UBUNTU MUNICIPALITY

DISASTER MANAGEMENT

CONTENT

CHAPTER 1

DESCRIPTION OF THE REGION

The Ubuntu Municipality is the new amalgamated Local Authority for the region that includes Victoria West, Richmond, Loxton, Hutchinson, Merriman and the surrounding areas.

Victoria West is the main two town of the region and houses the Main Disaster Management Center and the Administrative Unit.

The Ubuntu Municipality acted as the amalgamated Local Authority of the region since 5 December 2000.

CHAPTER 2

DISASTER MANAGEMENT: COMPOSITION AND MAINTENANCE

2.1 INFRASTRUCTURE

The Division Disaster Management and Protection Services reports directly to the Municipal Manager of the Ubuntu Municipality and is also responsible for the management of the Disaster Management function in the area of jurisdiction of the amalgamated Local Authority.

The Department Infrastructure Development, Financial Services and Strategic Planning, the respective Fire Committees and Civilians have been tasked with the delivery of Disaster Management services.

2.1.1 COMMAND AND CONTROL

The different levels of management have the following key responsibilities:

Top and Middle Management is responsible for ensuring that environmental influence, organizational goals, strategies, organizational structures and a recorded commitment to a policy of disaster management is constantly monitored.

Bottom level Management and employees are involved in the supervisory production processes and the day-to-day management of the Disaster Management division.

2.1.2 DISASTER MANAGEMENT TEAMS

Responsibilities of Top and Middle level Management:

To enable a definition of the personnel function Top and Middle level Management must give attention to:

- The nomination of a Disaster Coordinator
- The compilation of Planning and Command structures (including delegation competencies and the definition of parameters)
- Ensuring follow up planning
- The appointment of a Coordinating and Planing Committee for the Emergency situation / Disaster Management program
- The description of the functions and responsibilities of the Disaster Coordinator
- The compilation of Planning and progress reports for submission to Top management

Responsibilities of Bottom level management:

- The bottom level managers and employees are responsible for the coordination of departmental and disciplinary activities.

DUTIES OF:

A) DISASTER MANAGER / DISASTER COORDINATOR

The Disaster Manager / Disaster Coordinator will serve as the Chairperson of the Coordinating and Planning Committee and must ensure that:

i) A comprehensive Emergency Situation / Disaster plan is drafted in conjunction with the Coordinating and Planning Committee. This plan must be minuted as a written Disaster Plan.

ii) Team Leaders (of disaster and emergency teams) and emergency personnel are properly trained in order to execute their duties efficiently. All facets of the Disaster plan must be practiced constantly.

iii) The required equipment are obtained and stored in a functional fashion.

iv) Emergency facilities are functional and well maintained.

v) Communication is effective and that all instructions to the relevant personnel in any part of the region are conveyed with the minimum lapse of time.

vi) Safety measures for all personnel, inhabitants, including the disabled and visitors are planned in

alignment with the requirements of the Occupational Health and Safety Act.

vii) All exit routes, evacuation routes and the location of fire fighting and emergency equipment are prominently indicated and clearly depicted (delineated) on all floor plans.

viii) Monthly status reports are received from all Emergency and Disaster team leaders and that top management receives regular feedback.

ix) Emergency and Disaster situations are managed effectively.

x) Regular practices occur in conjunction with the Coordinating and Planning Committee.

xi) He/she assume overall overall command during emergency and disaster situations.

xii) Secretaries, reception personnel and switchboard operators immediately summons emergency services when so authorized and keep bomb threat control sheets at all communication points.

xiii) A Disaster Control Center and Control Room as well as alternative facilities are available and well equipped.

xiv) Procedures are in place to mobilize the Coordinating and Planning Committee.

xv) Valuable registers and other documents, prioritized for recovery purposes, are safely moved in the event of fire.

xvi) Team leaders and Disaster Teams are appointed and that their duties are delegated in writing.

