

**Report on Lessons Learnt Meetings: Lightning Strikes:
Nguwanyana School, Mangwe District and Ntalale
School, Gwanda District: Matebeleland South Province**

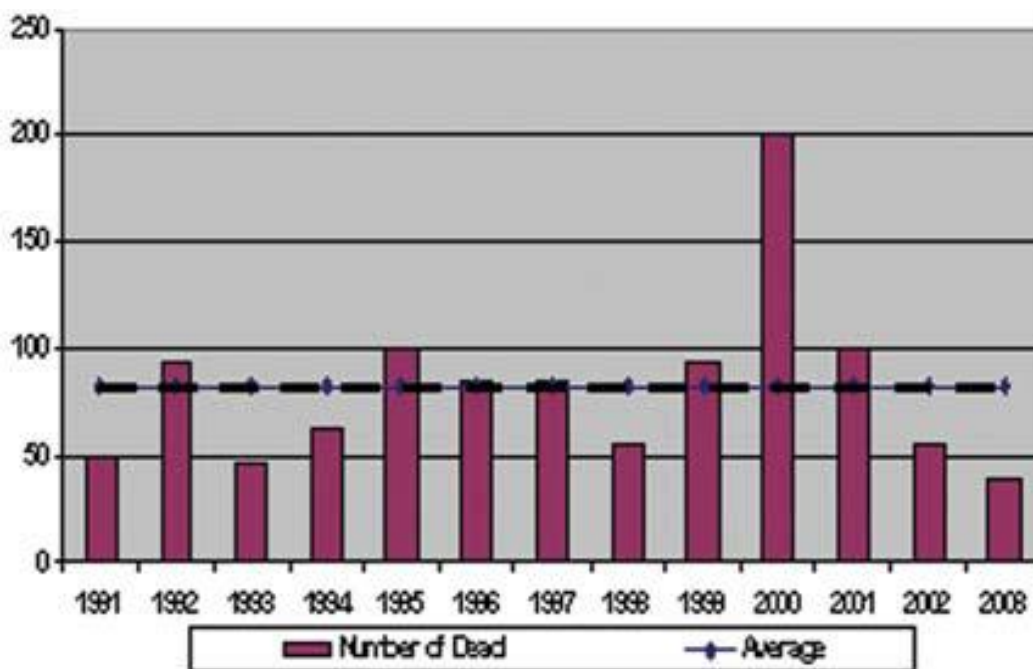


Compiled

Department of Civil Protection

Background

Zimbabwe experiences unprecedented lightning incidents every rain season, killing an average of 83 people a year and injuring several hundreds more, mostly children, as well as livestock and property damage. Some cases of lightning related deaths and injuries go unreported particularly in remote rural areas of the country. The average number of people who are either killed or injured may be more than indicated.



Reported lightning incidents

Of recent, thirty school children and their teacher were struck by a lightning bolt at Nguwanyana primary school in Mangwe district on 15th February 2012. The lightning killed 2 female pupils on the spot and the remaining 28 pupils and their teacher sustained injuries. In a separate incident which occurred during the same month on 23rd February, 2012, eleven children from Natale Secondary School were struck by a lightning bolt in Gwanda district. The lightning killed 2 children on the spot while the remaining 9 sustained injuries.

It was against this background that the Department of Civil Protection together with representatives of the National Civil Protection Committee conducted two lessons learnt meetings on lightning incidences from the 11-14 June 2012. The workshops were necessitated by the increase in lightning incidences affecting school children.

Overall Aim:

The workshops aimed to promote awareness on the lightning hazard and reduce the risk to lightning strikes among school children.

