

**DEVELOPING A LOCALISED SCHOOL SAFETY AND  
HEALTH MANUAL FOR SEFULA SECONDARY  
SCHOOL IN WESTERN ZAMBIA**

by

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**A Thesis Submitted to the University of Zambia in Fulfillment of the Requirements  
for the Degree of Doctor of Philosophy in Environmental Education**

**The University of Zambia**

**Lusaka**

**2018**

## DECLARATION

I, **Kaiko Mubita**, hereby solemnly declare that this thesis represents my own work and has not been previously submitted for a degree at the University of Zambia or any other University and that it does not incorporate any published work or material from another University.

Signed \_\_\_\_\_

Date \_\_\_\_\_

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## APPROVAL

This thesis by **Kaiko Mubita** is approved as fulfilling the requirements for the award of the degree of Doctor of Philosophy in Environmental Education by the University of Zambia.

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## **DEDICATION**

To all stakeholders of Sefula Secondary School

## **ACKNOWLEDGEMENTS**

Firstly, I wish to give thanks to the Almighty God for sustaining my life and preserving me throughout the study period for the degree of Doctor of Philosophy in Environmental Education.

Secondly, my humble, special and sincere gratitude goes to my supervisor Professor C.M. Namafe for his parental guidance, encouragement and unwavering professional supervision, without which this work would have been a nightmare.

I wish to express my sincere gratitude to the staff, management and pupils of Sefula Secondary School and other key stakeholders for the provision of the much needed data for this study. Without their warm response, this study could not have been a success.

I also wish to acknowledge the support given to me by the entire Mubita family. They encouraged me to go on and finish my PhD work.

## ABSTRACT

This study proposes a localised approach to school safety and health management, using Sefula secondary school as a case study. In this regard, the aim of this study was to develop a localised school Safety and Health Manual by using ideas and practices of safety and health held by sampled participants of Sefula Secondary School. This aim was operationalised through the following objectives: (a) to assess the state of safety and health at Sefula Secondary School herein used as a case study (b) to establish ideas and practices of safety and health held by sampled participants of Sefula Secondary School (c) to develop a localised school safety and health manual for Sefula Secondary School based on items (a) and (b) above. The study sample consisted of 10 pupils, 7 teachers, 3 auxiliary staff from Sefula secondary school, 5 parents from Sefula community, 1 Education Standards Officer (ESO) from Mongu district education office and 1 Environmental Health Technologist (EHT) from Sefula clinic. Homogeneous purposive sampling was used to sample teachers, pupils and auxiliary staff, expert purposive sampling was used to select EHT and ESO while parents were selected using snow bowling. The study used an intrinsic case study research model. Data was collected using interview schedules, focus group discussion, observation and document review. Qualitative data collected was transcribed and analyzed as an ongoing process as themes and sub themes emerged. Moreover, a manual was proposed arising from the interpreted results, and such a manual reflects idiosyncratic hazards and risks of Sefula secondary school.

The main findings showed that, in addition to generally familiar hazards common to such educational institutions, Sefula secondary school had a variety of safety and health concerns unique to that school environment, for example, poor sanitary conditions, floods, bad company, threats posed by the Sefula stream and Sefula forest and so on. The study also deduced that safety and health concerns inherent at this school needed local solutions if they were to be fully managed because some of them were influenced by socio-cultural aspects of the Sefula environment. The study concludes that a localised school safety and health manual is more responsive to the needs of an individual school like Sefula secondary as opposed to a generic manual prepared at national, provincial or district level. This is partly because a localised school safety manual deals with specific safety and health issues peculiar to a particular school. To this effect, the study recommends that individual schools should be allowed to devise their own safety and health manuals to effectively respond to local needs.

**Key words:** Manual, School, School Safety, School Health

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## **CHAPTER ONE: INTRODUCTION**

### **1.1 Overview**

This chapter provides introductory information to this study whose orientation is on drawing up lessons which other schools could consider arising from this investigation on developing a localised School Safety and Health Manual, using Sefula Secondary School as a case study. Both the process (developing) and the product (the manual) will be the focus of the lessons to be drawn. The development of the manual was done with help of internal stake holders of Sefula secondary school. External stakeholders of Sefula secondary school could not be engaged due to logistical limitations. The stakeholders sampled by this study were teachers, pupils, parents, auxiliary staff, Environmental Health Technologist and the Education Standards Officer. Ideas of the sampled stakeholders on school safety, health and welfare management of the school were processed and incorporated in the development of the manual. The chapter also provides the background to the research, statement of the problem, research questions, research objectives, significance of the study, an outline structure of the whole thesis and ends by giving a summary.

### **1.2 Background to the Study**

Globally, the question of safety and health in schools and the child's right to receive quality education has been under the spotlight for some years. Thro (2006) contends that the opportunity to pursue formal education, particularly quality education, is meaningless unless the learner is able to pursue his or her educational rights in an environment that is both safe and secure. According to Christie, Butler and Potterton (2007:21) the purposes of schooling, which can be achieved only in a peaceful school environment, are: "to provide an environment where teaching and learning can take place; to prepare people for the world of work, nation-building and citizenship; to teach the values of society; and the development of the individual." From this portrayal, it is noticed that even societal values may have influence on school safety and health as presented by item 4.2.2 in chapter four of this study.

School Safety and health is an integral and indispensable component of the teaching and learning process. The Kenyan Ministry of Education (2008) contends that no meaningful



teaching and learning can take place in an environment that is unsafe and insecure to both learners and staff. It is, therefore, imperative that stakeholders in education foster safe and health school environments to facilitate increased learner enrolment, retention and completion in order to attain quality education.

As noted, safety and health play an important role in schools. Ensuring learner's safety and health has been part of the ethical framework for decades. Schools also have legal responsibilities for safety and it is an integral part of the educational framework in the Zambian Ministry of Education (Government of the Republic of Zambia, 1996).

School safety was given a major focus by the United Nations International Strategy on Disaster Reduction (UNISDR) when the 2006-2007 World Disaster Reduction Campaign was devoted to the theme '*Disaster Reduction Begins at School*'. This theme was chosen by UNISDR because (a) it was in line with priority 3 of the Hyogo Framework for Action 2005-2015: 'use knowledge, innovation and education to build a culture of safety and resilience at all levels and (b) schools are the best venues for forging durable collective values; and therefore, suitable for building a culture of prevention and disaster resilience.'

The World Health Organisation (2002) explains that unsafe and unhealthy learning environments result into poor conditions of learning environments. WHO (2002) also notes that a safe and healthy learning physical environment is an essential component of a health promoting school. The Independent Project Trust (IPT, 1999) confirms this by stating that a secure school environment has a very low risk of physical, emotional and psychological injury to its occupants. IPT (1999) further argues that a safe school is therefore a healthy school.

The United Nations Educational, Scientific and Cultural Organisation (UNESCO) and United Nations Environmental Programme (UNEP, 2004) also emphasise the importance of school safety by stating that, upgrading and construction of schools that will be relatively safe during the occurrence of disasters should be part of every nation's long term planning. UNESCO and UNEP (2004) went on to state specific reasons for which a school should be made safe as:

- to ensure safety as school buildings can save lives
- to provide refuge as schools can be utilised as shelter in times of emergency;

- to ensure continuity as education is sometimes interrupted in time of disaster and
- for preservation of resources or investment structures

The United States Department of Justice (2000) also notes that schools with serious security and health concerns are perceived as having compromised the learning environment and endanger learners and educators. Therefore, even a few incidences of insecurity in schools are unacceptable as they have the potential to negatively affect the learning atmosphere in schools.

The Zambia Environmental Management Act (2011) also records that ‘the right to clean, safe and healthy environment shall include the right of access to the various elements of the environment for recreational, educational, health, spiritual, cultural and economic purposes.’ This statement also highlights the importance of a safe and a healthy environment for the betterment of education.

Meanwhile, schools have a primary duty to safeguard the staff and young people in their care while at the same time creating the 'risk aware, but not risk adverse' citizens of tomorrow. Pupils and staff are entitled to a safe and healthy school learning environment. If pupils and staff do not feel safe and health, they may not stay focused during classroom lessons and other school activities.

School safety and health is important because in order for any learning to take place, a child has to feel that he or she is in a safe environment. If they are focused on other fearful issues, they could care less about what is being taught in the classroom. School safety is important for the protection of all learners and school staff from any form of psychosocial and physical insecurity. There is general agreement that all stakeholders including school administrators, staff, parents, learners, law enforcers, community leaders, the government and others have a critical role in creating and maintaining safe schools (Clarke and Rusell, 2009). Similarly, a healthy school is important because pupils and staff are free from disease, deaths and disabilities that may affect their education attainment.

In realising the importance of school safety and health, some governments in Africa and beyond have come up with intervention measures to the problem of safety and health in schools. Some governments have drawn guidelines for their schools to help manage safety and health issues. For example, the government of Kenya drew a safety manual for schools

in Kenya through its Ministry of Education (Government of Kenya, 2008). A multi-hazard approach manual on School Safety in Bangladesh was also developed in 2010 under DIPECHO SOUTH ASIA-V agreement between Asian Disaster Preparedness Centre (ADPC) and Plan Bangladesh and Islamic Relief Worldwide Bangladesh with technical inputs from Handicap International. In the United States of America (2008) a School Safety Manual was also developed by the Mississippi Department of Education's Division of School Safety as a guide for school resource officers, school safety officers, principals, superintendents and school board members on school safety management.

In Zambia, the Ministry of Education (Government of the Republic of Zambia, 1997) came up with guidelines to school buildings and infrastructure to help manage safety issues in schools with reference to infrastructure and not other components of school safety and health. The Zambian Ministry of Education also initiated the School Health and Nutrition Programme (SHN) in 2003 to address the poor health and nutrition that was noticed among learners in Zambian schools. Moreover, the Ministry of Education's policy document, *Educating Our Future* (Government of the Republic of Zambia, 1996) endorses the role of the school as a health affirming and health promoting institution for all pupils, and through them, for the community from which the pupils come and for the families which they eventually establish. The Ministry also recognises that good pupil, community and societal health are dependent on a healthy and safe environment. However, it is not clearly stated how this individual schools could go about in managing safety and health in the local context.

In spite of all the foregoing effort to help manage school safety and health in Zambia, there had still been reports of unsafe and unhealthy schools highlighted by the media. The Post Newspaper article of 20th November, 2012 titled '*A class meets under a tree in Mwalulemba village*' reports that pupils at Kalolwa Primary School in Chongo area in Kabompo East were expected to close early before the learning calendar and would re-open after the rain season due to the poor state of the school infrastructure. This poor state of infrastructure was a danger to the lives of both the teachers and pupils and the only option was to close early before the end of the learning calendar and delay the re-opening. Kenneth Kaunda Boarding Secondary School in Chinsali district of Muchinga province was reported to be in a deplorable condition, forcing pupils to sleep on the floor while

sanitary conditions were pausing dangers to possible disease outbreaks (Zambia News and Information Services, 2015).

The Post Newspaper article (20<sup>th</sup> November, 2012) titled, ' *Nampundwe High School pupils bemoan deplorable facilities* ' also reported that Nampundwe High School had dilapidated learning environment. Pupils were sleeping in an unhygienic, thatched and makeshift dormitory, using thatched makeshift bathrooms as well as having their meals in an open place as the school did not have a dining hall. Some other selected media reports on unsafe and unhealthy schools in Zambia are presented on Table 1.

*Table 1: Selected media reports on unsafe and unhealthy schools in Zambia*

Serial No.	Media	Story
1.	Zambia Daily Mail, December 27, 2015	Luano school teachers get safety transfers following riot by the hostile community
2.	Muvi Television, October 17, 2013	Sefula school grapples with dilapidated infrastructure
3.	Lusaka Voice, July 2, 2013	Poor sanitation at Shangombo school worries government
4.	Lusaka Voice, May 13, 2014	Poor sanitation at Mbala Secondary School worries DC
5.	Lusaka Voice, April 1, 2014	Western province minister bemoans poor state of school infrastructure
6.	Zambia Daily Mail, January 1, 2017	The roof of the only classroom block at Lumbu Primary School in Chembe constituency in Chembe district has been blown off by rains.
7.	Lusaka Times, November 14, 2012	Head teacher arrested for shooting school boy
8.	Times of Zambia, June 16, 2014	Teacher held for defiling school girl in Chembe District
9.	Daily Nation, October 25, 2014	Twenty six pupils from Henga Basic School and a villager have drowned on Lake Kariba

(Source: Field data, 2018)

Against such background, this study came up with an intervention measure meant to mitigate safety and health challenges faced in Zambian schools through the use of a localised school safety and health manual. The study developed a localised school safety and health manual as opposed to a generalised safety manual to help address the issue of ownership and relevance of the document to local school needs.

Due to safety and health challenges facing schools globally, some governments and international agencies have come up with intervention measures to help solve or mitigate this problem as noted earlier in this document.

From the foregoing examples of school safety and health management initiatives done by governments and international agencies, it is clear to this researcher that school safety and health planning was done at national, provincial and district levels, then handed over to individual schools to implement. Despite clear commitments by governments and international agencies to the management of safety and health in schools as noted above, safety and health planning for schools done at national, provincial and district levels is, arguably, proving to be elusive for many individual schools. This is because those safety and health initiatives handed over to schools from national, provincial or district levels tend to be too generalized and, therefore, not responsive to the local needs of individual schools. In view of this, there was no study done in Zambia to propose a localised approach to school safety and health management at the time of conducting this study in the year 2018. To this effect, this study proposes a locally based, locally planned and locally practiced manual to be used in school safety and health management. Such a localised approach to school safety and health management responds to the Zambian Ministry of Education's agenda of school improvement through community participation (Government of Republic of Zambia, 1996). In developing a localised school safety and health manual, this study focussed on Sefula secondary school as a case study.

### **1.3 Statement of the Problem**

In view of issues of item 1.2 above, the research problem investigated by this study was that in Zambia, there was no guide in 2018 which individualised schools like Sefula could draw from if they wished to devise safety and health manuals responsive to their local settings. Such a situation constitutes a problem which this study tried to address through the present investigation.

## **1.4 Dimensions of the Problem**

A situation where an individualised school lacks a manual that speaks to its specific situation creates problems for the following reasons:

- the school may lack appropriate information, instruction, training and supervision to staff, pupils and other proximate stakeholders in relation to safety and health of the school.
- the school may lack ownership of safety and health management programmes because the planning was done ‘somewhere’.
- the school may lack adequate resources, information, training and advice to enable administrators and other stakeholders of Health and Safety duties to fulfil their roles.
- local skills, beliefs and values in school safety and health management may not be reflected in a generalised manual. This may reduce relevance and acceptability of the manual.

## **1.5 Aim**

In order to address the problem described above, the aim of this study was to develop a localised school Safety and Health Manual by for Sefula secondary school by using ideas and practices of safety and health held by sampled participants of that school.