B) DEPUTY EMERGENCY DISASTER COORDINATOR

The evacuation leader is responsible to the Disaster Coordinator:

- To determine the safest evacuation routes in consultation with the Fire Leader. These routes must be well lit at all times.
- To ensure that the evacuation routes/alternative routes are clearly delineated on all floor plans.
- To ensure that sufficient evacuation officials, personnel and inhabitants are trained to acceptable evacuation standards.
- For the maintenance of a register of all disabled personnel and inhabitants in order to activate assistance

in consultation with the First Aid Leader during evacuation.

- To ensure that evacuation plans also provide for the evacuation of buildings with multi floors in order to prevent aggregation on evacuation routes.
- To ensure that doors and windows are closed during a fire evacuation and opened in the event of a bomb threat.
- To ensure that panic is limited to a minimum during evacuation and that order is constantly maintained.
- To identify a sufficient number of assembly points for evacuation dependent on the nature of the threat. These assembly points must be chosen in consultation with the Security and Fire Leaders.
- To ensure that the Disaster Manager is provided with regular status reports.
- To ensure that evacuation officials are well equipped to execute their duties efficiently.
- To ensure that evacuation instructions are given confidentially or in code format to prevent panicking.
- To support the Disaster Coordinator with the planning and management of emergency situations/disasters.

C) FIRST AID LEADERS

The First Aid Leader reports to the Disaster Coordinator with regards to:

- The access and obtaining of user-friendly first aid equipment.
- The efficient distribution of first aid equipment to ensure its ready availability in a sealed and safe format. This equipment must be safely stored separate from first aid equipment intended for daily use.
- Ensuring that there are sufficient first aid givers appointed and distributed throughout the region so as to provide easy access to their skills.
- Maintaining a register of all training interventions.
- Identifying appropriate areas for evacuation that is accessible for ambulances, all details regarding any incident must be recorded.
- Ensuring that first aid givers are easily identified and well equipped to execute their duties effectively.
- Ensuring that storage facilities for first aid equipment are clearly marked and delineated on all floor plans.
- Submission of monthly reports on the general emergency situation to the Disaster Coordinator.

- Maintaining a register of all disabled personnel and inhabitants in consultation with the Evacuation Leader to ensure that special arrangements are made to provide support in the event of an evacuation.
- Provision of support to the Disaster Manager in planning and management of emergency and disaster situations.

D) FIRE FIGHTING LEADER

The Fire Fighting Leader reports to the Disaster Manager regarding:

- Implementation of effective fire prevention measures.
- Appointment and training of effective fire fighting teams and that their duties and responsibilities are delegated in writing.
- Ensuring that fire fighting teams is equally distributed throughout the region.
- Submission of recommendations regarding fire fighting equipment to the Disaster Manager in consultation with the fire prevention branch of the Emergency Management Services.
- Determination of safe and effective fire escapes and evacuation routes in consultation with the Evacuation Leader.
- Ensuring that fire escapes are serviceable, not blockaded and that it cannot be locked in such a fashion that escaping in the event of an emergency is made impossible.
- Ensuring that fire fighting equipment is safe, accessible, efficiently distributed and well maintained. The location of the equipment and fire extinguishers must be clearly delineated on floor plans.
- Ensuring that fire fighters are not left alone during emergency situations / disasters and that regular reports will indicate there whereabouts.
- Initiating a register that will record the maintenance of fire fighting equipment. All faults must be reported to the Disaster Coordinator.
- Submission of monthly reports regarding the overall fire fighting situation to the Disaster Coordinator. These reports should cover information on the status of equipment, training needs and potential obstacles.
- Provision of support to the Disaster Coordinator in the planning and management of emergency / disaster situations.

E) COMMUNICATION

The communication Leader reports to the Disaster Coordinator regarding:

- Provision of internal and external communication during emergency / disaster situations.
- Ensuring communication within the disaster center and to execute communication duties alongside the personnel of the center.
- Ensuring that communication equipment is accessed, tested and installed.
- Appointment and training of sufficient communication teams. Every training intervention must be recorded.
- Ensuring that there are efficient alarm and warning systems as well as backup systems in place. This is done in consultation with the Coordinating and Planning Committee.
- Submission of monthly reports to the Disaster Coordinator including an update on the status of communication equipment as well as any obstacles.

