfection of drinking water, one volume of the stock solution added to 100 volumes of water gives a concentration of 5mg/litre. If after 30

minutes contact the chlorine residual is more than 0.5mg/litre this dosages could be reduced.

- After the necessary contact period, excess chlorine can be removed to improve the taste by such chemicals as sulphur dioxide, activated carbon, or sodium thiosulphate. The first two are suitable for permanent installations, whereas sodium thiosulphate is more suitable for use in emergency chlorination. One tablet containing 0.5g of anhydrous sodium thiosulphate will remove 1mg/litre of chlorine from 500 litres of water.

Continuous Chlorination

- This method, in which porous containers of calcium hypochlorite or bleaching powder are immersed in water, is used mainly for wells and springs but is also applicable to other types of water supply. A free residual chlorine level of 0.7 mg/litre should be maintained in water, treated for emergency distribution. A slight taste and odour of chlorine after half an hour gives an indication that chlorination is adequate. In flooded areas where the water distribution system is still operating, higher chlorine residual should be maintained. Occasionally, an unpleasant taste develops from the reaction of chlorine with phenolic or other organic compounds. This taste should be accepted, as it is an indication of safe disinfection.

Filtration-Disinfection

- In this method water is mixed with diatomaceous earth, then passed through the filter unit in which filtering partitions (septa) are installed. Mobile purification units using this process have been produced with capacities up to 50,000 litres per hour. They consist essentially of :
 - A centrifugal pump driven by a rope-started gasoline engine.
 - A filter (diatomic)
 - A hypochlorinator
 - A slurry feeder and an air compressor.
 - A pre-coat and recirculation tank.
 - A chlorine solution tank.
 - Hose adapters
 - Valves (pump suction, inlet, drain, outlet, flow control air release, etc) and
 - A tool box. Instructions in the manuals supplied with such units must be followed.

Physical Protection

- In disaster situation, physical protection of water supplies for use, is a major consideration. In addition to such barriers as walls and fences, guards may be necessary to prevent mobs from overrunning and damaging treatment units, pumping stations, tankers, distribution stations, and temporary collection facilities. Intake structures, wells and springs should also be protected against misuse. The character and extent of such protection will depend on the local situation.

Ice Supply

- Required ice should be supplied from a commercial manufacturing plant where it is made from safe water and where sanitary regulations are observed.
- It should be distributed in trucks designed for the purpose, equipped with tools for the safe handling of ice.
- After drinking water is secured within stricken areas, making water available for domestic use (such as leaning and washing) should be considered.

Coagulation-Disinfection

- Removal of the organic matter greatly lessens the amount of chlorine needed for disinfection. There are many factors that govern the coagulation process. These include:
 1. Hydrogen-ion concentration. The optimum pH value for coagulation is the value that the best floe formation and setting. The pH value of water changes when coagulants are used and has to be adjusted to its optimum value by addition of alkali or acids.
 2. Mixing. Coagulants must be thoroughly mixed with the water to give satisfactory results. This may be accomplished by (a) pump action, whereby the coagulant solution is added to the suction pipe of the pump and pump does the mixing; (b) the drip bottle method i.e. hanging a drip-bottle over the discharge pipe or hose of raw water that feeds the tank and letting the coagulant solution drip on to the water jet; or (c) dissolution, i.e. allowing the discharge of raw water to splash on to a basket containing solid coagulant.
 3. Coagulant dosage. The amount of the coagulant and chemicals required to adjust the pH value of water may be calculated when the pH and the type of alkalinity are known. However the optimum dosage for given water may be determined approximately using the jar test.

Coagulation-Filtration-Disinfection

- In this method filtration is added to the procedures described above. If temporary reservoir can be arranged, it is preferable to let the water settle before filtering it. In mobile purification units, however the water is filtered through a pressure filter without setting. They usually have a capacity of 4000-7000 litres per hour, and consist essentially of:
 - A centrifugal pump directly coupled to a gasoline engine.
 - A filter (pressure, rapid and filter)
 - A hypochlorinator
 - A chemical solution tank
(One for alum and one for soda ash)
 - A chlorine solution tank.
 - Hose adapters
 - Valves (pump suction, inlet, drain, outlet, flow control air release, etc) and
 - A tool box. Instructions in the manuals supplied with such units must be followed.