## **1.6 Objectives**

The above aim was addressed through the following objectives:

- (i) to assess the state of safety and health at Sefula Secondary School
- (ii) to establish ideas and practices of safety and health held by sampled participants of Sefula Secondary School
- (iii) to develop a localised school safety and health manual for Sefula Secondary School based on items (i) and (ii) above

## **1.7 General Research Question**

How could a localised school Safety and Health Manual for Sefula Secondary School be developed in a manner that other schools could learn from it, based on ideas and practices of safety and health held by sampled participants of that school?

## **1.8 Specific Research Questions**

To address the general research question posed above, the following specific research questions guided the study:

- (i) What is the state of safety and health of environment at Sefula Secondary School?
- (ii) What ideas and practices of safety and health are held by participants at Sefula Secondary School?
- (iii) What type of safety and health manual may be developed at Sefula Secondary School based on items (i) and (ii) above?

## **1.9 Significance of the Study**

Feeling safe is a basic and fundamentally important need. It is well known that when learners do not feel safe, it undermines their learning and health development. This study could help to find out the idea of safety and health held by key stake holders in schools. This would help in coming up with local solutions with regards to safety and health management for the school. This situation may consequently translate into favourable teaching and learning process at the school.

This research could assist in defining local problems persistent in a particular school environment and what the most effective measures for securing a school and making it a safer learning environment might be. A safe and healthy school environment could lead to a more conducive and positive learning environment for pupils overall and could indirectly assist in better education and pass rate for all learners.

This study could assist and provide the Ministry of Education, parents, teachers and various key school stakeholders with the relevant local information to make the school environment a safer and healthy place. This study may enable schools to:

- i. Share local skills, values, beliefs and attitudes towards safety and health planning and management for the school
- ii. Interpret the government's education policy on community participation in school activities.
- iii. Share local knowledge in school safety and health planning and management
- iv. Prepare stakeholders for and participate in local safety and health planning and management.
- v. Improve the safety and health environment in school.
- vi. Increase occupational health and environmental awareness in school and local community.
- vii. Detect areas that need improvement in the school's safety, health and environmental health programme.

### **1.10 Operational definition of Terms**

*Health:* The state of complete physical, mental, and social well-being, and not merely the absence of disease or infirmity

*Manual:* A book giving instructions or information on school safety and health management

*Safety:* The condition of being protected from harm or other non-desirable outcomes

*School:* An institution designed to provide learning spaces and learning environments for the teaching of pupils under the direction of teachers, together with surrounding community

*Stakeholder:* A person with an interest or concern in a given business or organisation

*External stakeholder (Outlying):* Individuals or groups of people outside an organisation or business, but who can affect or be affected by the business or organisation.

*Internal stakeholder (Proximate):* Groups or individuals who work within an organisation or project.



## 1.11 Conceptual and Theoretical Framework

### 1.11.1 Conceptual Framework

The study has developed a localised school safety and health manual, using lessons from Sefula Secondary School in western Zambia. The study was guided by what the researcher believes is the logical process of developing a localised school safety and health manual.

In order to design a localised school safety and health manual, the following logical process could be followed by the schools. Firstly, safety and health concerns (hazards) from the biophysical, social, economic as well as the political environment are investigated and identified by internal stakeholders. After safety and health concerns are investigated and identified, internal stakeholders should suggest solutions to identified concerns. Then, a localised school safety and health manual can be devised, based on identified concerns, ideas and practices of safety and health held by internal stakeholders. Finally, the developed draft manual can be subjected to critical evaluation by participants. Figure 1 summarises the concept of a localised school safety and health approach in the context of this study.

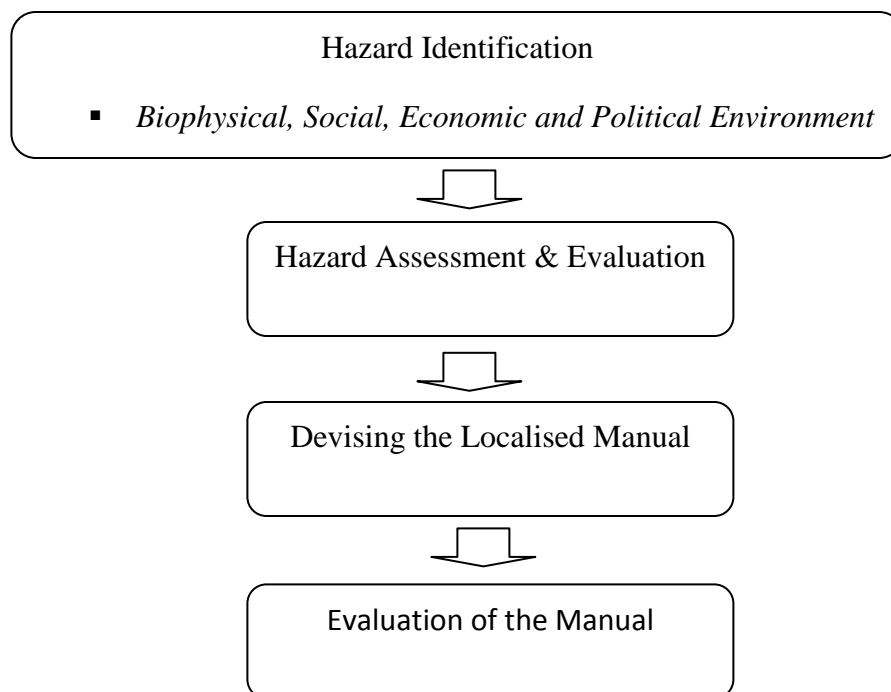


Figure 1: Conceptual Framework of a localised school safety and health approach

(Source: Field data, 2018)

School safety and health planning and management should have a strong internal stakeholder involvement. School safety and health planning and management should reflect bio-physical, social, political and economic aspects of the local school community. This should be based on careful assessment of an individual school's safety and health needs. It should give ownership of safety and health management programmes to stakeholders like teachers, pupils, parents, Education Standards Officers, school administration and local health personnel. Local skills, beliefs and values in school safety and health management are shared easily among stakeholders. This increases relevance and acceptability of the safety and health management programme.

### **Benefits of individualised school safety and health manual**

This study dwelt on an individualised or localised school safety and health manual because of the following reasons:

- A localised school safety and health manual would be more relevant to local safety and health needs of the school.
- Stakeholders can easily share local skills, beliefs and values in school safety and health management. This increases relevance and acceptability of the safety and health manual.
- It gives ownership of safety and health management programmes to the pupils, teachers and the whole community.

### **1.11.2 Theoretical Framework**

This study was operationalised through the Invitational Theory of Education, Abraham Maslow's hierarchy of Needs theory and theory of Tree.

#### **(i) Abraham Maslow's Hierarchy of Needs Theory**

This study was partly operationalised through Maslow's Hierarchy of Needs theory. Abraham Maslow developed the Hierarchy of Needs Model in 1940-1950s in USA; and the Hierarchy of Needs theory remains valid today for understanding human motivation, management training and personal development. Maslow's ideas surrounding the Hierarchy of Needs concerning the responsibility of employers to provide a workplace environment that encourages and enables employees to fulfil their unique potential (self-actualization) are today more relevant than ever. The hierarchy model has basic needs at

the bottom and higher needs at the top. These are physiological needs, safety needs, usually categorised as basic needs whereas love needs, esteem needs and self actualisation needs are categorised as secondary or higher needs (Okumbe, 2007). Maslow's theory of motivation states that when a lower need is satisfied, the next highest need becomes dominant and the individuals' attention is turned to satisfying this higher need. Psychological development takes place as people move up the hierarchy of needs, but this is not necessarily a straight forward progression. The lower needs still exist even temporarily dominant as motivators, and individuals constantly return to previously satisfied needs (Armstrong, 2006).

This theory formed an important base for this study because it identified safety and health needs as being important to the well-being of people at Sefula Secondary School. After meeting the physiological needs, the stakeholders in the school required assurance that their safety and health needs would be addressed. It was therefore, imperative that Sefula Secondary School management fostered safe and health environments to facilitate increased learners enrolment, retention, completion and hence attainment of quality education. Maslow regards safety as the search for security, stability, dependency and protection, as freedom from fear, anxiety and chaos and the need for structure and order. This implies that a person yearns for safety, thus making it an important requirement for survival and an important aspiration of people in Sefula Secondary School environment. In short, the adage 'safety first' is appropriately applicable to this school situation. Figure 2 shows a summary of Maslow's Hierarchy of Needs model.



*Figure 2: Maslow's Hierarchy of Needs model*

(Source: Goodman, 1968)

This study also used MaxNeef's (1989) fundamental needs which involve 'protection' as a version of safety. (i.e. protection from disease, violence, exploitation, theft etc). In the context of this study, the proposed manual is one of way of addressing protection and satisfying other fundamental needs of Sefula secondary school, namely, identity, participation, understanding (education), freedom, creation and substance.

### **(ii) Invitational Theory of Education on Creating Safe Schools**

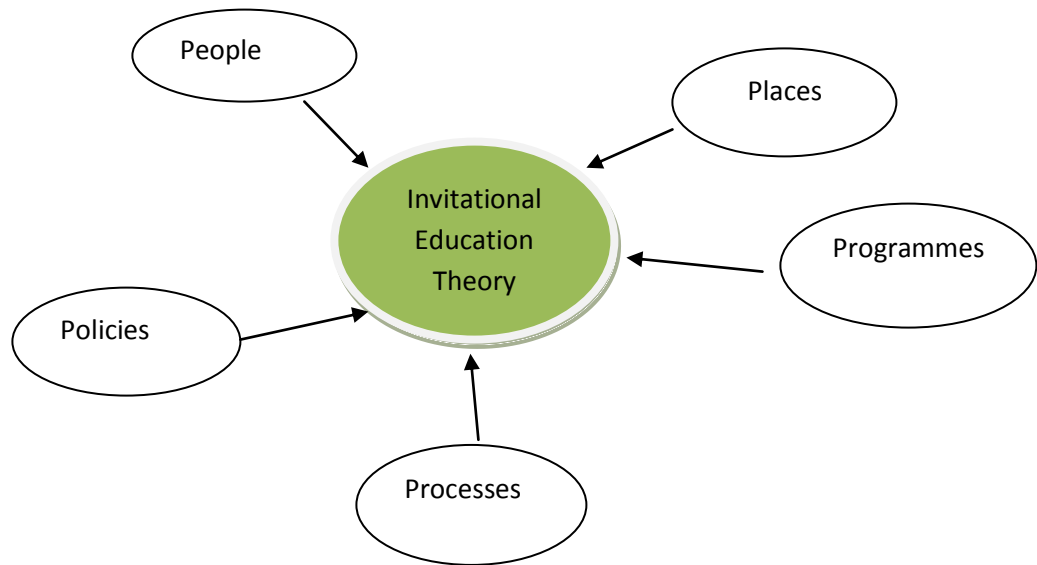
Invitational Theory of Education as propounded by Purkey (1999) in his book entitled "*Creating safe schools through invitational education*" provides a framework for making schools more exciting, satisfying and enriching experience for everyone, that is; all pupils, all faculties, staff and all visitors. This framework goes beyond reforming or restructuring. Its goal is to transform the fundamental character of the school. Invitational Theory of Education asserts that everybody and everything in and around schools adds to, or subtracts from, school safety. It centres on four guiding principles of *respect*, *trust*, *optimism* and *intentionality* (Purkey, 1999).

- *Respect*: Everyone in the school is able, valuable and responsible and is to be treated accordingly.
- *Trust*: Education is a cooperative, collaborative activity where process is as important as product.
- *Optimism*: People possess relatively untapped potential in all areas of worthwhile human endeavor.
- *Intentionality*: Safe and health schools are best realized by creating and maintaining inviting places, policies, processes and programs and by people who are intentionally inviting with themselves and others, personally and professionally. By centering itself on respect, trust, optimism and intentionality, Invitational Education provides a common language of transformation and a consistent theory of practice.

### **How Invitational Education Works**

The "Five P's" of Invitational Education, standing for *people*, *places*, *policies*, *programs* and *processes*, provide the means to address the global nature and symbolic structure of the school. It expands the educative process by applying steady and continuous pressure from a

number of points. Figure 3 shows an illustration of the Invitation Education Theory with the 5 Ps (*people, places, policies, programs and processes*).



*Figure 3: Invitational Education*

(Source: Field data, 2018)

#### **(a) How The Invitational Theory Of Education Can Be Woven Into The Fabric Of Sefula Secondary School Safety and Health**

*People:* Stakeholders of Sefula Secondary should work as a school family. Activities include training in stress reduction and conflict management, long-term relationships between the school and pupils, courteous staff and respect for everyone. Special attention should be given to personal grooming and professional dress. Everyone in school should be treated with much needed respect if safety is to be attained. People in the school environment should be provided with opportunities to relate to each other in appropriate ways.

*Places:* Careful attention should be given to the school physical environment, including adequate lighting, well maintained buildings and grounds, clean rest rooms and sanitation infrastructure, attractive classrooms and cafeterias and displays celebrating pupils' accomplishments. There should be ways to enhance the physical environment of the school, no matter how old Sefula Secondary School buildings are. The school environment should be inviting and supportive of pupils, teachers and everyone in school.

*Policies:* The school policies should be inclusive. Attendance, grading, promotion, discipline and other policies should be developed and maintained within a circle of respect for everyone involved. Families should be kept informed through newsletters, bulletins, phone calls and meetings. Every school policy is democratically developed, easy to understand and made available to everyone involved.

*Programmes:* Among the many programmes that help to create safe Sefula Secondary School are community outreach, wellness and enrichment opportunities for everyone in the school. Programmes that involve parents should be strongly encouraged. School Guidance counsellors play a central role in arranging beneficial programmes towards schools safety.

*Processes:* Process refers to the way in which things are done in the school. At Sefula Secondary School, democratic ethos should be valued along with an academic orientation. All activities and procedures should be designed to honour and include everyone in the school setting and planning programmes. Ideas, suggestions and concerns from all stakeholders should be welcomed in the inviting school for safety reasons (Purkey & Strahan, 1995).

The Invitational Education Theory helped in assessment of whether policies, people, processes, programmes and places at Sefula Secondary School were inviting and friendly as stipulated by the theory. In developing a localized safety and health manual for Sefula Secondary School, Invitational Theory of Education addressed the total zeitgeist, the spirit within a school. This is because the theory has a wider focus of application other than traditional efforts to make schools safe and health. It is concerned with more than grades, attendance, academic achievement, discipline, test scores and even pupil self-esteem. It is concerned with skills of becoming a decent and productive citizen in a democratic society.

### **(iii) Theory of Tree**

This study additionally used a theory of tree as propounded by Chen (2003) in his article titled, “Local Knowledge and Human Development in Globalization of Education”. According to Chen, the theory of tree assumes that the process of fostering local knowledge should have its roots in local values and traditions but absorb external useful and relevant resources from the global knowledge system to grow the whole local

knowledge system inwards and outwards (Chen, 2003: 8). What this in tells, therefore, is that, fostering local knowledge in globalized education system needs local identity and cultural roots.