F) SECURITY LEADER

The Security Leader is responsible to the Disaster Manager for:

- Compilation of procedures for bomb threats and searches.
- Compilation and implementation of Access and Loss Control.
- Ensuring that sufficiently trained security teams are spread accessibly throughout the region. Minutes must be kept of each training intervention.
- Submission of monthly reports to the Disaster Manager regarding the overall security situation in the region.
- Supporting the Disaster Coordinator with planning and management of emergencies and disasters.

G) EMERGENCY / DISASTER TEAM WORKERS

The emergency / disaster team workers comprises of personnel of the Ubuntu Municipality, individual members from other organizations and members of the public.

2.1.3 CONTROL ROOMS

Main Control Room

A Main Control Room will be established and controlled from the Disaster Management center in Victoria West in order to provide facilities for planning, coordination and direction of operations so as to control emergency / disaster situations effectively in the jurisdiction of the Ubuntu Municipality.

Satellite Control Rooms

The Municipal Offices at Richmond and Loxton will be supplied with communication facilities so as to serve Communication Centers / Satellite Control Rooms.

2.2 DISASTER MANAGEMENT TRAINING AND PRACTICE PROGRAMS

The Disaster Coordinator is responsible to see to it that Team Leaders, Emergency Teams and Emergency personnel are properly trained to ensure effective execution of duties.

Instruction and Training of Participants:

Participants to an emergency situation plan or a disaster plan must be trained to ensure that they are all fait with:

- The importance of emergency and disaster situation planning, statutory requirements and recommended code of ethics.
- The importance of personnel participation and coordination.
- The composition of emergency and disaster situation plans, the factors that must be considered and the importance of each factor.
- The nature and complexity of problems that might occur prior to and after an emergency situation / disaster.
- The resources required and its availability and location in a specific situation.
- The roles and duties of everybody involved.
- The importance of training and practice to ensure that successful implementation of the emergency plan.
- The planning of training interventions to ensure that a sufficient number of persons are trained so as to execute all the essential duties and responsibilities during an emergency situation or disaster.

An important focus point of a disaster preparedness plan is the public education and training of the respective communities.

Extension Programs:

Community or town based field workers should be trained to provide relevant information.

Public Information:

The media (radio, television, newspapers) can be effectively employed to distribute messages and can serve as a useful supplement to direct training.

2.3 MAINTENANCE AND EVALUATION PROGRAM

It is of vital importance that the practice and training programs should be constantly maintained so as to ensure the preparedness and sharpness of the emergency / disaster teams and the community.

Evaluation is important and one of the most effective methods to anticipate needs.

CHAPTER 3

PREPAREDNESS FOR DISASTERS

The purpose of preparedness during disasters is to ensure that a proper system procedures and resources are in place to not only assist those unfortunate enough to be struck by the disaster but also to enable them to help themselves.

It is therefore of vital importance to through effective measures, organization and the delivery of emergency response, immediately act to minimize the negative impact of the obstacle.

Components of preparedness for disasters:

There are nine primary components involved in the preparedness for disasters that provides a framework within which a National Strategy for the preparedness of disasters can be developed, viz.:

i) Appreciation of vulnerability
ii) Planning
iii) Association Framework
iv) Information Systems
v) Resource base
vi) Warning Systems
vii) Reaction mechanisms
viii) Public education and training

ix) Practice

CHAPTER 4

DISASTER ANALYSIS OF UBUNTU MUNICIPALITY

Before analyzing disasters in the Ubuntu region it is important to have a common understanding of the terms obstacle, disaster, natural phenomenon and emergency situation.

Definition of an Obstacle:

An obstacle is a rare or extreme occurrence in the human or natural environment that threatens human existence, property or activities in such a manner that a disaster occurs.

Definition of a disaster:

A disaster is a serious disruption of the functioning of a collective that causes widespread human, material or environmental losses that restricts the capacity of the affected community to manage with its own resources.

Definition of a natural phenomenon:

Natural phenomena are climatologically, hydrological or geological processes that offer no threat to human life or property.

Definition of an emergency situation:

Whereas a disaster is limited to a specific timeframe within which life and essential property is directly threatened, an emergency situation covers a more general timeframe within which:

There are clear signs of deterioration in the capacity of a group or a community to survive; this group or community can only be maintained through extreme initiatives by another group or community or through external interventions.

