

DISASTER CONTINGENCY PLAN FOR

EXTREME HEAT



**NAMAKWA DISTRICT MUNICIPALITY
MARCH 2023
LJ VERMEULEN**

EXTREME HEAT CONTINGENCY PLANS

1. PREAMBLE

Extreme weather patterns are a result of climate change, and it is of paramount importance to look at the definitions by different sources on how they define climate change.

According to dictionary.com, climate change is defined as a long term change in the earth's climate especially a change due to an increase in the average atmospheric temperature. It further indicates that, climate change can be natural or caused by changes people have made to the land or atmosphere.

Eco life defines climate change as a long-term shift in weather patterns in a specific region or globally. It further indicate that, climate change is caused by human activities that, have resulted in an increased concentration of greenhouse gases in the atmosphere, including carbon dioxide, water vapour, methane, ozone and nitrous oxide.

The effects of climate change are *inter alia*:

- (i) Increased surface temperatures
- (ii) Rise in sea levels
- (iii) Retreat of glaciers and melting of sea ice
- (iv) Changes in precipitation
- (v) Increases in intensity of extreme weather events such as heat waves, tornadoes, hurricanes and heavy rainfall
- (vi) More and longer droughts
- (vii) Expansion of sub-tropical deserts
- (viii) Species endangerment and extinction and loss of biodiversity
- (ix) Melting of permafrost- which in turn speeds global warming
- (x) Drops in agricultural yields
- (xi) Spread of vector borne diseases because of increased range of insects
- (xii) Acidification of oceans creating drops in fishing yields and death of choral reefs
e.t.c

The above factors are very serious and will have a severe negative impact on the more vulnerable developing nations. Whilst there may be more solutions to climate change by scientists but of critical is that, we must slow the flow, to stop altogether and re-absorb greenhouse gas emissions.

According to the Natural Resource Defence Council, carbon pollution is the main reason the planet is getting hotter, increasing the chances of weather disasters, drought, and floods as well as hurting the planet. It is said that, climate change is the single biggest environmental and humanitarian crisis of our life time.

The earth's atmosphere is overloaded with heat-trapping carbon dioxide which threatens large scale disruption in climate disastrous consequences. Climate change is changing our economy, health and communities in a very diverse way.

For purposes of this contingency plan, we shall look specifically at the extreme hot weather which also has devastating effects to the environment which must not go unnoticed.

2. WHAT IS EXTREME HEAT?

Extreme heat is defined by the Centre for Diseases Control and Prevention as summertime temperatures that are substantially hotter and/ or humid than average for a certain location at a certain period of the year. Extremely dry and hot conditions can cause dust storms resulting in low visibility.

Droughts also occur when a long period of time passes without substantial rainfall. It therefore of paramount to understand that, a heat wave combined with drought is a very dangerous situation.

WHO IS MORE AT RISK OF EXTREME HOT TEMPERATURES?

Whilst everyone may be at risk of extreme hot temperatures, it worth noting that, the elderly (65 and older), infants, children and people with chronic diseases are more or highly at risk or prone to heat stress. Measures therefore have to be put in place to ensure that, such people are taken care of during such conditions as part of mitigating the effects of extreme hot temperatures.

Heat related illnesses and deaths are preventable yet on annual basis people still die as a result of extreme hot temperatures. In accordance with the Centre for Disease Control and Prevention of extreme heat prevention guideline, people suffer heat-related illnesses when their bodies are unable to compensate and properly cool themselves. The body normally cools itself by sweating, but under certain conditions, sweating is not enough.

In such cases a person's body temperature will rise rapidly and very high body temperature could damage the brain and other vital body organs. There are quite a number of factors that affect a person's body ability to cool itself during extreme hot weather patterns.

When the humidity is high, sweat will not evaporate at a desired rate or quickly as the body would want to and thus preventing the body from releasing heat quickly. Other conditions related to high risk may include:

- Age
- Obesity
- Fever
- Dehydration
- Heart Diseases
- Mental Illnesses
- Poor blood circulation
- Sunburn
- Prescribed drugs and
- Alcohol use

Remember that, above it was indicated that, extreme heat causes the body to sweat, when the body sweats heavily it removes salts and minerals from the body that are essential for the functioning of your body organs.

3. WHAT TO DO DURING EXTREME HOT WEATHER CONDITIONS

3.1 REPLACE SALTS AND MINERALS

Salts and minerals need to be replaced in the body especially when exercising; it is advisable that you drink two to four glasses of cool, non-alcoholic fluids each hour. Sports beverages can replace salts and minerals in your body but those on special diets (especially low salt diet) must consult their doctors to be on a safe side.

3.2 WEAR APPROPRIATE CLOTHING

During extreme hot weather conditions wear as little clothing as possible especially when at home. Such may be lightweight, light coloured, loose fitting. Sunburn is one other condition associated with extreme hot temperatures; this condition affects the body's ability to cool down itself and causes a loss of body fluids. It causes pain and damage to the skin.