In the context of this study, the developed localised school safety and health manual should be based on local values and cultural assets but absorbs suitable global knowledge and technology to support the safety and health management of the school, of the local community and individual stakeholders. The development of this manual mainly depended on local needs of the school, its community and cultural preference.

According to Chen (2003: 9) the strength of this theory is that the local community can maintain and even further develop its traditional values and cultural identity as it grows and interacts with the input of external resources and energy in accumulating local knowledge for local developments. This, therefore, means that the localised school safety and health manual would be suitable and relevant to the stakeholders since the process used in developing it was mainly based on the local initiatives.

### **1.12 Limitations of the study**

The limitations of this study included the following:

- The researcher's presence during data collection, which is often unavoidable in qualitative research, could have affected the responses. Some participants may have withheld certain valid information about school safety and health for fear of victimisation or 'washing dirty linen in public'.
- Since this is a case study, the manual designed may not be used or directly applied to other schools. However, learnable principles can be drawn from the case as done in this study.

### **1.13 Summary**

The chapter presented the overview, background to the study, statement of the problem, aim, research objectives, main research question, specific research questions, research objectives, significance of the study, limitations of the study and organization of the thesis.

## **CHAPTER TWO: PROFILE OF SEFULA SECONDARY SCHOOL**

### **2.1 Overview**

When drawing a localised safety and health manual for any school, it is important to account for the school profile. This is because certain elements in the school profile may influence safety and health practices of the local people. The profile has been presented in terms of history and geographical accounts of the school. It is important to learn of the history of the school because certain historical practices by the people of Sefula may have an impact on safety and health practises of today. Moreover, certain climatic elements may influence safety and health issues in the school environment. For example, temperature extremes, wind patterns and so on present elements of physical hazards that are faced within the school environment. Therefore, it was important to take note of the school history and geographical factors as agents of safety and health in the long ran.

### **2.2 A History of Sefula Secondary School**

It is important to account for the school's history because certain historical practices by the people of Sefula may have an impact on their present safety culture.

Sefula Secondary School is situated off Mongu-Senanga road about 17Km from Mongu. The School's history is associated with the coming of Paris Evangelical Mission Society (PEMS). In Africa, the Paris Evangelical Mission Society started its work in Lesotho around early 1800. Francois Coillard was one of the pioneer missionary of this mission society. After doing a lot of work in Lesotho, Coillard and his team decided to expand their missionary activities to other areas.

The first target was a Chivi in South Eastern Zimbabwe where they went in 1879. Unfortunately, they were arrested and taken to Bulawayo because his team consisted of Basutu Evangelists who were not liked by Lubengula, the Ndebele king. This was one of the Basutu chiefs, whom Molapo had betrayed. Coillard and his team were thus expelled and warned never to return to Zimbabwe.

On their way to Lesotho, Coillard and his team stopped at *Soshong Ngwato* Capital where King Khama of the Ngwato people told Coillard about another Sotho speaking tribe called the Kololo (Lozi) who were living in Barotseland. Coillard was attracted to come to Buluzi



upon hearing that another Sotho tribe lived there. Coillard was also attracted to come to Bulozhi because he felt that the Lozi's, who could speak Sotho, were a friendly people.

From Soshong, Coillard and his team turned northwards across Kalahari reaching Bulozhi in 1878. After reaching Sesheke in 1878, the expedition sent one of their representatives to Lewanika to ask for permission to establish a Mission station in Bulozhi. Because of the fragile political situation in Bulozhi, Coillard and his team were advised to come later when the Kingdom was more stable.

After acquiring the necessary resources from France, United Kingdom, Italy, Switzerland, Holland and Belgium which could not be obtained from Lesotho mission, Coillard and his team arrived again in Bulozhi on 3<sup>rd</sup> January, 1884. The negotiations to open up a mission in Bulozhi failed in 1884 because Lewanika in that year was overthrown by Tatila Akufuna and Ngambela Mataa who opposed his leadership. Successful negotiations to start a mission in Bulozhi were done in 1885 after *Lewanika* had come back to the throne.

Lewanika permitted the Paris Evangelical Mission Society to establish a mission in Bulozhi (Western Province) after Coillard successfully explained the whole idea to him. The first station to be established was at Sefula in 1885, Mwandi Mission in Sesheke was opened in 1887, Lealui in 1892 and Nalolo in 1894.

### **2.2.1 Sefula Mission**

The first school was organised by Rev. Francois Coillard in March 1887. According to enrolment records, the school had 35 male pupils, including Litia the son of Lewanika. In November 1888 the school also enrolled girls bringing the total to 107 pupils. The curriculum of this school mainly emphasised reading and writing so that pupils could be equipped with the skill to read the Bible.

In 1907 Rev. Coillard opened Sefula Normal School. This school selected pupils who passed standard IV. The arrangement of the school involved the first stage being the preparatory class also called infant class. The second stage low class involved Sub A and B classes up to standard I to IV. Standard V and VI were upper classes. Those who successfully completed standard VI qualified to the Teacher Training College at Sefula Mission. The Teacher Training College was situated at the current place where Sefula

Secondary is built. Teachers who graduated at this college were qualified to handle Primary Classes; Sub A and B up to Standard II.

Alongside the school, there was a carpentry workshop which trained students in skills of carpentry and joinery. The students who did carpentry were also taught reading and writing skills. Some of the earliest graduates from this carpentry workshop included Clement Zaza and Wakumelo Zaza. These became successful carpenters who could make Tables, chairs desks, etc. which were used in the mission stations.

### **2.2.2 Establishment of Sefula Secondary School**

The idea of opening a Secondary School at Sefula dates as far back as 1957. The idea mainly came from Swiss missionaries who were working for P.E.M.S. In addition, a French missionary by the name of Dr. Samuel Jacques proposed the building of a small hydro-electrical power station at Sefula Stream to supply power to the proposed secondary school and the Teacher Training College. They even commenced construction of a dam at Sefula stream but the British Colonial masters, who were directly stationed in the opposite direction, were against the idea of building H.E.P as they felt that the French were not competent enough to complete and manage the project.

The idea of opening a secondary school at Sefula was also challenged because the Litunga and the British Administrators based in Mongu felt that Sefula area was too small to accommodate the Teacher Training College and the secondary school. After negotiations it was resolved that the Secondary school should be built at Lyalumba Hill just within Sefula area. Sir Mwanawina Lewanika rejected this proposal. After the Litunga refused, it was finally agreed that the Teacher Training College should be moved to Livingstone while the Secondary School was to be established right at Sefula where the teacher training college existed.

In 1960 the college was moved to Livingstone and was called David Livingstone Teacher Training College. In the same year (1960) Sefula Secondary School was opened. The first Principal or Headmaster of the school was Dr. Samuel Jacques. That time the school had only two (2) one by two classroom blocks, a separate administration block and some houses which were used as dormitories. The school opened with a class of four (4) boys and a year later (1961) 6 girls were admitted in form 1.

In 1963 a problem arose on whether the church should run the school or give it to the Government. It was agreed that since the church was supporting the institution, its functions were to be broad and the church was to use its resources to maintain the school with little help from the government. In 1965, when P.E.M.S joined the other mission churches to form the United Church of Zambia (U.C.Z), Sefula Secondary School came under the same church. In 1966 the first black headmaster, Mr. Likando Kalaluka, was appointed together with the first black teachers, Ngona Imutowana (History and Geography) and Mr. Lisulo Mucanza (woodwork). The Headmasters and headmistresses since then were as follows:

1. Dr. Samuel Jacques.....1960-1962
2. Mrs. Teacy.....1962
3. Mr. Thompson Schuttle.....1962-1966
4. Mr. Likando Kalaluka.....1966-1967
5. Mr. Pearson.....1967-1970
6. Mr. Musgrave.....1970-1975
7. Mr. Yulle.....1975-1976
8. Mr Thompson.....1976-1978
9. Mr. Njekwa Simakando.....1978-1989
10. Mr. Kelvin Akalaluka.....1989-1990
11. Mr. Simunika.....1990-1992
12. Mr. Akayombokwa Kusiyo.....1993-1997
13. Mr. Mukwenda Matomola.....1997-2006
14. Mrs. Sitali Nyambe.....2006 to date.

(Source: Sefula Secondary School, 2018)

### **2.3 A Situational Context of Sefula Area**

According to the World Health Organisation (WHO, 2016), climate affects the social and environmental determinants of safety and health of a given place, that is, clean air, safe drinking water, sufficient food and secure shelter. WHO (2016) also notes that areas with weak health infrastructure, mostly in developing countries, will be the least able to cope without assistance to prepare and respond. Moreover, between 2030 and 2050, climate

change is expected to cause approximately 250 000 additional deaths per year, from malnutrition, malaria, diarrhoea and heat stress (WHO, 2016).

With reference to the foregoing facts as noted by WHO (2016), this study sought to review the climatic characteristics of Sefula area in terms of location, relief and drainage. This is because, as noted above, climate has an influence on the safety and health of any given social setting. Extreme temperatures may affect the work rate for people in the school environment. Moreover, heavy rains may also result in adverse health effects associated with flooding and stagnant water. The following section explains the location, relief and drainage patterns of Sefula area.

### **2.3.1 Location, Relief and Drainage**

Sefula Secondary School is situated on a small blunt promontory of higher ground on the southern edge of Mongu town. It is located on the 30 kilometre wide Barotse Floodplain of the Zambezi River running north-south. Sefula Secondary School is approximately 17 kilometres from Mongu. Sefula area is flat and sandy, with the dry land generally not more than 50 metres higher than the floodplain. The estimate terrain elevation above sea level is 1023 metres. By longitudinal and latitudinal extent, Sefula is located on Latitude 15°22'59.99" and Longitude 23°10'59.99". There is a Sefula stream running from Sefula *musindi* to the flood plain. This stream brings safety and health concerns to the local people as noted in chapter five and six of this document.

Three eco-regions are represented in Sefula area and its nearby areas: The floodplain which comprises Zambezian flooded grasslands; the higher dry ground around Sefula which is a mosaic of Central Zambezian Miombo woodlands; and *Cryptosepalum* dry forests. To the east, the soil is very sandy and there are many pans which dry out in the dry season.

The flooded grasslands around Sefula area can potentially increase the transmission of communicable water-borne diseases, such as typhoid fever, cholera and hepatitis. Vector borne diseases, such as malaria and yellow fever could also be a concern to residents of Sefula area. Other health and safety risks posed by flooding around Sefula area include drowning, injuries or trauma. Hypothermia may also be a problem, particularly in children, if trapped in floodwaters for lengthy periods (WHO, 2016). Moreover, power cuts related to floods may disrupt water treatment and supply plants thereby increasing the risk of

water-borne diseases as described above and may also affect proper functioning of health facilities. These health risks posed by flooding may affect the health of pupils, staff and Sefula community. This may in turn affect the teaching and learning processes at Sefula Secondary School. Figure 4 shows a map of Sefula secondary school and its surrounding areas.

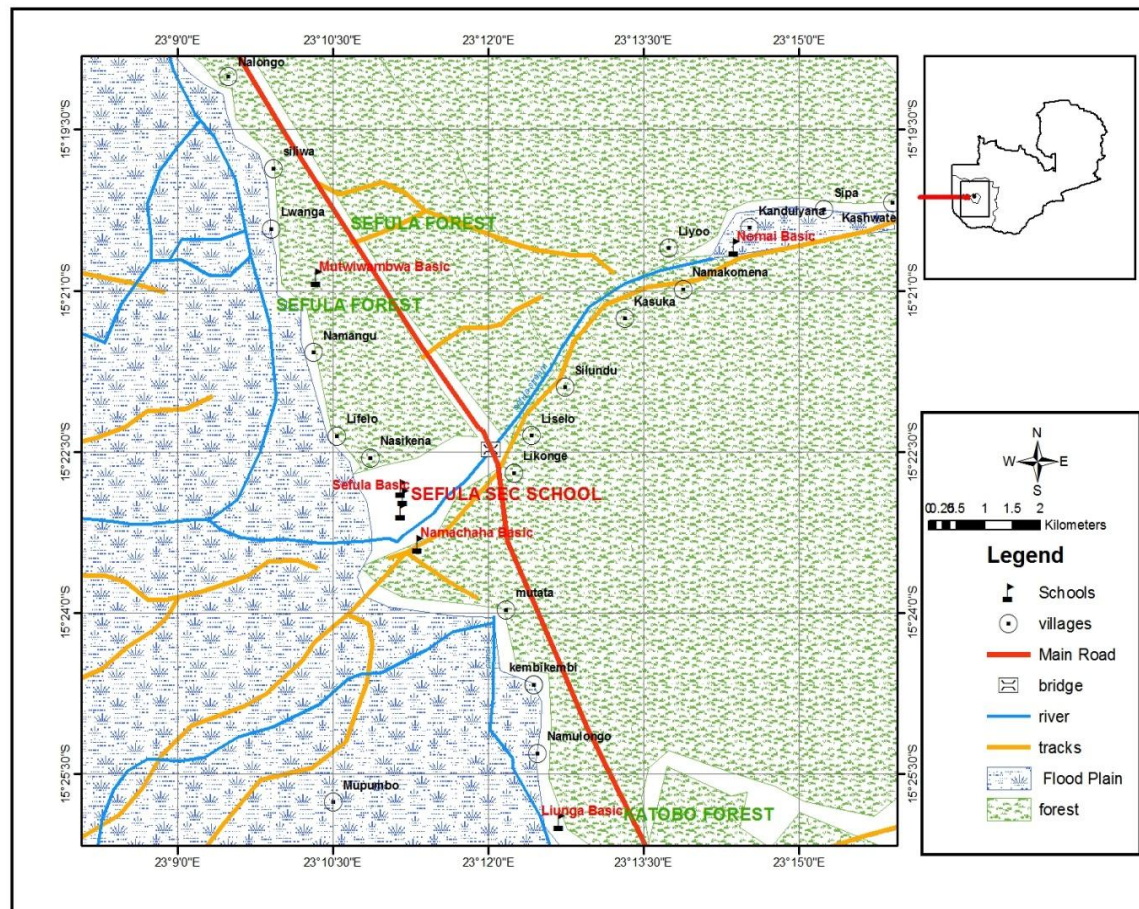


Figure 4: Map of Sefula

(Source: Digitised from Zambia source Map, 2018)