Objectives:

- To review the lightning incidents
- To draw lessons from the incidents
- To map the way forward on management of the risk to lightning in schools

Facilitators

Ms Ndlovu- Civil Protection Department

Mr Chipindu – University of Zimbabwe- Physics Department

Mr Mutubuki – Ministry of Education, Art, sports and Culture

Mrs Turo – Parirenyatwa Hospital Mental Health

Mr Jengwa – Department of Social Amenities

Mr Betera – Civil Protection Department

Mr Gutsi - Civil Protection Department

Mr Makonza- Civil Protection Department

Mr P. Gombe- Civil Protection Department

Day1. 12/06/ 2012

Ntalale High School

Welcome remarks , introductions and purpose of the meeting

Members were welcomed by the school Headmaster. The meeting was advised that the current headmaster joined the school after the lightning incident. The former headmaster was however invited for the meeting. After introductions, the Assistant District Administrator, Mrs Gwaze informed participants about the purpose of the meeting which sought to promote awareness on lightning hazard and reduce the risk to lightning strikes among school children.

Brief on Civil Protection Policy

The Deputy Director Civil Protection Ms S. Ndlovu briefed the meeting about what Civil Protection is all about and what the organisation is mandated to do.

Account of lightning event and its management

The meeting was briefed by school staff members who were present during the fateful day. Information obtained was that school children were sent to fetch water outside the school premises as the local water source was not functional. This happened in the background of a thunderstorm that was approaching the school. As the girls were returning from the water point, a lightning bolt

truck two trees from either side of the path. The two girls who died were found lying between the two trees that were truck and those who were either injured or shocked were found scattered around the incident site. The incident left all the teachers, community members and school children in a state of shock.

Some school children absconded from school for almost three weeks after the incident for fear of more lightning strikes at the school.

Management of the incident

- Affected children were attended to and taken to hospital for treatment,
- Resources constrains and poor coordination during the management of the incident was cited,
- Communication with the District and Provincial Administrator's offices
- Counselling of school children was conducted by community members, nurses, ZRP officers and teachers,
- Moral and material support from neighbouring schools,
- Prayer sessions were organised by local pastors
- Some parents were assisted to travel to Gwanda Hospital to see their children,

What could have been done better?

The meeting discussed about what could have been done better and came out with the following;

- Teachers should take hid of hazards associated with the rainfall season and avoid conducting risk activities
- Children should always conduct their activities under the supervision of a teacher,
- Members of the community thought that water source should be within the school premises,
- Informative material on hazards should be distributed into schools as people did not know what to do with children who were struck by lightning,
- First AID training for teachers and other community members was underscored,
- Communities indicated the need for an early warning and alert mechanism for potential hazards,
- Community members indicated the need for School Development Committee to come up with an emergency fund to enable them to respond to incidents before the involvement of other external stakeholders,
- There was inadequate socio- psycho support hence communities indicated that there is need to organise a group of local counsellors,
- Parents / guardians of the affected children were not visited for both post trauma counselling and socio-psycho support
- Teachers were also supposed to receive group post trauma counselling,
- The school was suppose to have a Health Master and a first aid kit

Scientific Basis for lightning

The meeting was made to understand the basics of lightning and how it becomes hazardous. He informed the meeting that clouds are electrically charged and, therefore, lightning is electrical in nature. He further explained using diagrams that charge separates in a cloud with positive moving up and negatives down. Once a significant charge separation has built up, the cloud can induce a positive charge in the ground. Step leaders will form and reach out to the ground. Streamers can come up from the ground to meet them. Once a pathway is completed the spark forms neutralizing the charge. As the negative charge races down the air heats up usually at the ground end first and a light goes up to the cloud. The electrical discharge, lightning, results in heating up the atmosphere immediately around the lightning strike causing a shock wave and thunder. The lightning can actually heat the area in the general vicinity to 20,000 degrees. It was stressed that lightning cannot be seen by a human eye, but what we see is the light. The flash and the resultant thunder both occur at the same time, but we hear the thunder long after seeing the lightning because light travels faster than sound. Electricity travels the easiest path between the earth and the other place. This is why lightning commonly strikes the tallest object in the area. Electricity finds it hard to travel though air as it has low conductivity. Trees, buildings, towers and other pointed tall objects including human beings conduct electricity much better and can be struck by lightning.

The presenter also dispelled the myth that lightning leave “eggs” where ever they occur. He said that its the soil which is heat under very high temperatures of about (20 000 degrees) which melts and later solidify to form a hard crust. Traditional healers who are paid dearly for cleansing places struck by lightning dig out these crusts of soils and call them “eggs”.