OPERATING PROCEDURE GUIDELINES FOR ANIMAL HUSBANDRY DEPARTMENT

Planning Assumptions

- There is no substitute for maintaining standards of services and regular maintenance during normal times. This affects the response of the department to any disaster situation.
- Operating procedures for mobilizing community participation during various stages of disaster management have been given in section on “Areas of Community Participation”. The department is required to study these and adopt appropriate measures to ensure that community participates substantially.
- For effective preparedness, the department must have a disaster response plan or disaster response procedures clearly defined in order to avoid confusion, improve efficiency in cost and time.
- Orientation and training for disaster response plan and procedures accompanied by simulated exercise will keep the department prepared for such eventualities. Special skills required during emergency operations need to be imparted to the officials and the staff. Select personnel can be deputed for training as “NODAL OFFICER – Veterinary Services” at district level respectively.
- To the extent possible, preventive measures as recommended in the preparedness and mitigation document of DDMP should be undertaken to improve departmental capacity to respond to a disaster.
- Hospital staff be aware of damage – proof hospital rooms/buildings.
- A standby generator be made available for every hospital
- At least one kerosene – powered refrigeration unit be made available for storage of drugs.
- Orientation and training for disaster response plan and procedures, accompanied by simulated exercise will keep the department prepared for such eventualities. Special skills required during disaster situation need to be imparted to the officials and the staff.
- To the extent possible, preventive measures as recommended in the preparedness and mitigation document of DMAP should be communicated to the community to prevent extensive loss of livestock.

Action Plan Objective in a Disaster Situation

- Treatment of injured cattle.
- Protection and care of abandoned/lost cattle.

Activities on Receipt of Warning or Activation of DDMP

- Within the affected district all available personnel will be made available to the District Disaster Manager. If more personnel are required, then out of station officer or those on leave may be recalled.

- All personnel required for Disaster Management should work under the overall supervision and guidance of District Disaster Manager.
- Establish communications with
 - District control room
 - Veterinary aid centres and hospitals (including private practitioners) within the district.
- The Deputy Director, Veterinary Dept. will act as “Nodal Officer – Veterinary Services”.
- Review and update precautionary measures and procedures and review with staff the precautions that have been taken to protect equipment and the post-disaster procedures to be followed.
- Fill departmental vehicles with fuel and park them in protected area.
- Stock emergency medical equipment, which may require after disaster.
- Determine what injuries/illnesses may be expected, and what drugs and other medical items will be required, in addition to the requirements of setting up cattle camps, and accordingly ensure that extra supplies of medical items and materials be obtained quickly.
- Provide information to all staff of veterinary hospitals and centres about the disasters, likely damages and effects, and information about ways to protect life, equipment and property.
- Surgical packs should be assembled and sterilized.
- Arrange for emergency supply of anaesthetic drugs.
- Prepare an area of the hospital for receiving large number of injured livestock.
- Establish work schedules to ensure adequate staff are available round the clock.
- Set up teams for visiting disaster site.

Relief and Rehabilitation

- Organise transfer of injured livestock from village to veterinary aid centres wherever possible
- The provision of medical services should be coordinated by Nodal Officer-Veterinary Services with District Control Room, and cattle camps.
- Establish cattle camps and additional veterinary aid centres at disaster sites and designate an Officer-in-Charge for the camp.
- Estimate the requirement of water, fodder and animal feed, for cattle camps and organise the same.
- Ensure the adequate sanitary conditions though cleaning operations are maintained in order to avoid outbreak of any epidemic.
- An injury and disease monitoring system should be developed, to ensure that a full picture of risks is maintained.
- Plan for emergency accommodations for veterinary staff from outside the area.