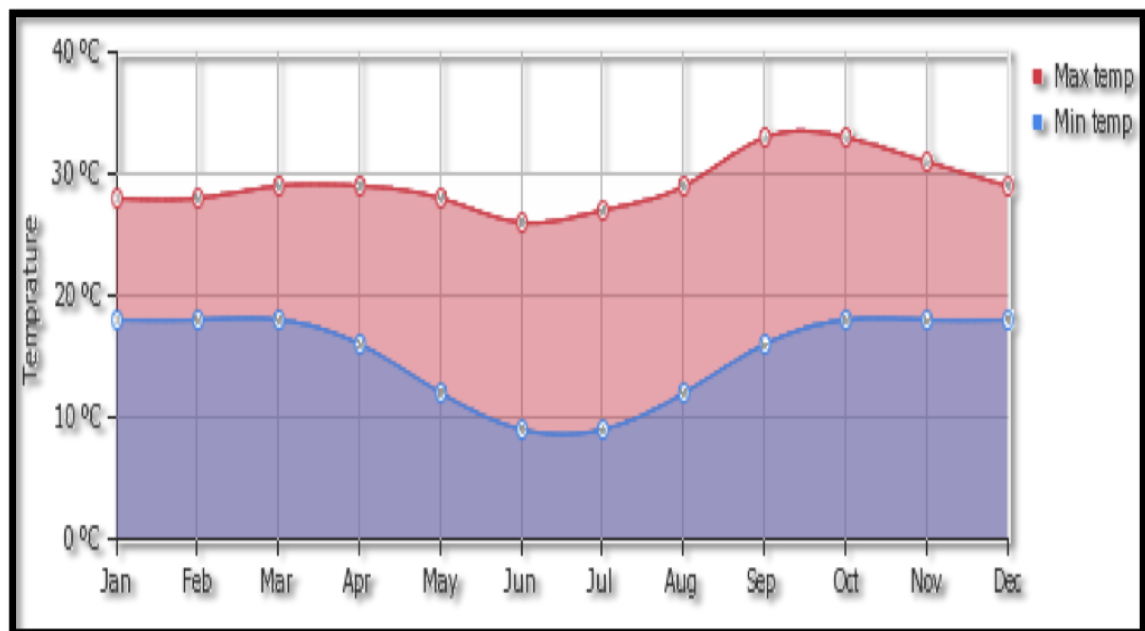
#### (a) Climate

Sefula area has annual average rainfall of about 945mm falling in the rain season from late October to April (Zambia Meteorological Department, 2016). According to Zambia Meteorological Department (2015), Sefula area is hot from September to December, with a mean maximum temperature of about 35.4 degrees Celsius and mean minimum temperatures of about 10.3 to 29 degrees Celsius in the cool dry season. In short, being located in a Savannah region, Sefula has hot wet summers and cool dry winters. Moreover,

temperatures around Sefula are regulated by seasonal flooding between January and April. The climate data below presents a summary of climatic characteristics of Sefula area (Zambia Meteorological Department, 2016).

**(i) Average Minimum and Maximum Temperature in year**

The average temperatures of Sefula area are about 20 degrees Celsius. Average monthly temperatures seem to vary by 9.2 degrees Celsius. In winter, temperatures reach 23.4 degrees Celsius on average, falling to 10.5 degrees Celsius overnight. During summer, average high temperatures are around 26.1 degrees Celsius and average low temperatures are 17.1 degrees Celsius. In spring time, temperatures rise, reaching 29.3 degrees Celsius generally in the afternoon with overnight lows of 17.1 degrees Celsius. Figure 5 is a summary of minimum and maximum temperatures over the year for Sefula (Zambia Meteorological Department, 2016).



*Figure 5: Average Minimum and Maximum Temperature in a Year*

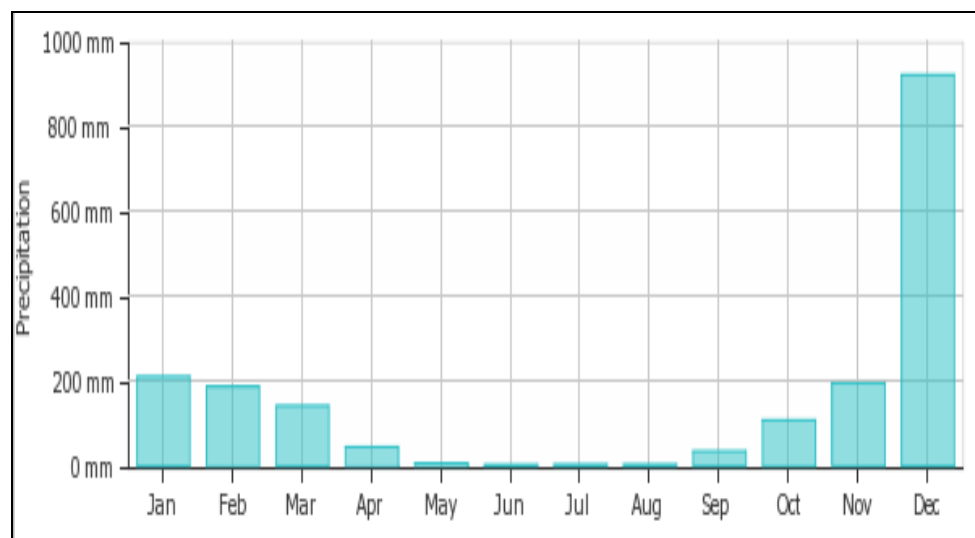
(Source: Zambia Meteorological Department, 2018)

As shown by Figure 5, average minimum temperatures are around the month of June and July (about 8 degrees Celsius) while the maximum temperatures are received in September and October (around 34 degrees Celsius). The annual range of temperature is about 26 degrees Celsius. This high annual temperature range is a result of the big difference in maximum and minimum temperatures of the year. This also entails that Sefula area receives high temperatures in summer. This brings some discomfort to the people in the

area. High temperatures could also lead to drying of water in Sefula stream and other water sources due to rapid evaporation.

### **(ii) Average Monthly rainfall in a Year**

According to the Zambia Meteorological Department (2016) rainfall varies over a range of 500mm to 1400mm per year in Sefula area. The distinction between rainy and dry season is marked with no rain in June, July and August. Heavy rains are normally received in the months of December, January and February. This usually results in some floods in the nearby flood plain and water stagnation in nearby places. The rains are mainly convectional in nature. They occur in the afternoon, accompanied by thunder and lightning. Figure 6 shows the average monthly precipitation over the year around Sefula.



*Figure 6: Average Monthly rainfall in a Year*

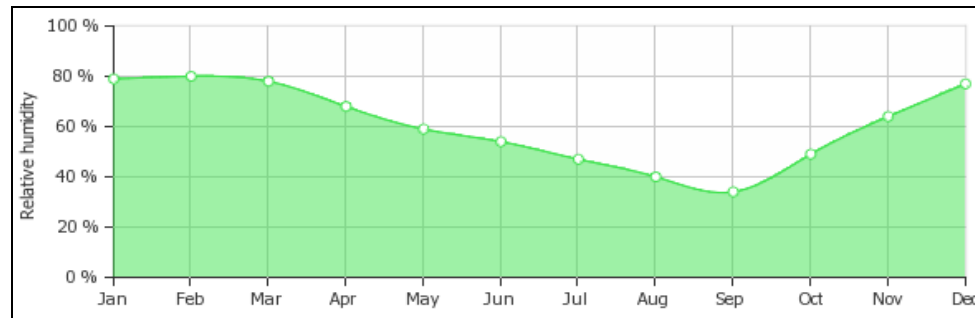
(Source: Zambia Meteorological Department, 2018)

As shown by Figure 6, the month of December receives the highest amount of rainfall in Sefula. This is about 800mm. The lowest amount of precipitation is received in the months of June and July (almost zero). The highest rainfall totals occur in summer where the strong heat from the Sun creates significant vertical uplift of air, and the formation of prolonged heavy showers and frequent thunderstorms.

### **(iii) Mean Monthly Relative Humidity**

According to the Zambia Meteorological Department (2016), relative humidity typically varies from 28% (dry) to 100% (very humid) over the course of the year in Sefula. It rarely

drops to below 19% (dry) and reaches as high as high as 100% (very humid). Figure 7 summaries mean monthly relative humidity for Sefula area.



*Figure 7: Mean Monthly Relative Humidity*

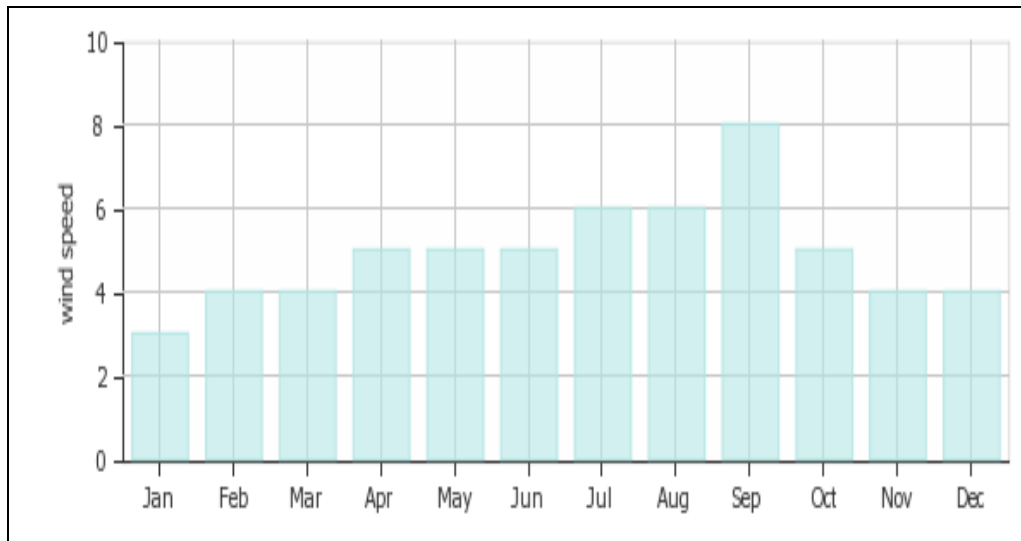
(Source: Zambia Meteorological Department, 2018)

As shown in Figure 7, the air is driest around September at which time the relative humidity drops 35% (comfortable). It is most humid around the months of January and February, reaching 80% (very humid). The big differences in relative humidity are notable in September and January above because relative humidity depends upon the air temperature and the amount of water vapour actually present in the air. As cold air cannot hold as much water vapour as warm air, the cold air gets easily saturated than warm air. That is why relative humidity is found to be more in the month of December. Similarly, if the air temperature increases, relative humidity decreases (for the same amount of moisture content) as the air becomes more unsaturated. That is why the month of September, where the temperature is high, has a low relative humidity. This is supported by Lubwama (2013) who states that the temperature of air also influences humidity as cold air holds less moisture compared to warm air.

#### **(iv) Average Wind Speed in a Year**

According to the Zambia Meteorological Department (2016) over the course of the year, typical wind speed varies from 0 metres per second to 7 metres per second (calm to moderate breeze), rarely exceeding 9 metres per second (fresh breeze). The highest average wind speed of 3 metres per second (light breeze) occurs around October, at which time the average daily maximum wind speed is 7 metres per second (moderate breeze). Figure 8 shows the average wind speed over the year around Sefula area.





*Figure 8: Average wind speed in a year*

(Source: Zambia Meteorological Department, 2018)

As shown in Figure 8, the lowest average wind speed of about 2 metres per second (light breeze) occurs around January at which time the average daily maximum wind speed is 5 metres per second (gentle breeze). Prevailing winds in the dry season are generally moderate but occasionally more severe and may bring cool dust-laden air. Whirlwinds are very common but not usually destructive. In the rain season, winds are localised with thunderstorms and may be destructive but usually confined to small areas causing damage such as blowing roofs off buildings. The area does not experience any tornadoes or tropical cyclones of widespread destructive force. Strong winds are mainly experienced in the month of July, August and September as shown by the graph above.

### **2.3.2 Effects of Climate on Sefula Secondary School Safety and Health**

Sefula Secondary School experiences hot wet summers and cool dry winters as explained in the foregoing pages. Hot summers around Sefula School bring regular queries about the maximum temperatures under which teachers and pupils should be expected to work in schools. High temperatures experienced at Sefula Secondary School in summer (about 27 degrees celcius) can affect the ability of staff and pupils to concentrate and to work effectively, and can cause physical discomfort and illness. When pupils and staff get too hot, they could be exposed to dizziness, exhaustion, fainting or heat cramps. In very hot conditions the body's blood temperature rises. If the blood temperature rises above 39°C, there is a risk of heat stroke or collapse.

High temperatures experienced in the Sefula environment could lead to loss of concentration and increased tiredness among pupils and staff. Pupils, particularly very young ones, are likely to suffer most in extreme heat because they may not know how to protect themselves. Although there is no legal maximum temperature in Zambia, the World Health Organisation (2016) recommends 24°C as a maximum for comfortable indoor working, with anything above 26°C as definitely unacceptable. This is also supported by the United Kingdom's National Union of Teachers (NUT, 2007) policy which states that 26°C should be the absolute maximum temperature in which teachers in the United Kingdom schools should be expected to work, other than for very short periods. NUT (2007) also argue that all schools should have in place contingency plans to help staff and pupils cope with unbearable climatic conditions.

Sefula area receives rainfall of about 500 mm to 1400 mm per year (Zambia Meteorological Department, 2015). Heavy rainfall at Sefula is experienced in December, January and February. These rains result in floods and water stagnation in nearby areas, especially near the Sefula stream and the flood plain. These floods expose pupils, staff and the community to multiple health risks. Stagnant water exposes people to diseases like cholera, typhoid and malaria. This agrees with reports by the United Nations Children's Fund (UNICEF) (2009) and Ochola (2009) that malaria and cholera are a health menace in flood zones and are aggravated by low socio-economic status.

## **2.4 Summary**

This chapter presented the Sefula Secondary School profile. When looking at safety and health issues for Sefula Secondary School, the chapter focused on the school profile from the historical and geographical point of view. The school history and geographical information were explained. This was with the thinking that history, geographical information and social-cultural issues related to the school may have had an influence on safety and health issues and practices in the school environment. The next chapter is a review of literature relating to school safety and health.

## **CHAPTER THREE: REVIEW OF RELATED LITERATURE**

### **3.1 Overview**

This chapter focuses on the review of literature related to aspects of school safety and health. The chapter presents literature from different aspects as follows: The concept of localisation, the concept of safety, the concept of safety and education, meaning of school safety, features of a safe school, meaning of health and features of a health promoting school. Manuals from the global and African context on school safety and health have also been reviewed. It would however, seem as though this study was biased toward Western research findings. This was due to the fact that there was limited research data available on school safety and health in Africa and Zambia at the time the study was conducted. This discrepancy stood out as a problem, considering the growing number of reports in media about the poor state of safety and health in Zambian schools as indicated in the background of this study.