Met services

Mr Mugumbate from Met Services Department complimented Mr Chipindu s’ presentation with quite a number of precautionary measures to take during a thunder storm. He advised that people should not be engaged in ploughing; not to wash plates ; not use umbrellas; not to ride on a bicycle; not travel in open vehicles ; avoid standing under prominent trees among others.

Emergency Preparedness for schools

Mr Mutubuki from Ministry of Education, Art Sports and Culture highlighted on policies that serve to protect children within the learning environment. He said that such police circulars were disseminated to schools in order to enforce issues of safety in schools. The meeting was advised that each school should have a health master/ mistress to look after the general health of children and teachers as well. Guidance and counselling should also be provided for in all schools. He also added that children should be educated on different types of hazards and children should not attend to strangers that visit the schools.

He further emphasised the importance of team work adding that **Together Each Achieves More (TEAM)**. The school was applauded for working together with the community as was evidenced by a well coordinated response to the lightning incident.

Psycho-social support

Mrs Turo form Parirenyatwa Hospital underscored the need for psycho-social support to lightning victims. She said that there was need for individual counselling for parents /families and children affected by lightning and also group counselling for teachers and the rest of the children. Children

who died were coming from poor backgrounds hence the need for psychosocial support. The parents also need material support.

Way forward

- Trees are natural lightning conductors and are known to provide protection against lightning damage to nearby buildings by diverting lightning strikes away from structures. Schools were recommended to grow trees around the school premises,
- There is need to distribute IEC materials for different types of hazards to schools,
- There is need for socio-psycho support for bereaved family members,
- Parents with children who survived and teachers also require group counseling,(to be organised by the Department of Civil Protection in July of August 2012)
- Further in-detail research by Mr. Chipindu was scheduled for July or August 2012,
- The SDC will rehabilitate school infrastructure in conformity with prevailing standards / regulations,(1 month time frame),
- Public Works to support and supervise construction issues
- The school should come up with an emergency preparedness plan within 3 months.
- District Civil Protection Committee to support planning through RDDC
- The Province will follow up on all issues agreed,
- EPR manual training for Mat South Province will be organised in due course

Mangwe District: Nguwanyana Primary School :13/06/12

Welcome remarks, introductions and purpose of the meeting.

Members were welcomed by the school headmaster. The Head Master appreciated the Department Civil Protection for organising a follow up programme . Introductions were made and the District Administrator informed participants about the purpose of the meeting which sought to promote awareness on lightning hazard and reduce the risk to lightning strikes among school children.

Brief on Civil Protection policy

The Deputy Director Civil Protection Ms S. Ndhlovu briefed the meeting about what Civil Protection is all about.

Account of lightning event and its management.

The meeting was briefed by school staff members who were present on 15th February 2012 when the lightning struck. Information obtained was that there were no signs for for a thunder storm around the school though it was threatening to rain. However, thunder storm activities were being observed about some ten kilometres away from the school. As the afternoon approached pupils went out of their classrooms heading towards the school grounds for lunch break. Moments later a lightning bolt struck. One teacher said that there was an unusual spark along an electricity supply line leading to

the headmaster's office . A lady who was sitting in the headmaster's office was thrown to the ground from the bench where she was sitting since the wall behind her had an electric socket. Another instantaneous observation was a spark which followed the fence that runs right round the school grounds. Soon afterward the children came rushing to the headmasters office complaining that there was a problem with their fellow students outside the and other teacher rushed to the scene and saw 32 children scattered around lying on the ground a few meters from either side of the fence. The school was gripped by panic and mayhem.

A local business man who got the air of the mishap quickly organised a truck to ferry the affected pupils to hospital. Among the 12 pupils who were ferried 2 of them were proclaimed dead upon arrival and the others were treated for burns. Most of the children were injured as their uniforms were scotched and torn up. Due to traditional beliefs, one parent took her child home without being treated. The affected children were in grade six and were said to be from the same class. The incident left all the teachers, community members and school children in a state of shock. One parent whose child was also struck said that she was shocked and her daughter was still traumatised. Any noise could still affect her.