- Information formats and monitoring checklists as given in Annexure should be used for programme monitoring and development and for reporting to Emergency Operations Centre. This is in addition to existing reporting system in the department.
- Establishment of public information centre with a means of communication, to assist in providing an organized source of information. The hospital is responsible for keeping the community informed of its potential and limitations, in disaster situations.
- The local police and rescue group should be aware of the resources of each veterinary aid centre and hospital.
- Provide information to all staff of veterinary hospital and centres about the disaster likely damages and effects, and information about ways to protect life, equipment and property.
- Surgical packs should be assembled and sterilized.
- Enough stock of surgical packs should be sterilized to last for four to five days.
- The sterilized packs must be stored in protective cabinets to ensure that they do not get wet. Covering the stock with polythene is recommended as an added safety measure.
- All valuable equipment and instruments should be packed in protective coverings and stored in room the most damage-proof.
- Check the emergency electrical generators, to ensure that it is operational, and that a buffer stock of fuel exists. If an emergency generator is not available at the hospital, arrange for one on loan.
- Arrange for emergency supplies anaesthetic drugs.
- Check stocks of equipment and drugs, which are likely to be most needed after disaster.
- Fill hospital storage tanks and encourage water savings. If no storage tank exists, water for drinking should be drawn in clean container and protected.
- Prepare an area of hospital for receiving large number of injured livestock.
- Develop emergency admission procedure (with adequate record keeping).
- Cattle camps and hospital administrator should
 - Establish work schedules to ensure that adequate staff are available
 - Set up teams of veterinary doctors, and assistants for visiting disaster sites.

Standards for Cattle Camps

1. The minimum number of cattle in the cattle camp should be about 100 and the maximum 500.
2. The cattle camp should be located at suitable sites, bearing in mind, the adequate supply of water and shade are most essential for wellbeing of the cattle.
3. Cattle sheds constructed should not exceed 20 sq. feet per animal. Suitable arrangements for water trough and manger(s) should be made.
4. The feeding centres for cattle should be located in such a manner that
 - There is adequate supply of drinking water
 - There is sufficient shade for cattle to rest during the afternoon
 - They are located as near the rail head as possible
 - They are conveniently located, not beyond a radius of 8 Km from the affected villages.

The cattle will require 6 Kg per cattle head per day of fodder, and 1 to 1½ Kg per cattle head per day, of the concentrate like Bago molasses.

Each cattle camp will have a minimum of one camp manager, two labourers and two sweepers.

Operating procedure guidelines for PWD department

Planning Assumptions

- There is no substitute for maintaining standards of services and regular maintenance during normal times. This affects the response of the department to any disaster situation.
- The department is required to adopt appropriate measures to ensure that the community participates substantially.
- For effective preparedness, the department must have a disaster response plan or disaster response procedures clearly defined in order to avoid confusion, improve efficiency in cost and time.
- Orientation and training for disaster response plan and procedures accompanied by simulated exercise will keep the department prepared for such eventualities. Special skills required during emergency operations need to be imparted to the officials and the staff. Select personnel can be deputed for training as “NODAL OFFICER – PWD” at district level respectively.
- To the extent possible, preventive measures as recommended in the preparedness and mitigation document of DDMP should be undertaken to improve departmental capacity to respond to a disaster.

Action Plan Objective in a Disaster Situation

- Restoration of roads to their normal condition.
- Repair/reconstruction of public utilities and buildings.

Activities on Receipt of Warning or Activation of DDMP

- Within the affected district all available personnel will be made available to the District Disaster Manager. If more personnel are required, then out of station officer or those on leave may be recalled.
- All personnel required for Disaster Management should work under the overall supervision and guidance of District Disaster Manager.
- Establish communications with District control room and your departmental offices within the division.
- All district level officials of the department would be asked to report to the Deputy Commissioner/DDM.
- Appoint one officer as “Nodal Officer - PWD” at district level.
- The “Nodal Officer - PWD” will be responsible for mobilizing staff and volunteers to clear the roads in his section, should a disaster strike.