### **3.2 Concept of Localization**

According to Cheng (2003:3) localization refers to ‘the transfer, adaptation, and development of related values, knowledge, technology, and behavioral norms from/to the local contexts’. Some characteristics and examples of localization as noted by Cheng (2003) include factors like local networking; adaptation of external technological, economic, social, political, cultural, and learning initiatives to local communities. Localization also includes decentralization to the community or site level; development of indigenous culture; meeting community needs and expectations; local involvement, and community support; local relevance and legitimacy; and concern for community based needs and characteristics and social norms and ethos. Localization has also been defined by Taylor as “...freedom for schools or local education authorities to adapt to local conditions,” (2004; 2), and “...relating the content of the curriculum and the processes of teaching and learning to the local environment” (2004; 3). This flexibility in adapting the program of education for students to local conditions, often away from the capital city and urban population centres is a direct response to traditional curriculum design (Taylor, 2004). The idea of relevance is critical to the understanding of localization and the policy planners who have been active promoters. Taking into account the “...cultural and socio-economic realities” (United Nations Educational, Scientific and Cultural Organization,

2002; 31) of local populations when designing educational content is critical in engaging students in the learning process. A crucial failing of educational systems, worldwide has been their lack of relevance to the lives of learners. This lack of relevance weakens the mentioned connection and bond between communities, learners, and schools; and thus damages educational outcomes through decreased student, community, and teacher engagement in the learning process. In the context of this study, principles of localisation are used in developing a school safety and health manual, a factor that is lacking most school manuals developed at national, provincial or district levels.

### **3.3 Localization in Education**

The concept of localization in education is meant to maximize the education relevance to local development and bring in community support and resources, local partnership and collaboration in learning, teaching and research (Cheng, 2003). Some examples for practice of localization include school-based management, community involvement in education; privatization in education; public-institutional collaboration; assurance of institutional accountability; implementation of institutional autonomy, school-based management and community-based curriculum (Wang, 2000; Altbach, 1999; James, 1994).

In the context of this study, localization of school safety and health manual maximizes relevance of planned activities at school level through proximate stakeholder involvement in planning and management. A manual developed collaboratively with proximate school stakeholders for an individual school is more responsive to the local safety and health needs of that school than a generic manual planned at state or district level and merely handed over to schools for implementation. This is because schools are different settings and therefore have different environmental challenges.

### **3.4 Rationale for localised school safety and health manual**

This study recommends that school safety and health manuals and other school safety and health interventions should be drawn by individual schools. This is because when it comes to safety and health issues, different schools have unique local features that affect their approach to workplace safety and health, and these features should be taken into account by safety and health professionals and policy makers when designing safety and health programmes and services.

This study developed a localised safety and health manual as a tailored intervention guide or toolkit to help mitigate safety and health challenges faced at one school. This is because in occupational safety and health science, interventions should be tailored to a specific workplace. This entails that no generalisations are required for different workplaces. The manual developed by this study would only be applicable to Sefula Secondary School, herein used as a single case study because safety and health challenges faced at this school may not be the same with other schools. Additionally, depending on social settings, different schools face different environmental challenges and hence, different safety and health concerns. This assertion is supported by Cheng (2003: ) who argue that, “to different local communities, the existing social context, cultural assets and historical backgrounds may be completely different and therefore the knowledge and wisdom they have found useful and valid and accumulated in the past years may be different. Therefore, it is not a surprise that the knowledge systems of local communities are different from each other.” This is in correlation with the U.S Department of Health and Human Services (2010: 2) which states that:

*Work place settings vary according to size, sector, design, location, work processes, workplace culture and resources. In addition, workers or people found in the workplace differ in terms of age, gender, training, education, cultural background, health and safety practices and access to preventive health care. This translates to great diversity in the safety and health risks for each workplace and therefore need for tailored interventions*

The foregoing argument is also supported by MacEachen and Breslin of the Institute for Work and Health (2013) who argue that occupational safety and health programmes differ from one workplace to the other. This is because different workplaces have different work cultures that give rise to different safety and health needs. Furlong (2016) pers.com also supports this assertion as follows;

*I have always suggested that each school should develop its own safety and health manual that reflects school and community interests, values, and needs. This means basing the school safety plan on actual data for the school, not state, regional or national trends*

### **3.5 Concept of Safety**

Safety means different things to different people. According to Wildavsky (2008) safety means the condition of being protected against physical, social, spiritual, financial, political, emotional, occupational, psychological, educational or other types or consequences of failure, damage, error, accidents, harm or any other event. Safety is a state or condition where hazards leading to physical, psychological or material harm are controlled in order to preserve the health and well-being of individuals and the community. Safety is an essential resource for everyday life, needed by individuals and communities to realise their aspirations.

According to the World Health Organisation (1998) attaining an optimum level of safety requires individuals, communities, governments and others to create and maintain the following conditions, whichever setting is considered:

- an atmosphere or climate of social cohesion and peace as well as of equity protecting human rights and freedoms. This should be at family, local, national or international levels;
- the control of injuries and prevention of other consequences or harm caused by accidents;
- respecting the values, physical, material and psychological integrity of individuals; and
- providing effective preventive, control and rehabilitation measures to ensure the presence of the three previous conditions.

These conditions as stated above can be assured by initiatives that focus on the environment (physical, social, technological, political, economic and organizational) and on behaviour.

The concept of safety is important to understand in the context of this study because an individual's understanding of the concept is likely to influence his or her safety culture and practice within the communities. This study has developed a localised safety and health manual for Sefula Secondary School. This was done through the ideas of safety and health held by proximate stakeholders and the researcher's input. Therefore, it was important to

first of all understand the concept of safety held by proximate stakeholders before applying it to the Sefula Secondary School safety planning context.

### **3.6 Idea of School Safety**

When designing a localised school safety and health manual, it was important to understand the idea of a safe school. The understanding of a safe school may help in defining the concepts related to school safety. In literature, there are a variety of ways of defining a safe school, or which aspects of school safety should be managed, promoted and prioritized. For instance, Hernandez, Floden and Bosworth (2010) suggest a safe school is a place free from violence and represented by an environment where there is no perceived fear with respect to the school or its disciplinary procedures. Generally, a safe school is one that provides a positive environment, allowing pupils, teachers, other staff and visitors to interact without fear or threats, and in a supportive way to achieve the educational mission of the school while fostering and nurturing personal growth (Butcher and Manning, 2005). Hull (2010) provides a more practical and management-oriented elucidation of school safety, stating that it includes the school's culture and the appropriate training and resources to respond to threats and hazards.

Definitions of a safe school also vary according to geographic and social location. The United States of America school safety research chiefly focused on violence and crime prevention as major aspects defining school safety (Heinen, Webb-Dempsey, Moore, McClellan and Friebe, 2007). From the European perspective, school safety takes a wider viewpoint to include health, risk, a safe learning environment and lifelong learning related to health and risk (European Agency for Safety and Health at Work [EU-OSHA], 2009).

Defining school safety often poses challenges. This is because the definitions can encompass a wide remit of different themes, where the separation of rhetoric versus reality becomes a problem and where difficulties arise in distinguishing between personal beliefs and evidence based research (Mayer and Cornell, 2010). However, in literature, the most commonly noted components of school safety are physical, psychological, environmental and social.

Violence and bullying are commonly discussed in literature in terms of physical issues of school safety. For example, in a recent study of school safety, Dunlap (2013) focuses

mainly on school violence as the central aspect of school safety. Literature mainly refers to school violence as the contextual basis for school safety research and aims to develop response mechanisms to crises in school settings (Kingshott and McKenzie, 2013).

From the psychological point of view, school safety in literature is discussed with reference to how safe pupils, teachers and other staff feel at their school (Mooij and Fettelaar, 2013). More recently, discussions regarding a safe school have developed into debates about how safe individuals feel in terms of gender (Toomey, McGuire and Russell, 2012), homosexuality (Fleming, 2012; Vega, Crawford and Pelt, 2012) and disabilities (Boon et al., 2011).

School road safety also represents an important subset of school safety research in terms of the school environment. For example, Hidayati, Liu and Montgomery (2012) focus on traffic flows as a key part of improving school safety in Indonesia, while John, John and Bose (2012) illustrate that road safety and school transport in India are a leading cause of injury and cause of deaths in schools or communities around schools.

In addition to road safety, the school infrastructure is considered instrumental in creating a safe school. A key concept of invitational education theory by Purkey and Novak (1996) explains that the school should be an inviting place across five key areas (people, place, processes, policies and programs). In responding to this, attention has often focused on creating a safe school environment, including the school's infrastructure and surroundings (Stanley, Juhnke, and Purkey, 2004). With regards to this, a small subset of school safety literature investigates school safety in the context of natural hazards, but this usually relates to specific geographic locations, for example, in Taiwan, where typhoons are a common occurrence (Chen and Lee, 2012). Shaw and Kobayashi (2001) also suggest that schools can be used as a way to reduce the wider impact of natural hazards in schools.

According to Ozer and Weinstein (2004), linking the school environment with their immediate communities is often investigated in terms of its impact and relationship with safety and violence in the wider community. There is strong evidence that the safety of a particular school cannot be taken in isolation, and is inseparable from the immediate surrounding community (Kitsantas, Ware, and Martinez-Arias, 2004). This in tells that when planning for school safety, the local community should also be involved. This is



because the safety and health challenges faced in the school may also affect the local community.

The other aspect common about school safety in literature is its diversity ranging from the school's environment to community violence, natural hazards and the psychological effects of bullying. The diversity represents a challenge, particularly for schools where the concept of school safety is new. The issues with school safety research and literature are also highlighted by Furlong, et al. (2004), who explain that school safety research can only progress by developing a core literature to critically assess the methodology, measurement and analysis of school safety wholesomely.

In the context of this study, school safety constitutes measures undertaken by pupils, teachers, auxiliary staff, parents and other stakeholders to either minimise or eliminate risky conditions or threats that may cause accidents, bodily injury as well as emotional and psychological distress. Accidents can lead to disability or death while emotional and psychological trauma can result in lack of self-esteem and ultimately lead to poor performance of tasks and responsibilities. Creating a School Safe Zones does not only mean ensuring an accident free school environment. Rather, it is the responsibility taken by pupils, staff, parents and stakeholders to foster all round safe living.

As noted from the foregoing discussion, it is important in the context of this study to understand the meaning of school safety by stakeholders of Sefula Secondary School. This is because the meaning attached to school safety by stakeholders of Sefula Secondary School may influence the safety culture and general safety practices in the school environment. This could influence the methods and approaches used in developing a safety and health manual for this school. From the above information it becomes clear that it is essential that stakeholders of Sefula Secondary School understand the meaning of a safe school in order for them to have a clear picture of what they manage and how their clients can benefit from the safety programmes that they pursue in school.

### **3.6.1 Indicators of School Safety**

When designing a localised safety and health manual for schools, it was important to identify indicators of school safety. This is because the indicators of school safety point to

main ingredients needed to be included in the school safety plan. According to Kenyan Ministry of Education (2008) a safe school should have the following indicators:

- High retention rate of enrolled learners
- Strong focus on teaching and learning, reflected by better academic performance and all round character development amongst its learners.
- Visible strategies in promoting the rights of children as provided in the convention on the rights of the child.
- High levels of interaction between school administrators, teachers, learners, sponsors parents or guardians and the community, among others
- Active participation of community in school programmes.
- Visible presence of key stakeholders such as relevant government officials, private sector representatives, religious leaders, and representatives of
- Adequate and well maintained facilities such as toilets and sanitation facilities.
- Clearly demarcated school grounds with proper fencing and secure gates or boundaries.
- Environment free from drug and substance abuse, trafficking and illegal hawking.
- Low incidences of indiscipline.

In the context of this study, it is important that the proximate stakeholders of Sefula Secondary School are aware of indicators of safety of their school environment. This is because indicators of school safety act as symptoms and signs that remind the people of what must be done to bring about safety to their school. Awareness of safety indicators keeps people alert with precautions needed to keep the school safe. Indicators of safety are like early warning systems vital for planning and developing safety and health manual for the school.

### **3.6.2 Features of a Safe School**

#### *(a) A Safe School Has a Positive School Climate*

Research shows that schools with a positive and welcoming school climate increases the likelihood that pupils succeed academically while protecting them from engaging in high risk behaviours like substance abuse, teen pregnancy, and violence. A positive school climate encourages behaviours with clear consequences for violating rules as well as rewards for meeting expectations. School climate can be understood as the frequency and

quality of interactions among and between staff, pupils, parents and the community throughout the entire school community.

In a positive school climate, the caring attitude of the school is clearly visible and is reflected by widespread participation in all areas of the school. According to the National School Safety Centre (1990), a pupil's perspective of the school climate is affected by the following:

- *Pupil involvement*: The degree to which students are involved in and enjoy classes and extracurricular activities at school.
- *Pupil relationships*: the levels of comfort pupils feel in relating to one another and the ease with which they make new friends.
- *Teacher support*: The amount of help and care that teachers direct toward pupils.
- *Physical environment*: The extent to which the school building reflects the caring attitude of the school, the school buildings are clean, well-cared for, supervised and safe.
- *Conflict resolution*: Whether pupils are clear about the rules and feel that conflicts are resolved fairly and rules are consistently enforced.
- *Participation in decision-making*: The extent to which pupils, administrators and teachers share in making decisions about school improvement.
- *Curriculum*: The extent to which pupils feel that what is taught in classes meets their needs.
- *Counselling services*: Whether pupils feel counsellors are accessible and able to help with personal problems, job and career information, and concerns about drugs, alcohol, and sex.
- *Recreation alternatives*: Whether pupils and staff are satisfied with existing recreational activities and teachers' support of these activities.
- *Personal stress*: The amount of pressure pupils feel they are under and the resources they have to cope with it.

*(b) A Safe School Is Also Prepared For Emergencies, Provides Opportunities for Pupils in Before and After-School Activities and Has Effective School-Community Partnerships.*

While a safe school has a positive, warm and welcoming school climate, there is more to a safe school than a good school climate. A safe school is also a school that is prepared for

emergencies, provides opportunities and guidance for students before and after school with programs and activities at school and/or in the community, and involves the whole community in anticipating and preventing school problems. A safe school requires balancing physical security with a nurturing school climate, as well as developing effective school community partnerships.

*(c) Schools Can Use the Five Components of Safe Communities*

Safe schools model convene a safe school planning team, conduct a school site assessment, develop strategies and implement violence prevention programs based on need, establish a social support team and develop a crisis plan to guide safe school planning. In addition, here are some things that school personnel can do to create a protective school climate according to University of Arizona (2011):

- consistently recognize students and adults for participating in cooperative and philanthropic activities.
- brainstorm with students, faculty or staff and parents some simple changes that could make the school a more enjoyable place to be.
- establish and support a school norm that does not tolerate any form of verbal and nonverbal bullying by adults or students.
- discipline
- state rules positively to tell students what to do instead of what not to do.
- express the expectation that all students can and will be successful.
- focus on giving students concrete rewards and acknowledgment for abiding by the rules of conduct, rather than focusing primarily on misbehaviour.
- building community and parent relationships
- contact parents when students do something well.
- enlist involved parents in getting other parents to participate in the school's culture.
- examine how parents and community members are involved in your school and if there are ways to increase that involvement.