4.1 VULNERABILITY: POSSIBLE DISASTER CIRCUMSTANCES

An assessment of the vulnerability for disasters was done for the Ubuntu Municipal region. The following were identified as the most possible disasters:

Natural Disasters:

i) Flooding

ii) Drought
iii) Locust and Gnat plagues
iv) Gusts (rukwinde)
v) Veld Fire
vi) Plague Infestation

Disasters of Human Origin

i) Epidemics
ii) Chemical and Industrial accidents
iii) Pollution
iv) Social and Political unrest
v) Road accidents

PART 1

NATURAL DISASTERS

A) FLOODING

Casual Occurrences:

Natural flash flooding in rivers because of intense rain of flooding associated with seasonal weather patterns or human manipulation of water catchments, drainage basins, flood levels and dam wedging.

General Characteristics:

- Flash floods – accelerated dispersal of water, dams that break or dam walls that give way;
- River flooding – slow build up, generally seasonal, in river systesm;
- Factors that affects the danger: Depth of the water
  Duration of flow
  Speed of the water
  Speed at which water rises
  Frequency of occurrence
  Seasonality

Predictability:

- Floor predictions – seasonal patterns, capacity of drainage basins or dam;
- Mapping of flood levels; census by air and land;
- Early warning;

Factors that contribute to vulnerability:

- Location of settlements with regard to flood levels;
- Lack of awareness of flood danger;
- Reduction in absorptive capacity of the earth;
- Non existent buildings and foundations;
- High risk – elements of infrastructure;
- Unprotected food stores, harvests and livestock;

Typical negative effects:

- Physical damage – damage to structure;
- Earth movement of saturated ground;
- Casualties and Public health;
- Deaths – Drowning – Epidemics;
- Water supply – contamination of under ground and surface water;
- Crops and Food stores lost because of flooding;
- Animals, farm equipment and seeds lost due to floods;
- Mapping of flood levels and control over land usage;

Possible measures to reduce risk:

- Create awareness of imminent dangers;
- Flood control, canals, dams and flood protection controls erosion;

Specific Preparedness Measures:

- Flood disclosure;
- Early warning;
- Warning systems;
- Creation of awareness (participation by community);
- Contingency planning;
- Master plan for control of flooding;

Typical Disaster needs:

- Search & Rescue, Evacuation;
- Medical assistance;
- Disaster Estimation;
- Provision of water / Water purification;
- Provision of food (Short term);
- Epidemiological surveillance;

- Temporary shelters / accommodation;

Instruments to Estimate Impact:

- Forms to assess damage – land and air surveys;

B) DROUGHTS

Casual Occurrences:

- Immediate cause – lack of rain;
- Underlying causes - ELNINO
  High temperatures because of heat waves
  Human engineered changes to earth surface

General Characteristics

- Reduction of water and availability of moisture;
- Reduction in rainfall;
- Reduction in water sources;
- Agricultural droughts / no moisture in the ground;

Predictability:

- Periods of drought is normal in all weather systems;
- Rainfall and hydrological data must be accurately analyzed, there are factors that influence the prediction of droughts, early warning is usually possible;

Factors contributing to vulnerability:

- Location in arid regions;
- Farming in border areas – subsistence farming;
- Lack of a contribution from agriculture to improve harvest;
- Regions dependent on other weather systems for water supply;
- Regions within which moisture retention is low;
- Lack of recognition and allocation of resources for drought restrictions;

Typical Negative Impact

- Reduction of income;
- Reduction in spending in agriculture sector;

- Increase in price of staple foodstuffs;
- Higher inflation rate;
- Reduction in value of food;
- Starvation / diseases / deaths;
- Reduction in sources of water;
- Migration;
- Disruption of communities;
- Loss of livestock and harvests;
- Unemployment;

Possible measures to reduce risk:

- Early warning regarding drought and starvation;

Typical Disaster needs:

- Measures to maintain food security;
- Price stability;
- Food subsidies;
- Job creation programs;
- Supplementary food programs;
- Special programs for livestock and cattle farmers;
- Complimentary water and health programs;
- Rehabilitation;

Instruments to estimate impact:

- Feeding surveys;
- Socio-economic surveys;
- Monitoring of rainfall and hydrological data;
- Satellite images;

C) LOCUST AND GNAT PLAGUES

Casual Occurrences:

An increase in hatching due to one or a combination of ecological, climatologically and hydrological factors including temperature and changing water flow.
Plagues are seasonal and occur periodically.