- The “NODAL OFFICER – PWD” should be familiar with pre-disaster precautions and post disaster procedures for road clearing and for defining safe evacuation routes where necessary.
- All officers³ should be notified and should meet the staff to review emergency procedures.
- Review and update precautionary measures and procedures and review with staff the precautions that have been taken to protect equipment and the post-disaster procedures to be followed.
- Vehicles should be inspected, fuel tanks filled and batteries and electrical wiring covered as necessary.
- Extra transport vehicles should be dispatched from HQ and stationed at safe and strategic spots along routes likely to be effected.
- Heavy vehicles should be moved to areas likely to be damaged and secured in a safe place.
- Inspection of all roads, bridges, government buildings and structures must be done and structures which are endangered by the impending disaster identified.
- Emergency tool kits must be made available and should include
 - Crosscut saws
 - Axes
 - Power chain saw
 - Sharpening Files
 - Chains and tightening wrenches
 - Pulley block with chain and rope
- The designation of routes strategic to evacuation and relief should be identified and marked in close coordination with the DCR.
- Establish a priority listing of roads which will be opened first, the most important being roads to hospitals and main trunk routes.
- Give priority attention to urgent repair works in disaster affected areas.
- Identify locations for setting up transit and relief camps, feeding centres and quantity of construction materials required and inform the DCR accordingly.

Relief and Rehabilitation

- All works teams should be issued two-way communication **link**.
- Provide a work team carrying emergency tool kits, depending on the nature of the disaster, essential equipment such as
 - Towing vehicles
 - Earth moving equipment
 - Cranes etc.
- Each unit should mobilize a farm tractor with chain, cables and a buffer stock of fuel.
- Adequate road signs should be installed to guide and assists the drivers.
- Begin clearing roads. Assemble casual labour to work with experienced staff and divide into work gangs.

- Mobilise community assistance for road clearing by contacting community organizations.
- Undertake clearing of ditches, grass cutting, burning, removal of debris and the cutting of dangerous trees along the roadside in the affected area through maintenance engineer's staff.
- Undertake repair of all paved and unpaved road surfaces including edge metalling, potholes patching and any failure of surface, foundations in the affected areas by maintenance engineer's staff and keep monitoring their conditions.
- Undertake construction of temporary roads to serve as access to temporary transit and relief camps and medical facilities for disaster victims.
- As per the decision of the district control room, undertake construction of relief camps, feeding centres, medical facilities, cattle camps.
- An up-to-date report of all damages and repairs should be kept in the district office report book and communicate the same to the district control room.
- If possible, review of the extent of damage (by helicopter) should be arranged for the field Officer-in-Charge, in order to dispatch most efficiently road clearing crews, and determine the equipment needed.

STANDARDS FOR RELIEF CAMPS

Tent Camps

- The layout of the site should meet the following specifications.
 1. 3-4 hectares of land/1000 peoples
 2. Roads of 10 meters width
 3. Minimum distance between edge of roads and tents of 2 mts.
 4. Minimum distance between tents of 8 mts.
 5. Minimum floor area/tent of 3 square meters per person.
- Water distribution in camp sites consists of
 1. Minimum capacity of tanks of 200 litres
 2. Minimum capacity per capita of 15 litres/day
 3. Maximum distance of tanks from farthest tent of 100 meters.
- Solid waste disposal containers in tent camps should be
 1. Waterproof
 2. Insect-proof and
 3. Rodent-proof
 4. The waste should be covered tightly with a plastic or metallic lid
 5. The final disposal should be by incineration or by burial.
- The capacities of solid waste units should be, 1 litre/4-8 tents; or 50-100 litres/25-50 persons.
- Excreta and liquid waste should be disposed in bore-holed or deep trench latrines in tent camps. Specifications for these are:
 1. 30-50 meters from tents.
 2. 1 seat provided/10 persons
 3. Modified soakage pits should be used for waste water by replacing layers of earth and small pebbles with layers of straw, grass or small twigs. These needs to be removed on a daily basis and burned.