With reference to this study, building a safe and health school means involving proximate stakeholders in a collaborative effort to create a nurturing school environment, prepare for emergencies, provide activities before and after school and increase community involvement in the school. Therefore, when developing a safety and health manual, this

study asked the pupils, teachers, auxiliary staff, parents and other stakeholders what could be done to make the school a safer and health places.

### **3.7 Concept of Health**

Generally, health can be defined as the level of functional or metabolic efficiency of a living organism. In humans, it is the general condition of a person's mind and body, usually meaning to be free from illness, injury or pain (as in "*good health*" or "*healthy*"). The World Health Organization (WHO) defined health in its broader sense in 1946 as a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity.

The term "healthy" is also widely used in the context of many types of non-living organisations and their impacts for the benefit of humans, such as in the sense of healthy communities, healthy cities or healthy environments. In addition to health care interventions and a person's surroundings, a number of other factors are known to influence the health status of individuals, including their background, lifestyle and economic and social conditions; these are referred to as “determinants of health” (World Health Organisation, 2002).

In designing a localised school safety and health manual, it is important that Sefula Secondary School proximate stakeholders understood the meaning of health. This would help them identify unhealthy conditions and situations in Sefula Secondary School environment. Moreover, stakeholders’ understanding of the term ‘health’ is likely to influence their health practices in the context of their school environment.

#### **3.7.1 Features of a Health Promoting School**

Distinguished by six key features (World Health Organisation, 1996), a Health-Promoting School:

*1. Engages health and education officials, teachers and their representative organisations, students, parents, and community leaders in efforts to promote health, with*

- families and community groups involved in the school
- community services, businesses and organisations linked to the school
- school or community projects and outreach

- health promotion for school staff

*2. Strives to provide a safe, healthy environment, including:*

- sufficient sanitation and water
- freedom from abuse and violence
- a climate of care, trust and respect
- social support and mental health promotion
- safe school grounds
- opportunities for physical education and recreation

*3. Provides skills based health education, with:*

- curricula that improve students' understanding of factors that influence health and enable them to make healthy choices and adopt healthy behaviours throughout their lives
- curricula that include critical health and life skills, a focus on promoting health and well-being as well as preventing important health problems, and information and activities appropriate to children's intellectual and emotional abilities
- training and education for teachers and parents

*4. Provides access to health services, with:*

- services (screening, diagnosis, monitoring growth and development, vaccination, selected medications or procedures) that may be most efficiently provided in the school setting, depending on school resources and mandates
- partnerships with local health agencies that will provide services nutrition and food safety programmes

*5. Implements health-promoting policies and practices, such as:*

- an overall policy supported by school administration and management as well as teaching practices that help create a healthy psychosocial environment for students and staff
- policies on equal treatment for all students
- policies on drug and alcohol use, tobacco use, first aid and violence that help prevent or reduce physical, social and emotional problem

6. *Strives to improve the health of the community by:*

- focusing on community health concerns
- participating in community health projects

Fundamentally, a Health-Promoting School uses its full organisational potential to promote health among pupils, staff, families and community members.

According to World Health Organisation (1996) the impact of Health-Promoting Schools is far reaching. This is noted as follows:

- Children enjoy enhanced physical, psychological and social well-being and the ability to take full advantage of every opportunity for education. They benefit from their parents' participation in the school. Children who learn skills to maintain health when they are young are able to apply them in their adult lives and pass them along to their children.
- Schools benefit by having parental and community input and support. They benefit by establishing links to important services and resources in the community. Broad participation from many sectors can reinforce classroom teaching by delivering consistent messages through mass media, community organisations, families and religious groups. School staff, who experience improved morale and skills, can do their jobs more effectively and improve their own health. School and health systems can maximise the efficient use of scarce resources as well as reducing waste.
- Parents and community members benefit by gaining a broader knowledge base about local health problems, learning important new health information and skills, and taking part in their children's education. They gain assurance that their neighbourhood school is open to their ideas and participation.
- Community groups and organisations benefit by having students and teachers involved in community activities. Working in collaboration with the school can also help organisations make their services or products known or accessible. Educated and healthy people are an asset to the community as a whole.
- Businesses can expect well educated and more productive employees. Joint participation by schools and businesses also gives adults a mechanism for sharing

information about what jobs are available in the community and the kinds of skills young people will need to find employment.

In relation to this study, knowledge of features of a health promoting school by stakeholders of Sefula Secondary School would help them compare with the health situation of their local school. This would be like an evaluation tool of the health status of Sefula Secondary School. Having known the features of a health promoting school as noted above, the school stakeholders were likely to apply this knowledge in safety and health planning in the context of their school.

### **3.8 Global Context on School Safety and Health**

This section looks at school safety and health manuals designed by other countries and international agencies with the view to solving the safety and health challenges. This helped identify the gap of information that this study is trying to fill.

#### **3.8.1 Bangladesh**

The Bangladesh comprehensive Manual on School Safety was developed under DIPECHO SOUTH ASIA-V agreement between Asian Disaster Management Centre (ADPC) and Plan Bangladesh and Islamic Relief Worldwide Bangladesh with technical inputs from Handicap International. This manual was developed after understanding the needs of schools in Bangladesh by collecting primary and secondary data on hazards and vulnerability of Bangladesh, related activities carried out by various agencies and carrying out interviews and group discussions with schools in various hazard prone locations (Asian Disaster Preparedness Centre (ADPC), European Commission Humanitarian Aid and Civil Protection DG (ECHO) Islamic Relief Worldwide Plan International, 2010).

The purpose of the manual was to assist education authorities, school management, staff, teachers and pupils to make their schools safer and to know what to do before, during and after different types of disasters occur. Specifically, after participating in a training based on the manual, teachers were expected to:

- understand the basic concepts of Disaster Risk Reduction and emergency response need for responding to disaster event effectively;
- understand multi hazards scenario in the country;



- gain knowledge on specific requirements for school safety, risk reduction and preparedness;
- be able to identify specific hazards, vulnerabilities and capacities concerning the school premises;
- be able to identify non-structural vulnerabilities and plan for minimizing the impact due to disaster risk;
- be able to develop Disaster Management Plan for School including the evacuation and emergency evacuation mock drill;
- become Master Trainer on School Safety and will be able to teach and train other teachers and students.

Bangladesh is susceptible to various hazards including earthquakes, recurrent floods and water logging, flash floods, landslides, cyclones and fire. In case of earthquakes, past few hundred years there have been several significant earthquake events recorded in Bangladesh. According to Global Seismic Hazard Assessment Programme (GSHAP, 2010) data, Bangladesh lies in a region with low to high seismic hazard risks that increase in the northern and eastern parts of the country. Its neighbouring country like India did experienced major earthquakes in 2001 (Gujarat-Bhuj, India). Apart from earthquakes, other disasters such as cyclones, floods, landslides, fire and water logging are regular features in Bangladesh.

The school safety manuals developed by the government of Bangladesh was too generic. It was meant to be used by all schools in the country. This is not practically possible because each school in Bangladesh had different environmental challenges depending on location and other social cultural issues. Therefore, one safety manual for all schools in the country may not solve specific individual school needs. This current study has proposed the use of a localised school safety and health manual for a single school in developing safety and health intervention for a work place.

### **3.8.2 Malaysia**

In Malaysia, schools have a legal responsibility to ensure the safety of pupils under the common law doctrine of *loco parentis*. However, according to Tie (2002) school safety is a

growing problem in both primary and secondary schools. The number and severity of incidents of school violence, vandalism, theft and gangsterism and general pupil discipline and misconduct problems are increasing. Widespread media coverage of these incidents exacerbated the problem (Tie, 2002).

Traditionally, preventative measures were used in Malaysia to address negative behaviours. According to Malaysia's Ministry of Education (2002) school circulars were disseminated by authorities, school rules posted in every classroom, staff room and on school notice boards and school bags, equipment and grounds checked by teachers and prefects. All teachers were required to recognise and understand the various ordinances and circulars related to school discipline. School rules were enforced using a system of surveillance, penalties and punishments (Purkey, 1999).

To create a safe school environment, the Ministry of Education in Malaysia established a committee to examine and formulate a strategy to minimise violence in schools. It developed a blueprint for a Safe School Programme in Malaysia, known as the *Safe School Concept and Manual: Implementation Guide to Create a Safe School, Community and Family for Children* (Ministry of Education, 2002). The aim of the blueprint, which called for the support of families and local communities, was to reduce school violence and contribute to a safe school culture and environment.

Although schools in Malaysia have a blueprint for a Safe School Programme, known as the *Safe School Concept and Manual: Implementation Guide to Create a Safe School, Community and Family for Children* (Ministry of Education, 2002), this blueprint was established at national level, meaning safety planning was done by the appointed committee on behalf of schools. This means that the local needs of each individual school may not have been met by the Ministry of Education. To this effect, this study proposed a localised way of school safety and health management in order to be responsive to needs of individual schools.

### **3.8.3 Nicaragua**

In Nicaragua, where 80 per cent of primary schools lack satisfactory water supplies and adequate sanitation facilities and where educational quality is poor, the Healthy and

Friendly Schools Initiative is an integrated approach to school sanitation and hygiene education (UNICEF, 2005). The initiative aims to improve the school environment by addressing health, school hygiene, environmental sanitation and human rights in a comprehensive way linked to quality learning. It is based on the idea that schools can help transform families and communities by promoting positive practices among pupils during their formative years. Participating schools have new hand-washing facilities and chlorinated water, as well as appropriate sanitary units separated by both age and gender. There are smaller seats or toilets for preschool children, urinals for boys and one latrine adapted for children with disabilities. Life skills education and hygiene promotion have contributed to improved knowledge and the beginning of behavioural change. The initiative intends to ensure long-term sustainability by combining education, promotion of suitable hygienic practices and improvements in school infrastructure all with the active participation of the educational community, the surrounding community and the children (UNICEF, 2005).

From the foregoing, the Healthy and Friendly Schools Initiative is an integrated approach to school sanitation and hygiene education (UNICEF, 2005) was to be used by all schools. All schools were supposed to refer to this Healthy and Friendly Schools Initiative for sanitation and hygiene initiatives. This study has identified a gap in this approach to school safety and health. Therefore, this study proposed an intervention measure tailored to one school. This study proposed a more localised approach to school safety and health so that individual school needs are addressed.

### **3.8.4 United States of America**

In the United States, the federal government has funded several major projects that address issues of school safety. The Hamilton Fish Institute in Washington, for example, co-ordinates the development and evaluation of school-based prevention strategies and provides detailed guidelines on developing comprehensive approaches to school safety ([www.hamfish.org](http://www.hamfish.org)). The Safe Schools Healthy initiative funds local education authorities, which work in partnership with public health officials, police, schools and students and parents to develop violence prevention programmes ([www.mentalhealth.org/safe-schools](http://www.mentalhealth.org/safe-schools)).

A number of states have initiated similar projects. The Safe Communities, Safe Schools project, which is co-ordinated by the Centre for the Study and Prevention of Violence at

the University of Colorado, provides technical assistance and support to local schools and their communities. A Student Assistance Centre that was set up in East Hartford School, Connecticut, has reduced the number of school exclusions, suspensions and drop-outs by combining conflict resolution and peer mediation with a range of external agency supports, ranging from mental health and substance abuse to job training and police support (Meggie, et al, 2001).

From the foregoing, it is evident that the safety manual for schools in United States of America was more generic. The safety manuals were developed by the individual state to cater for more than one school. This study argues the manual developed for more than one school may not be responsive to local needs of individual schools. Each school has its own safety and health challenges. Moreover, schools differ in design, location, work processes, safety culture and other socio-demographic characteristics. Therefore, the safety manual developed should be an intervention measure meant for one school unlike generalising. This present study has developed a safety and health manual for one school which is the most appropriate approach unlike drawing a generalised safety manual for more than one school.

### **3. 9 African Perspectives on School Safety and Health**

#### **3.9.1 South Africa**

In South Africa, the Department of Education takes school safety very seriously. As an apex priority, the department has put in place various policies and measures to ensure the safety of all learners, educators and relevant stakeholders in schools.

According to Linda (2013) the Department of Education stresses that there is no place for violence, drug-use or abuse, sexual harassment and other criminal acts in schools as it poses a serious barrier to learning. The Department has great focus on the inculcation of values and ethics among pupils and a just and caring society within schools and communities. The Department views these ills in a seriously because they have a potential of depriving learners of their inherent constitutional rights to life, education, equality and dignity.

In South Africa, interventions have focused on addressing elements of physical infrastructure related to proper fencing, alarm systems and burglar proofing, resilience-building programmes for young people and the strengthening of partnerships with relevant stakeholders (Linda, 2013). The Department has a solid partnership with the South African Police Services (SAPS) aimed at linking schools with local police-stations and the establishment of functional School Safety Committees.

South Africa developed a National School Safety Framework to serve as a management tool for Provincial and District Officials responsible for school safety, principals, Senior Management Team Members, SGB members, teachers and learners to identify and manage risk and threats of violence in and around schools. The Framework is critical in empowering all responsible officials in understanding their responsibilities regarding school safety

The Department has developed a National Strategy for the Prevention and Management of alcohol and Drug use amongst learners in schools. As schools mirror the communities, curbing drug use in schools will in turn prevent drug use within the communities and render them safe for all citizens. Schools have been provided with a Guide to Drug Testing in South African Schools.

Guidelines for the Prevention and Management of Sexual Violence and Harassment have been developed and distributed to schools to support schools and school communities in responding to cases of sexual harassment and violence against learners. The guidelines set out clearly how public schools should treat victims of sexual harassment and violence and the steps that must be taken to deal with those who have or are alleged to have committed such acts.

The department has released a handbook for learners on how to prevent sexual abuse in public schools, titled *“Speak Out - Youth Report Sexual Abuse”*. The purpose of the handbook is to equip learners with knowledge and understanding of sexual harassment and sexual violence, its implications, ways to protect themselves from perpetrators, and where to report. The handbook also provides very useful contact details of national and provincial organizations that can assist.

As can be seen from the foregoing, South Africa has no specific safety and health manual for use in schools. It only has general safety and security guidelines for schools. These guidelines, however, may be too generic. They may not provide a specific way of dealing with safety and health issues in a particular school as shall be seen in the manual developed by this study (see Appendix A). The safety guidelines for schools in South Africa are also more focused on psychosocial safety and not on other diverse aspects of school safety and health. To this effect, this study has provided a more diverse way of planning for school safety and health issues for an individual school.

### **3.9.2 Kenya**

Kenya Ministry of Education (KMoE, 2008) explains that apart from personal threats, insecurity for children can emanate from inappropriate school facilities and infrastructure. These may include poorly constructed classrooms and playing grounds, insufficient and broken-down toilet facilities, gender insensitive location of toilet and bathroom facilities, and inadequate and inappropriate desks and other furniture. Owing to this, the Ministry of Education came up with Safety Standards Manual to create and maintain a Safe, Secure and Caring environment that facilitates and enhances quality teaching and learning processes in all schools in the country.