General Characteristics:

- Locusts – plant growth is destroyed especially grass;
- Wheat, maize and other irrigation crops are destroyed;

- Gnats – damages the eyes and ears of animals;
- Animals lose weight;
- Animals die;
- Allergies by humans;

Predictability:

- Predictability is dependent on the control measures and the stage of development in which the insects find themselves.

Factors that contribute to vulnerability:

- Huge numbers hatch and are not controlled;
- The lack of control measures and insecticides;
- Limited resources;
- Inaccessible areas;
- Unreported plagues;

Typical negative effects:

- Loss of crops leads to food shortage;
- Pasture damaged;
- Loss of animals and occurrence of disease (gnats);

Specific Preparedness measures:

- Institution of a national, provincial and local plan for pest control;
- Training of Government, provincial and local personnel with an extension to the farming community;

Typical Disaster needs:

- National, International, provincial and local control measures;
- Provision of required food supplies;
- Provision of Government assistance;

Instruments to estimate impact:

- Estimation of occurrence and degree of infestation;
- Air and ground surveys of damage to crops;

D) GUSTS (RUKWINDE)

Casual Occurrences:

A combination of heat and moisture results in a low-pressure nucleus over the oceans in the Tropics where the temperatures are higher than 26°C.

The wind whirls and aggregates around the increasing low pressure as it accelerates towards the center. The column is driven by Passat winds.

The low-pressure area becomes a tropical cyclone when the wind reaches gale force or 177 km per hour.

General Characteristics:

- When the cyclone hits land it results in strong winds with exceptional rainfall and gales; secondary flooding and earth movement occur.

Predictability:

- Tropical cyclone and gusts can be traced from their origins;
- Accurate predictions as to when it will hit the land is generally one hour before the time;
- Unpredicted changes in direction can occur;

Factors that contribute to Vulnerability:

- Settlements established in lower lying regions;
- Settlements in border regions (heavy rainfall with flooding);
- Weak communication and warning systems;
- Light structures, old structures and poor construction;
- Infra-structural elementary roads and bridges;

Typical negative effects:

- Physical damage – structural damage due to wind, flooding, gales and earth movement;
- Casualties and poor Public Health can be caused by debris that is blown around or by flooding that causes contamination of water sources that in turn leads to viral epidemics and malaria;
- Water supply: ground water can be contaminated;
- Crops and food supply strong winds and rain can damage crops on land and food stores;
- Communication and logistics – large scale disruptions are possible as telephone lines, power lines, antennas and satellite dishes are destroyed; transport and repairs are restricted;

Possible measures to reduce risk:

- Risk estimates and mapping of obstacles;
- Control over land usage and management of flood levels;
- Reduction of structural vulnerability;
- Improvement of vegetative ground cover;

Specific Preparedness to reduce risk:

- Public warning systems;
- Evacuation plans;
- Training and community participation;

Typical Disaster needs:

- Evacuation, emergency accommodation, supply of food, search and save;
- Medical assistance;
- Water purification;
- Re-establishment of logistics and communication;
- Disaster assessment;
- Spiritual assistance and support;

Instruments to estimate impact:

- Forms to assess damage;
- Air and ground surveys;

E) EARTHQUAKES

Casual Occurrences:

- Earthquakes are mostly caused by movement of crust rock formations along breaking or pressure areas and changes towards new directive lines.