Buildings

Buildings used for accommodating disaster victims should provide the following:

1. Minimum floor area of 3.5 sq. meters/person
2. Minimum air space of 10 sq. meters/person
3. Minimum air space circulation of 30 cubic meters/person/hour and
4. There should be separate washing blocks for men and women.
5. Washing facilities to be provided are:
 - 1 hand basin/10 persons
 - 1 wash bench of 4-5 meters/100 persons and 1 shower head/50 persons in temperate climates
6. Toilet accommodation in buildings housing displaced persons, should meet these requirements:
 - 1 seat/25 women
 - 1 seat plus 1 urinal/35 men
 - Maximum distance from building of 50 meters.

7. Refuse containers are to be plastic or metallic and should have closed lids. To be provided are:
- 1 container of 50-100 litres capacity/25-50 persons.

Operating procedure guidelines for HPSEB

Planning Assumptions

- There is no substitute for maintaining standards of services and regular maintenance during normal times. This affects the response of the department to any disaster situation.
- The department is required to adopt appropriate measures to ensure that community participates substantially.
- For effective preparedness, the department must have a disaster response plan or disaster response procedures clearly defined in order to avoid confusion, improve efficiency in cost and time.
- Orientation and training for disaster response plan and procedures accompanied by simulated exercise will keep the department prepared for such eventualities. Special skills required during emergency operations need to be imparted to the officials and the staff. Select personnel can be deputed for training as “NODAL OFFICER – Power Supply” at district level.
- To the extent possible, preventive measures as recommended in the preparedness and mitigation document of DDMP, should be undertaken to improve departmental capacity to respond to a disaster.

Normal Time Activities

- Assess preparedness level and report the same as per format to District Control Room every six months.
- Establish at each sub-station a disaster management tool kit comprising cable cutters, pulley blocks, jungle knives, axes, crowbars, ropes, hacksaws and spanners. Tents for work crews should also be storage.

Action Plan Objective in a Disaster Situation

- Restore the power supply and ensure uninterrupted power to all vital installation, facilities and site.

Activities on Receipt of Warning or Activation of DDMP

- Within the affected district all available personnel will be made available to the District Disaster Manager. If more personnel are required, then out of station officer or those on leave may be recalled.
- All personnel required for Disaster Management should work under the overall supervision and guidance of District Disaster Manager.

- Establish communications with District control room and your departmental offices within the division.
- All district level officials of the department would be asked to report to the Deputy Commissioner/DDM.
- Appoint one officer as “NODAL OFFICER – Power Supply” at district level.
- Review and update precautionary measures and procedures and review with staff the precautions that have been taken to protect equipment and the post-disaster procedures to be followed.
- Assist the state authorities to make arrangements for standby generators in the following public service offices from the time of receipt of alert warning
 - Hospitals
 - Water Supply Stations
 - Collectorate
 - Police stations
 - Telecommunications buildings
- Fill departmental vehicles with fuel and park them in a protected area.
- Check emergency tool kits, assembling any additional equipment needed.
- Immediately undertake inspection from the time of receipt of alert warning of
 - High tension lines
 - Towers
 - Substations
 - Transformers
 - Insulators
 - Poles and
 - Other equipment
- Review the total extent of the damage to power supply installations by reconnaissance flight, if possible.

On the recommendations of the Deputy Commissioner/District Control Room/ “Nodal Officer– Power Supply” of the department in the district

- Instruct district staff to disconnect the main electricity supply for the affected area.
- Dispatch emergency repair gangs equipped with food, bedding, tents, and tools.

Relief and Rehabilitation

- Hire casual labourers on an emergency basis for clearing of damaged poles and salvage of conductors and insulators.
- Begin repair/reconstruction
- Assist hospital in establishing emergency supply by assembling generators and other emergency equipment, if necessary.
- Establish temporary electricity supplies for other key public facilities, public water systems, etc.
- Establish temporary electricity supplies for transit camps, feeding centres, relief camps, district control room and on access roads to the same.