Teachers and some members of the School Development Committee said that the area has a long history of lightning strikes. Members were informed that the nearby secondary school even relocated the playing ground due to lightning strikes. After the lightning bolt, the area did not receive any meaningful rainfall.

Management of the incident.

- Affected children were attended to and taken to the hospital for treatment.
- Good coordination during the management of the incident by school was cited however resource constraints such as a school vehicle, first aid equipment lacked.
- Communication with the District and Provincial Administrator's offices was done and some members of the District Civil Protection Committee visited the parent guardians of the children who died.
- Counselling of the school children was conducted by the community members, nurses, ZRP officers and teachers as some pupils had stopped coming to school for three weeks. .
- Parents were assisted to travel to the hospital to see their children.

Lessons learnt

- School teacher can be relied on as the first health care providers to attend to the children.
- The community surrounding a school is very helpful as evidenced by the role played by the Ngwanyana community during the management of the incident.
- It appears the Ngwanyana has a history of events related to lightning bolts that have occurred in the area,.
- Some kind of counselling was done how the teachers themselves were still in shock and frightened by the event.
- Teachers should take hid of hazards associated with the rainfall season to avoid conducting risk activities.
- Children should always be under the supervision of teachers.

- Informative material on hazards should be distributed into schools as people did not know what to do with the children who were struck by lightning.
- First Aid training for teachers was underscored.
- Communities indicated the need for an early warning an alert mechanism for potential hazards.
- The school should come up with an emergency fund to enable them to respond to disasters before the involvement of external stakeholders.
- There was inadequate psycho-social support hence communities indicated that there is need to organise a group of local counsellors to do the job.
- Parents and guardians of the affected children were not visited for both post trauma counselling and socio-psycho support.
- Teachers were also supposed to receive group post trauma counselling.
- The school was supposed to have a health Master and a first aid kit.

Scientific basis for lightning

After a tour of the site where children were struck by lightning, Mr Chipindu informed the meeting about the physics of lightning (details already provided). The presentation helped to dispel the myth around lightning and the members who had a gloomy understanding of lightning were left with better understanding of the phenomenon.

The presenter also highlighted that areas with granite rocks are high conductive since granite rocks produce gamma rays which provide an easy path for electricity flow. Hence places with granite rock are most likely to be struck by lightning.

The presenter also highlighted that when lightning strikes a tall object for example a steel pole which has its base in the soil, current can flow through it and move through the soil. The charge that moves through the ground can electrocute a person who is standing or walking nearby. This is because a human being provides an easy path for the current to flow. Basing on this explanation, he suggested that the current that affected the children might have come from the fence through the ground to the children.

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Emergency Preparedness for schools

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The way forward.

- ❖ Training on first aiders including members of the community – (immediate and on going)
- ❖ Under take activities to protect the school infrastructure from lightning hazards, (before the next rainfall season)
- ❖ The school should consider growing of trees around the school as an ongoing project,
- ❖ Feedback to other community members and teachers who were not present (within one week).
- ❖ Emergency preparedness planning workshop, which will also involve the community .to come up with an emergency preparedness plan.
- ❖ Public awareness campaigns on lightning to take advantage of community meetings that are held every Wednesday. This should start with staff development
- ❖ The school to spearhead the scientific explanation of lightning to the community,
- ❖ The SDC should engage in maintenance of school infrastructure as a matter of urgency,
- ❖ The District Civil Protection Committee and RDDC to support school programs,
- ❖ To liaise with partners for the psycho social support, (on going.
- ❖ Met Office to explore on the establishment of (RANET) RADIO NETWORK by end of 2012.(to follow up with Dr Chipindu)
- ❖ Extend lightning awareness information to the other schools within the district, on going.
- ❖ Set up an emergency response fund by the end of 2012.
- ❖ Training of trainer for first Aid.

- ❖ Department of Civil Protection will organise District Civil Protection committee workshop by the end of 2012.
- ❖ To distribute (IEC) material including films and fliers.
- ❖ To increase support visits to districts.
- ❖ To request met set up Lightning counters,
- ❖ To carry out post traumatic and psycho social support before end of August 2012.
- ❖ SDC to strengthen Environment Committee.