The School Safety Standards Manual for schools in Kenya serves as a blueprint for enhancing the safety of schools. Successful implementation of measures proposed require partnerships with various stakeholders, among them learners, schools, parents, local communities, Non-Governmental Organisations (NGOs), religious organisations and other Community Based Organisations (CBOs).

Threats to learners are addressed through carefully thought out measures and strategies. It was against this background that the Ministry of Education, in 2003, entered into a partnership programme, School Safe Zones, with Church World Service (CWS). The programme promotes enhanced safety for learners in schools. This partnership came at the right time in view of the implementation of Free Primary Education that resulted in massive enrolment of learners at basic level in 2003.

The Kenyan government has a more elaborate safety manual for schools. This manual covers diverse aspects of safety and health issues for schools in Kenya. However, the safety manual for schools in Kenya is also generic. It focuses on all schools in Kenya. This manual may not be responsive to the local safety and health needs for each school. This is because each school in Kenya has its unique environmental challenges. This arises from differences in location, design, interaction processes and other socio-demographic characteristics of people in school community. Therefore, it is ideal to develop a safety manual for individual schools so that specific safety and health interests are dealt with. This present study has developed a localised safety and health manual for one school which is the most appropriate approach to school safety and health management, unlike drawing a generalised safety and health manual for more than one school.

### **3.9.3 Zambia**

The Ministry of Education in Zambia has no ‘Safety and Health Manual for schools’. However, there are some few pieces of literature that highlight issues of safety, health and security in schools. For example, the Ministry of Education Standards Evaluation Manual (1997) outlines items and indicators in relation to infrastructure in Zambian schools. The Ministry of Education (1997), states that it is important for Education Board members to monitor the state of the school buildings and surroundings. The Board should ensure that the school administration carries out the day to day administration of cleaning the school environment. Where a Board embarks on building, extending or renovating school buildings, standard dimensions of rooms should be followed. Boards should, among other things, ensure that recommendations for male and female closets are also followed. Boards in rural areas and those in some urban areas using pit latrines should construct Ventilated Improved Pit Latrines, commonly known as VIPs.

Table 2 shows the details of school buildings and infrastructure as recommended by the Ministry of Education (MoE, 1997).

*Table 2: Recommendations for School Buildings and Infrastructure*

ITEM	INDICATORS
School buildings and upgrading of infrastructure	Whenever an Education board embarks on building or expanding a school, standard dimensions should be followed
Female rooms	<p>In compliance with the public health regulations, the following water closets (WC) and wash hand basins (WS) are required:</p> <ul style="list-style-type: none"> <li>(a) 1 water closet per 10 pupils</li> <li>(b) 4 water closet per 30 pupils</li> <li>(c) 5 water closets per 50 pupils</li> <li>(d) 6 water closets per 70 pupils</li> <li>(e) At least one incinerator for the entire school</li> </ul>
Male rooms	<ul style="list-style-type: none"> <li>(a) 1 water closet per 20 pupils</li> <li>(b) 2 water closet per 30 pupils</li> <li>(c) 1 x 60cm urinary per 20 pupils</li> <li>(d) Wash hand basins apply to both male and female pupils</li> <li>(e) 8 hand basins for the 100 pupils</li> <li>(f) 3 hand wash for the next 50 pupils</li> </ul>
Latrines	<p>If the school uses pit latrines:</p> <ul style="list-style-type: none"> <li>1. Education Boards should ensure that they construct ventilated improved pit latrines</li> <li>2. The VIP's should be clearly labelled for boys and girls or male and female staff members</li> <li>3. The recommended numbers for VIPs' are as follows: <ul style="list-style-type: none"> <li>(a) 2 VIPs for each classroom</li> <li>(b) 1 VIP for male and 1 for female staff</li> <li>(c) 1 VIP for each staff house</li> </ul> </li> <li>4. Disinfectants must be applied in all toilets/latrines at least once per day</li> </ul>
Rural schools	<ul style="list-style-type: none"> <li>1. Education Boards should ensure that classrooms and specialized rooms are made out of durable material such as: <ul style="list-style-type: none"> <li>(a) Burnt bricks</li> <li>(b) Concrete floors</li> <li>(c) stone walls</li> </ul> </li> </ul> <p>This will make the structures firm and permanent</p>
Finishes	Education Boards should ensure the following finishes apply for



ITEM	INDICATORS
	<p>all teaching space and administration blocks:</p> <ol style="list-style-type: none"> <li>1. floors should be of high standard concrete, screed, wooden parquet or vinyl tile</li> <li>2. walls should be of burnt bricks or plastered brickwork, painted with PVA and gloss paint</li> <li>3. The inside walls should be skirted with PVA and gloss paint</li> <li>4. All roofs must carry suspended ceilings</li> <li>5. Windows must be big enough to allow sufficient day lighting and whenever possible Education Boards should strive to install electricity in their schools</li> <li>6. Where window frames have been used, they must have glass panes. Perforated bricks can also be used to allow in enough air and light</li> </ol> <p>Air vents should be placed on opposite walls to ensure cross ventilation</p>
Special Education Needs Facilities	<ol style="list-style-type: none"> <li>1. Buildings and facilities where SEN pupils and students are found should be modified or modified to suit their needs</li> <li>2. School grounds must be free from unnecessary obstacles such as pools of water or any dangerous items</li> </ol>
Chalk boards	<ol style="list-style-type: none"> <li>1. All teaching rooms must have at least 1 chalk board and 1 notice board each</li> <li>2. The size of the chalk board and notice board should be of the basic size 2.44 x 1.2m.</li> <li>3. The chalk board should be painted with either black or green chalk board paint.</li> </ol>
Furniture	<p>It is the responsibility of Education Boards to purchase sufficient and appropriate furniture for their schools. Teaching rooms should have the following furniture:</p> <ol style="list-style-type: none"> <li>1. Wooden or steel desks, benches and chair of the right sizes for all pupils according to the age groups</li> <li>2. The dimensions of furniture for both primary secondary schools must be appropriate</li> <li>3. Shelves in the library should be more than 1 metre long</li> <li>4. The width of a standard library shelf should be about 20cm wide</li> <li>5. The distance between library shelves should be about 30cm</li> <li>6. The size of shelving units should suit the age range of the pupils</li> </ol>
Sports facilities	<ol style="list-style-type: none"> <li>1. There should be sign posts to all sporting fields</li> <li>2. Sports and games facilities should be accessible to all</li> </ol>

ITEM	INDICATORS
	<p>pupils and located away from high ways and buildings</p> <p>3. Each game/sport should have its own area with recommended dimensions, e.g.;</p> <p>(a) The football field dimensions should be 100m x 60m</p> <p>(b) The netball field should be 30m x 15m</p> <p>(c) The basketball field should be 26m x 14m</p> <p>(d) The running track should be 400m in length</p> <p>(e) Games such as lawn tennis, table tennis, badminton, cricket, rugby, squash, volleyball, swimming and hockey should be encouraged by all Education Boards</p> <p>(f) Schools should be encouraged to have appropriate facilities and equipment for as many sporting activities as possible</p>
Use of school/college facilities for any purpose by members of the public or local community	<p>1. This is not encouraged by MoE but arrangements can be between school authorities and those concerned.</p> <p>2. All buildings must be kept clean and locked during holidays and weekends except those for special and specified needs.</p>
Personal and environmental health	Board members will note that the health of school children cannot be divorced from the nature of their environment. Thereafter, pupils should be seen to maintain high standards of hygiene as well as keep the environment clean. Conducting health inspections especially for primary and high schools

(Source: Ministry of Education (1997) Standards Evaluation Guidelines, Lusaka)

Educating Our Future, Zambia's policy document (1996), notes that there is a two-way relationship existing between health and education. Teaching and learning are affected by the personal health of members of the school community, while school activities and what is learned can be powerfully influential factors in promoting the health and well-being of pupils. The relationship between health and education is of great importance in Zambia where poverty related malnutrition, environmentally related malaria, life-style related sexually transmitted diseases and other health problems are wide spread (Ministry of Education, 1996).

The Environmental Management Act (2011) records that 'the right to clean, safe and healthy environment shall include the right of access to the various elements of the environment for recreational, education, health, spiritual, cultural and economic purposes.'

This statement stresses the importance of a safe and a healthy environment for the betterment of education.

From the foregoing, it is clear that there are no safety and health manual for individual schools in Zambia. Therefore, this research proposed a localised approach to school safety and health management.

#### **3.9.4 School Safety Manual: Tools for Teachers**

The United Nations Educational, Scientific and Cultural Organization and International Institute for Capacity Building in Africa ( UNESCO and IICBA, 2017) developed a school safety manual as part of the Teacher Training and Development for Peace-building in the Horn of Africa and Surrounding Countries. The aim of this project was to introduce teachers to the knowledge and skills needed for the establishment, maintenance and sustainment of basic school safety. UNESCO and IICBA (2017) noted that as more children were enrolling in schools in Africa, creating a safe and peaceful environment must be a top priority of teachers and educational institutions. This manual was mainly designed to guide teachers in school safety. The authors noted that it was a teacher's responsibility to ensure the safety and well-being of students who are in their charge. They can take pride in the fact that they are well versed in safety knowledge and skills. Parents will trust them knowing that they have taught the students how to be safe. The present study, however, looks at how all stakeholders in school could be involved in safety and health management, unlike only involving teachers.

#### **3.9.5 Synthesis of Literature Reviewed**

Social setting seems to play a major role in school safety and health planning. Schools in different social settings have different safety and health challenges. This explains why different countries in general and schools in particular should have different approaches towards safety and health management.

This was observed in literature reviewed above. For example, there are different meanings attached to issues of school safety and health. The difference in meanings meant that approaches to safety and health practice in schools may also differ. In Bangladesh, for example, the safety manual for schools focuses on a multi hazard approach. This is because

Bangladesh is susceptible to various hazards including earthquakes, recurrent floods and water logging, flash floods, landslides, cyclones, and fire. Therefore, so many types of hazards are accounted for in planning for school safety manuals. Safety manuals reflect the type of disasters that a given school faces, depending on geographic location. For example, a school in flood prone areas will reflect flood safety and health in its manual.

The foregoing argument is true with schools in the United States of America. In the U.S, most school safety planning is biased towards psychosocial safety. Violence and bullying seem to be very much accounted for in school safety planning. According to the Centre for Disease Control and Prevention (CDC), 7.4% of high school pupils in U.S in 2011 reported being threatened or harmed with a weapon on school grounds. The National Centre for Education Statistics notes that between 1992 and 2009, there were between 14 and 34 homicides among children aged 5 to 18 at school each year. The CDC puts these levels of violence in statistical perspective: “Approximately 1% of all youth homicides in 2008-2009 occurred at school and the percentage of all youth homicides occurring at school has been less than 2% since the 1992-1993 school year. There was approximately one homicide or suicide of a school age youth at school per 2.7 million pupils enrolled during the 2009-2010 school year.” Further, the CDC notes that 5.4% of pupils “reported carrying a weapon (gun, knife or club) on school property on one or more days in the 30 days preceding the (2011) survey.”

As a result of the foregoing, many schools in U.S plan for school safety in terms of violence, bullying, shootings, homicides and other related crimes. Many schools have implemented strategies to eliminate or mitigate the damage and loss of life in possible future attacks; this range from improving mental health care and implementing violence prevention curriculum to enhanced security and communication protocols. Safety planning levels vary by social setting, according to 2009-10 National Centre for Education Statistics data: 58% of suburban schools perform safety drills according to a specified plan, compared with 49% of urban schools and 48% of rural schools.

With reference to the foregoing state of school safety planning in the U.S, this study has noted that other forms of school safety are not taken care of. For example, some schools in the U.S may have poor state of infrastructure, compromising physical safety. However, much effort is on keeping schools safe in terms of psychosocial safety. Other aspects of

school safety seem to be silent in U.S schools, for example, food safety, transport safety and so on. This research accounted for other aspects of school safety unlike only focussing on psychosocial safety as noted in U.S schools.

In South Africa, school safety and health planning focuses much on violence and bullying as critical issues in schools. In a research conducted by the South African Institute of Race Relations (SAIRR, 2008) it is revealed that South African schools are regarded as the most dangerous in the world and that learners lived in fear. This is because many schools and communities developed a 'culture of crime' and violence. Government departments such as education, health, social development and safety and security needed to cooperate and intervene with a broad, long-term strategy in safety and health planning. Unlike focusing much on psychosocial safety as seen from the foregoing, this study accounted for other aspects of school safety like safety of pupils with special needs, food safety, transport safety and so on.

In Kenya, School Safety Standards Manual serves as a blueprint for enhancing safety of schools. Successful implementation of measures proposed require partnerships with various stakeholders, among them learners, schools, parents, local communities, Non-Governmental Organisations(NGOs), religious organisations and other Community Based Organisations (CBOs). Kenya Ministry of Education (2008) focuses on varied aspects of safety issues that affect schools. School safety is defined in many categories in Kenya as follows: Safety on school grounds, Safety of physical infrastructure, Transport safety, Food safety, Safety against child abuse, Health and safety hygiene, Safety against drugs and substance abuse, Safety in teaching-learning environment, Safety of learners with special needs, Disaster Risk Reduction and School-Community relations. This shows a varied way of accounting for school safety unlike just looking at psychosocial safety as the case is for South Africa and United States of America. However, the school safety manual in Kenya is too generalized. Some schools may not find the manual useful because it may not apply to school context. This study has therefore provided a way of developing a safety and health manual tailored to a particular school. This is because each school has its own peculiar safety and health challenges.

From the reviewed literature, it is clear that most countries and states seem to plan for school safety and health at national, provincial or district level and then taken to schools

for implementation. They develop safety and health manuals for schools in a more general way. This study, however, argues that a generalised school safety and health manual for all schools is not a practical way of solving the problem. This is because each school has its own peculiar safety and health challenges. Therefore, this study proposes developing a localised school safety and health manual to answer specific safety and health challenges faced by an individual school.

### **3.9.6 Summary**

The review of literature in this chapter covered most of the major aspects relating to school safety and health issues at Sefula Secondary School: An overview, concept of safety, concept of safety and education, meaning of school safety, features of a safe school, meaning of health and features of a health promoting school, importance of a safe and healthy school environment, dangers of an insecure and unhealthy school environment; including case studies from global and African perspectives on school safety and health. Moreover, the chapter covered the conceptual framework, theoretical frame work and paradigmatic orientations of this study. The next chapter addresses research methodology and research design undertaken to achieve the objectives of the study and to answer the research questions.

## CHAPTER 4: RESEARCH METHODOLOGY

### 4.1 Overview

This chapter discusses the research paradigm, methodologies and design used in the study including strategies, instruments and data collection and analysis methods involved in the study. The research design for this study was a qualitative case study. Observation, interviews, focus group discussion and document analysis were used as methods of primary data collection. In order to ensure trustworthiness of the data, appropriate criteria for qualitative research are discussed and several methods that include member checks, peer reviews, crystallization and triangulation were used.