- Establish temporary electricity supplies for relief material godowns.
- Compile an itemized assessment of damage, from reports made by various electrical receiving centres and sub-centres.
- Report all activities to the head office.
- Plan for emergency accommodations for staff from outside the area.

On the recommendation of the Nodal Officer – Power Supply/Deputy Commissioner/District Control Room, at state level, HPSEB shall

- Send cables, poles, transformers and other needed equipment
- Send vehicles and any additional tools needed.
- Provide additional support as required.

OPERATING PROCEDURE GUIDELINES FOR AGRICULTURE DEPARTMENT

Planning Assumptions

- There is no substitute for maintaining standards of services and regular maintenance during normal times. This affects the response of the department to any disaster situation.
- The department is required to adopt appropriate measures to ensure that community participates substantially.
- For effective preparedness, the department must have a disaster response plan or disaster response procedures clearly defined in order to avoid confusion, improve efficiency in cost and time.
- Orientation and training for disaster response plan and procedures accompanied by simulated exercise will keep the department prepared for such eventualities. Special skills required during emergency operations need to be imparted to the officials and the staff. Select personnel can be deputed for training as “NODAL OFFICER – Agriculture” at district level.
- To the extent possible, preventive measures as recommended in the preparedness and mitigation document of DDMP should be communicated to the community to prevent extensive loss of crops and plantations.

Action Plan Objective in a Disaster Situation

- Restore the agricultural operations (including soil conditions)
- Crop protection
- Restore agriculture produce market.

Activities on Receipt of Warning or Activation of DDMP

- Within the affected district all available personnel will be made available to the District Disaster Manager. If more personnel are required, then out of station officer or those on leave may be recalled.

- All personnel required for Disaster Management should work under the overall supervision and guidance of District Disaster Manager.
- Establish communications with District control room and your departmental offices within the division.
- Appoint one officer as “NODAL OFFICER – Agriculture” at district level.
- Review and update precautionary measures and procedures and review with staff the precautions that have been taken to protect equipment and the post-disaster procedures to be followed.
- Fill departmental vehicles with fuel and park them in a protected area.
- Check available stocks of equipment and materials which are likely to be most needed after disaster.
- Stock agricultural equipment which may be required after disaster
- Determine what damage, pests or diseases may be expected, and what drugs and other insecticides items will be required, in addition to requirement of setting up extension terms for crop protection, and accordingly ensure that extra supplies and materials, be obtained quickly.
- Provide information to all concerned, about disasters, likely damages to crops and plantations, and information about ways to protect the same.
- All valuable equipment and instruments should be packed in protective covering and stored in room the most damage-proof.
- All electrical equipment should be unplugged when disaster warning is received.
- Extension officers should be assisted to
 - Establish work schedules to ensure that the adequate staff are available
 - Set up the teams of extension personnel and assistants for disaster sites.

Relief and Rehabilitation

- Assess the extent of damage to soil, crop, plantation, micro-irrigation systems and storage facilities and the requirements for replantation or salvaging
- Make extensive use of soil and water testing laboratories
- Provision of agricultural services should be coordinated with irrigation department, DRDA, District Control Room
- Estimate the requirement of
 1. Seeds
 2. Fertilizers
 3. Pesticides and labour
- Organise transport, storage and distribution of the above with adequate record keeping procedures
- Ensure that the adequate conditions through cleaning operations are maintained to avoid water-logging and salinity in the low lying areas.
- A pests and disease monitoring system should be developed to ensure that a full picture of risks is maintained.

- Plan for emergency accommodations for agriculture staff from outside the area.
- Information formats and monitoring checklists as given in section on “Information and Monitoring Tools” should be used for programme monitoring and development and for reporting to DCR. This is in addition to existing reporting system in the department.
- Establishment of a public information centre with a means of communication, to assist in providing an organized source of information. The department is responsible for keeping the community informed of its potential and limitations in disaster situations.
- The NGOs and other relief organizations should be aware of the resources of the department.
- Assist farmers to re-establish their contacts with agriculture produce market and ensure that appropriate prices to offer to them.