When engaging on outdoor activities make sure that the following is adhered to:

- Protect your body from the sun by wearing a hat and sunglasses
- If possible put on sunscreen
- Limit outdoors activities to the morning and evening
- Rest in shady areas more often to allow the body's thermostat a chance to recover.
- Where possible stay indoors in an air-conditioned place
- If at home there is no air-conditioner visit places that have such, such as the mall, library e.t.c. a few hours in cool place can yield positive results in mitigating the effects of extreme heat.
- Take a cool shower using cold water
- When at work, it is advisable that, the condition of colleagues or co-workers is monitored due to the fact that, heat induced illnesses can cause confusion and/ or loss of consciousness.
- Ask your employer to provide fluids whenever necessary especially for emergency personnel who at times are compelled to work under very extreme conditions
- Visit adults at risk at least twice a day, observe any symptoms for heat exhaustion or stroke.
- Watch more often infants and young children
- Look out for dehydration symptoms and replenish

- Never leave children whatsoever in a car even if the windows are open
- Avoid hot foods and heavy meals- they add heat to body temperature
- Drink plenty of fluids
- Limit sun exposure during midday
- Provide plenty of fresh water for pets as well and keep it in shady area

4. HEAT STROKE

Heat stroke is the process whereby the body is unable to regulate its temperature; it rises rapidly whilst the sweat mechanism fails resulting in the body being unable to cool down.

4.1 SYMPTOMS OF HEAT STROKE

Such symptoms may vary but include the following:

- High body temperature
- Red, hot and dry skin with no sweating
- Rapid strong pulse
- Throbbing headache
- Dizziness
- Nausea
- Confusion
- Unconsciousness

If the above symptoms are seen from someone, you may be dealing with a life-threatening emergency and it is advisable that urgent emergency services are called and do the following while waiting for assistance:

- Place the victim in a shady area
- Cool the victim rapidly especially cold with cold water
- Monitor body temperature continuously until assistance arrive
- Do not give the victim fluids to drink
- If there is vomiting make sure the airway is kept clear and turn the victim on a side
- Uncontrollably twitching of muscles, make sure the victim does not injure himself or herself and do not place anything in his or her mouth

5. HEAT EXHAUSTION

This is a milder form of heat related illness that can develop subsequent to several days of exposure to high temperature with inadequate or unbalanced replacement of fluids. It further indicated that, heat exhaustion is as a result of excessive water and salts contained in sweat.

5.1 HEAT EXHAUSTION SYMPTOMS

- Heavy Sweating
- Paleness
- Muscle Cramps
- Fatigue
- Weakness
- Dizziness
- Headache
- Nausea or vomiting
- Fainting
- Skin cool and moist
- Pulse rate fast and weak
- Breathing fast and shallow

It is of paramount importance to fully understand that, if heat exhaustion remains untreated can result in heat stroke which can have devastating consequences.

6. HEAT RASH

Heat rash is a skin irritation caused by excessive sweating during hot, humid weather. In case of this condition it is advisable that provision of a cooler be made, move to a less humid environment and keep the affected area dry. Dusting powder may also be utilized to reduce discomfort.

7. ROLES AND RESPONSIBILITIES

ROLES AND RESPONSIBILITIES			
SECTOR	PREPAREDNESS	RESPONSE	RECOVERY AND REHABILITATION
Local and District Municipalities	Conduct awareness campaigns to communities about the dangers of extreme hot weather conditions	Liase with Emergency Medical Services to transports the affected to medical institutions for medical attention	Just follow up to verify if the affected people did receive medical attention
	Distribute early warning information to local municipalities and other sector departments, including private sector on anticipated extreme hot weather patterns	Where necessary make referrals to the clinics and hospitals for professional medical attention	Just follow up to verify if the affected people did receive medical attention
	Inform and update on daily basis, its employees especially those working outdoors about the increase of temperature and precautions to be taken and where necessary recommend salt and mineral replacement fluids to be taken	Provide first aid whilst awaiting response by emergency medical services or any mode of transport safe enough to transport the sick to a medical institution	Follow up on conditions of affected employees and ensure that such is reported to the department of labour in terms of COID Act.
	Encourage personnel to take cover on shaded areas during their resting period and resting intervals must be encouraged to be more to allow the body to cool, specifically to outdoor workers		
	Where the municipality has capacity to provide replenishing drinks to assist those dehydrated	Provide such drinks to the employees	Follow up on conditions of the affected employees

Department of Health	Stock adequate medication to assist patients with medical conditions associated with extreme heat	Attend to the affected patients as and when they arrive at the medical institution	Cascade information to relevant authorities on number of patients admitted in the medical institution
	Provide awareness to people visiting the clinics and hospitals about the dangers of extreme heat patterns and the precautions thereof		
	Ensure mobile clinics are in place in order to reach the most remote sparsely communities to provide primary health care		
	Mass treatment area with air-conditioners may be made available in case a number of people require treatment at the same time		
Emergency Medical Services	Ensure emergency transportation of patients to the clinics and hospitals	Provide first line medical assistance/ medical aid	Always ensure a state of preparedness
Community	Avoid outdoors activities by all possible means	Assist those affected and call for emergency medical services	In case of mass casualties assist in whatever way you may be requested to
	Seek cool areas for shelter		
	Listen to advices as provided by professionals and as well on the radio		
	Phone the emergency services for medical attention to those severely affected		