General Characteristics:

- Earth tremors caused by waves below the earth's surface results in
  - Surface destruction;
  - After shocks and vibrations;
  - Melting;
  - Earth movement;

Predictability:

- The probability of occurrence can be determined but not with accurate timing;
- Predictions are based on the monitoring of seismic activity, historic occurrences and observations;

Factors that contribute to Vulnerability:

- Location of settlements in seismic regions;
- Structures that are not resistant to earth movement;
- Concentrated buildings with high occupancy levels;
- Lack of knowledge regarding the risk associated with earthquakes;

Typical negative effects:

- Physical Damage
  - Damage to structures, infrastructures, fire, earth movement and flooding;

- Casualties
  - Often high in densely populated areas and where buildings are not resistant to earth movements;

- Public Health
  - The most common problem is fractures. Water sources are polluted; Sanitation systems collapse; storage of corpses of the deceased and carcasses of animals;

- Water supply
  - Water networks are damaged resulting in huge problems; open pits and boreholes are polluted; surface changes;

Possible measures to reduce risk:

- Mapping of obstacles and the creation of public awareness, training, estimation and the reduction of structural vulnerability;
- Control of land usage or zoning as well as the application of building standards and good building practices;
- Insurance;

Specific preparedness measures:

- Earthquake warning and preparedness programs;
- Media and radio communication;

Typical disaster needs:

- Search and rescue;
- Medical emergency treatment;
- Damage needs and assessment programs;
- Assistance;
- Emergency accommodation / provision of food;
- Mortuaries / funerals;
- Repair and reconstruction;
- Economic recovery;

Instruments to estimate impact:

- Earthquake scales;

F) VELD FIRES

Casual occurrences:

- Excessive seasonal rain during growth season;
- Excessive grass and foliage;
- Heavy weather activity with static electricity and strong wind;

General Characteristics:

- Valuable grazing is destroyed;
- Ecological balance is disturbed;

Predictability:

- The probability of occurrence can be determined but without any precise timing;
- Prediction is based on the density of plant growth caused by development;

Factors that contribute to vulnerability:

- Excessive and exuberant growth of grasslands as well as heavy weather activity;
- Inaccessibility of large areas;

Typical negative effects:

- Physical damage - destruction of valuable grazing

Infra-structural damage (power lines, telephone lines, fences)
Destruction of animal and plant life: destruction of plant life with a negative impact on the economy;
Drought conditions are enhanced;

Possible measures to reduce risk:

- Creation of public awareness, training and establishment of fire fighting associations, creation of fire breaks.

Specific preparedness measures:

- Regular communication with rural inhabitants and the provision of regular guidance;
- Use communication channels to reduce risk:

Typical disaster needs:

- Fire fighting equipment and water pumps;
- Compilation of a fire contingency plan;
- Medical emergency treatment;
- Sufficient fire fighting training;
- Human resources and transport;
- Assistance;
- Economic recovery;

Instruments to estimate impact:

- Mapping of damage through air and ground surveys;
- Evaluation of contingency plan;

G) PLAGUE INFESTATION

Casual occurrences:

- Increase of plague numbers due to one or a combination of ecological temperature changes, monoculture of harvests, import of used tools, import of seeds, plague species, the effect of insecticides, conducive weather patterns and migration;

General Characteristics:

- Crops and plants can be damaged in a variety of ways, e.g. partial or total destruction of the crops;

- Crop infestation, tunnels drilled into stems, attack on the root system, application of pesticides;

Predictability:

- Prediction of plagues is dependent on the cost-effectiveness of the pesticide;
- Study the development phase of the plague in order to determine the economic threshold;

Factors that contribute to vulnerability:

- Large numbers and variations of plagues;
- Lack of control over import of tools, plant products and seeds;
- Restrictions on resources to prevent and treat plague infestation;
- Inaccessible areas makes the monitoring of crops difficult;
- Under development of agricultural technology;

Typical negative effects:

- Loss of crops results in food shortage even starvation that places untoward pressure on the economic system resulting in impoverishment;
- Unemployment enhanced;

Specific preparedness measures:

- Establishment of National, Provincial and Local plans for plague control;
- Training of Government, provincial, local personnel with extension to the farming community;

Typical disaster needs:

- National , International, Provincial and Local control measures;
- Provision of food;
- Provision of government assistance;

Instruments to estimate impact:

- Estimation of occurrence and the degree of infestation;
- Air and ground surveys of damage to crops;