### 4.2 Research Paradigm

The term paradigm comes from the Greek word *paradeigma* which means *pattern*. The term paradigm was first used by Thomas Kuhn (1962) to denote a conceptual framework shared by a community of scientists which provided them with a convenient model for examining problems and finding solutions. Kuhn (1962) defines a paradigm as: “an integrated cluster of substantive concepts, variables and problems attached with corresponding methodological approaches and tools...” It is a research culture with a set of beliefs, values and assumptions that a community of researchers hold in common relation to the nature and conduct of research (Kuhn, 1977). Taylor, Kermode and Roberts (2007:5) defined a paradigm as “a broad view or perspective of something”. Weaver and Olson’s (2006: 460) also defined paradigm, revealing how research could be affected and guided by a certain paradigm by stating, “A paradigm is a pattern of beliefs and practices that regulate inquiry within a discipline by providing lenses, frames and processes through which investigation is accomplished”. A research paradigm was used to guide the study in terms of nature of reality, the status of human knowledge and the kinds of methods that could be used to answer research questions. Gephart (1999) classified research paradigms into *three* philosophically distinct categories. These are *positivism*, *interpretivism* and *critical postmodernism*. The key features of these three perspectives are discussed below.

#### (a) Positivism

The positivist paradigm is based on the philosophical ideas of the French Philosopher August Comte. According to Comte, human behaviour can best be understood through

observation and reasoning. The positivist paradigm asserts that real events can be observed empirically and explained with logical analysis. Positivist research methodology emphasizes micro-level experimentation in a laboratory like environment that eliminates the complexity of the external world (e.g., social, psychological and economic linkages between unemployment and crime or suicide). According to positivism, true knowledge can be obtained by observation and experiment. At the ontological level, knowledge is objective and quantifiable. Positivistic researchers adopt scientific methods and systematize the knowledge generation process with the help of quantification to enhance precision in the description of parameters and the relationship among them. Positivism depends on quantifiable observations leading to statistical analysis. According to Collins, (2010) has an atomistic, ontological view of the world as comprising discrete, observable elements and events that interact in an observable, determined and regular manner”

Although positivistic paradigm continued to influence educational research for a long time in the latter half of the twentieth century, its dominance was challenged by critics from two alternative traditions, that is, interpretive constructionist and critical postmodernism due to its lack of subjectivity in interpreting social reality. According to its critics, objectivity needs to be replaced by subjectivity in the process of scientific inquiry.

A modified objectivist perspective called post positivism (Phillips, 1990), however, claims that, although the object of our inquiry exists outside and independent of the human mind, it cannot be perceived with total accuracy by our observations. This represents the critical realist ontology, as articulated by Cook and Campbell (1979). Thus, the positivist focus on experimental and quantitative methods have been superseded or complemented to some extent by an interest in using qualitative methods to gather broader information outside of readily measured variables (Gephart, 1999).

### **(b) Critical Postmodernism**

According to Gephart (1999) critical postmodernism is a combination of two worldviews; critical theory and postmodern scholarship. Critical Theory is a tradition developed by the Frankfurt School in Germany, based on the German tradition of philosophical and political thought of Marx, Kant, Hegel and Max Weber.



Postmodernism is a form of scholarship which emerged in part through the work of French intellectuals such as Lyotard, Derrida and Foucault (Gephart, 1999). According to critical researchers, social reality is historically constituted and that it is produced and reproduced by people (Myers, 2009). Although people can consciously act to change their social and economic circumstances, critical researchers recognize that their ability to do so is constrained by various forms of social, cultural and political domination. Therefore, critical scholarship seeks to transcend beliefs, values and social structures taken-for granted by making these structures and the problems they produce visible, by encouraging self-conscious criticism, and by developing emancipatory consciousness in scholars and social members in general (Kincheloe and McLaren, 1994, pp. 138-157). The aim is to openly critique the status quo, focus on the conflicts and constraints in contemporary society, and seek to bring about cultural, political and social change that would eliminate the causes of alienation and domination. According to Reeves and Hedberg, (2003) the paradigm of critical theory encourages evaluators and instructional designers to question and evaluate cultural, political and gender assumptions underlying the effectiveness of the instructional product or programme.

### **(c) The Interpretivism Paradigm**

*Interpretivism* is directed at understanding phenomena from an individual's perspective and at investigating interactions among individuals as well as historical and cultural contexts that people inhabit (Creswell, 1994). Interpretive researchers believe that reality consists of people's subjective experiences of the external world; thus, they may adopt an inter-subjective epistemology and the ontological belief that reality is socially constructed. According to Willis (1995) Interpretivists are anti-foundationalists, who believe that there is no single correct route or particular method to knowledge. Walsham (1993) also argues that in the interpretive tradition, there are no 'correct' or 'incorrect' theories. Instead, they should be judged according to how 'interesting' they are to the researcher as well as those involved in the same areas. They attempt to derive their constructs from the field by an in-depth examination of the phenomenon of interest. Gephart (1999) argues that interpretivists assume that knowledge and meaning are acts of interpretation; hence there is no objective knowledge which is independent of thinking, reasoning humans.

Myers (2009) argues that the premise of interpretive researchers is that access to reality (whether given or socially constructed) is only through social constructions such as

language, consciousness and shared meanings. Interpretive paradigm is underpinned by observation and interpretation, thus to observe is to collect information about events, while to interpret is to make meaning of that information by drawing inferences or by judging the match between the information and some abstract pattern (Aikenhead, 1997). It attempts to understand phenomena through the meanings that people assign to them (Deetz, 1996).

The interpretive paradigm is concerned with understanding the world as it is from subjective experiences of individuals. They use meaning oriented methodologies, such as interviewing or participant observation, that rely on a subjective relationship between the researcher and subjects. According to Kaplan and Maxwell, (1994) interpretive research does not predefine dependent and independent variables, but focuses on the full complexity of human sense making as the situation emerges. Interpretive approach aims at explaining subjective reasons and meanings that lie behind social action. According to Burrell and Morgan (1979), interpretivism is not a single paradigm; it is in fact a large family of diverse paradigms. The philosophical base of interpretive research is hermeneutics and phenomenology (Boland, 1985).

The most fundamental principle of hermeneutics is that all human understanding is achieved by iterating between considering the interdependent meaning of parts and the whole that they form. Modern hermeneutics encompasses not only issues involving the written text, but everything in the interpretative process that include verbal and nonverbal forms of communication as well as prior aspects that affect communication, such as presuppositions, and pre-understandings.

#### **4.2.1 Rationale for choice of the Interpretivism Paradigm**

To clarify the structure of inquiry and methodological choices, interpretative paradigm was adopted for this study. Interpretivists contend that only through the subjective interpretation and intervention in reality can that reality be fully understood. The study of phenomena in their natural environment is cardinal to the interpretivist philosophy, together with the acknowledgement that researchers cannot avoid affecting those phenomena they study.

Within a local school environment, in relation to safety, health and welfare, there may be many interpretations of reality, but these interpretations are in themselves a part of the knowledge being pursued. This makes Interpretivism a suitable paradigm because interpretations of safety and health may actually differ from one school environment to the other.

Interpretivism paradigm is appropriate for this study on safety, health and welfare status in the school environments because schools are in social settings where there are multiple realities. In relation to this paradigm, safety, health and welfare status in the school environments will be understood from subjective experiences of individuals within the school set ups. This is because matters of safety and health are relative. What is considered safe and health in one school environment may not be the same in the other. Therefore, there is a lot of subjectivity in response rates. This is supported by Ernest (1994) who argues that in interpretivism, social reality is seen by multiple people and these multiple people interpret events differently leaving multiple perspectives of an incident.

The direct experience of the people is one of the main tenets of interpretivism. This suits a study on safety and health issues in the school environments because information has to really come from the staff, pupils and visitors within the school setting because they have direct experience. Moreover, the role of the interpretivist paradigm is to understand, explain and demystify social reality through the eyes of different participants, in this case, teachers, pupils and visitors found within the Sefula Secondary School environment.

#### **4.2.2 Epistemological and Ontological Assumptions of the adopted philosophy**

Table 3 shows the epistemological and ontological assumptions, as used in this study, categorised into the aim of the research, the nature of reality (ontology), nature of knowledge and the relationship between the inquirer and the inquired-into (epistemology) and the methodology used (Cantrell, 2001).

*Table 3: Epistemological and Ontological Assumptions of the adopted philosophy*

Feature	Description
Aim of research	To develop a localised school safety and health manual for Sefula Secondary School
Ontological Assumptions	<ul style="list-style-type: none"> <li>▪ there are multiple realities when dealing with safety and health issues in the school environments</li> <li>▪ reality can be explored and constructed through human interactions, and meaningful reactions dealing with safety and health in the school environments</li> <li>▪ when dealing with safety and health in the school environments, there is need to discover how staff and pupils make sense of their social worlds in the natural setting by means of daily routines, conversations and writings while interacting with others around them. These writings could be text and visual pictures</li> <li>▪ in the school environment, many social realities exist due to varying human experience, including peoples' knowledge, views, interpretations and experiences.</li> </ul>
Epistemology Assumptions	<ul style="list-style-type: none"> <li>▪ events in the school environments are understood through the mental processes of interpretation that is influenced by interaction with social contexts</li> <li>▪ the researcher and participants process socially construct knowledge by experiencing the real life or natural settings within the school environments</li> <li>▪ inquirer and the inquirer-into are interlocked in an interactive process of talking and listening, reading and writing</li> <li>▪ more personal, interactive mode of data collection</li> </ul>
Methodology	<ul style="list-style-type: none"> <li>▪ processes of data collected by interviews, focus group discussion, observations and reflective sessions</li> </ul>

(Source: Field data, 2018)

### 4.3 Research Design

The study adopted a qualitative study approach whose specific research design was an intrinsic case study. Research design is a master plan of a research that throws light on how the study is to be conducted. It is a plan on how a study will be conducted or a detailed outline of how an investigation will take place. It specifies conditions and optimum research procedures to be followed in conducting a research study. According to Msabila and Nalaila (2013: 27) “a research design will typically include how data is to be collected, what instruments will be employed, how the instruments will be used and the intended means of data for data analysis”. According to Mouton (1996: 175) the research design serves to “plan, structure and execute” the research to maximise the “validity of the findings”. It gives direction from the underlying philosophical assumptions to research design and data collection. Yin (2003: 19) adds further that “colloquially, a research design is an action plan for getting from *here* to *there*, where ‘here’ may be defined as the initial set of questions to be answered and ‘there’ is some set of (conclusions) answers”. Muzumara (1998:46), defines research design as

*...the organisation, plan, or procedure by which an investigator intends to answer research questions. The design is also intended to control errors of procedures and interpretation: the structure of the design specifically delimits the kind of observations which can be made, the persons from whom data can be collected, and the kind of analysis it is possible to make within the framework and the form of the data.*

#### 4.3.1 Qualitative Approach

This study mainly used a qualitative approach. A qualitative approach was employed in order to satisfactorily answer the research questions posed regarding safety and health issues at Sefula Secondary School. According to Leedy and Ormrod (2005:133),

*to answer research questions, we cannot skim across the surface. We must dig deep to get a complete understanding of the phenomenon we are studying. In qualitative research, we do indeed dig deep: we collect numerous forms of data and examine them from various angles to*

*construct a rich and meaningful picture of a complex, multifaceted situation.*

McMillan and Schumacher (2001:395) define qualitative research as an inquiry in which researchers collect data in face-to-face situations by interacting with selected persons in their settings. Smith (1987:175) also notes that qualitative research is based on the notion of context sensitivity. It is different from other forms of research because the social environment in which people find themselves has a great bearing on what they think and how they act. Similarly, it was hoped that participants in this study would share with the researcher their beliefs, feelings and attitudes about safety and health issues and concerns in the context of Sefula Secondary School.

Qualitative research was used in this study because it is naturalistic. This means that it attempts to study the everyday life of different groups of people in Sefula community as their natural setting; it is particularly useful to study educational settings and processes. Qualitative research involves an interpretive, naturalistic approach to its subject matter; it attempts to make sense of, or to interpret, phenomena in terms of the meaning people bring to them (Denzin and Lincoln, 2003). According to Domegan and Fleming (2007), qualitative research aims at exploring and discovering issues about the problem at hand, because very little is known about the problem. There is usually uncertainty about the dimensions and characteristics of the problem. Qualitative research uses 'soft' data and gets 'rich' data. Qualitative research helped the researcher to understand social and cultural contexts within Sefula area. This is in agreement with Myers (2009) who argues that qualitative research is designed to help researchers understand people and the social and cultural contexts within which they live. Such studies allow the complexities and differences of worlds-under-study to be explored and represented (Philip, 1998: 267).

Qualitative approach was used because it allowed the researcher to use different knowledge claims, enquiry strategies and data collection methods and analysis (Creswell, 2003). Qualitative data sources include observation and participant observation (fieldwork), interviews and documents and texts and the researcher's impressions and reactions (Myers, 2009). Therefore, it was easy for the researcher to derived data from direct observation of behaviours, from interviews, from written opinions, or from public documents (Sprinthall, Schmutte, and Surois, 1991: 101).

In qualitative studies the researcher is considered the primary instrument of data collection and analysis. The researcher engages the situation, makes sense of the multiple interpretations, as multiple realities exist in any given context as both the researcher and the participants construct their own realities. She or he strives to collect data in a non-interfering manner, thus attempting to study real-world situations as they unfold naturally without predetermined constraints or conditions that control the study or its outcomes. According to Merriam (1998: 23),

*the researcher engages the situation most often without an observation schedule, and plays a dynamic role in constructing an understanding of the research environment through self-interpretation of what happens...thus, qualitative research produces a result which is “an interpretation by the researcher of others’ views filtered through his or her own”.*

#### **4.3.2 Rationale for a Qualitative Study**

The essential processes used in this study included observing, investigating and documenting in detail, unique educational experiences of individuals in the complexity of Sefula Secondary School. The processes that influenced these experiences and the analysis of the resulting descriptive data were all undertaken by the researcher as a participant in the study. Therefore, qualitative approach allowed for ‘thick narrative descriptions’ of the phenomena under study and gave the researcher opportunity to take into account the views of the participants and the subtleties of complex group interactions and multiple interpretations in the group's natural environment. The researcher found a qualitative description of Sefula Secondary School stakeholders’ experiences and an inductive analysis of data as most appropriate for the purpose of this research because all these procedures enhanced the possibility for some kind of objectivity which would have been lost if quantitative or experimental strategies were applied.

The qualitative approach was used because it enabled the researcher to recognize many aspects related to the management of safety and health issues at Sefula Secondary School. The approach enabled participants to describe their experiences about safety and health issues at Sefula Secondary School. Many scholars (Domegan, and Fleming, 2007;

Henning, et al, 2004; Denzin and Lincoln, 2003; Richardson, 1995) argue that human learning is best researched by using qualitative data. In selecting a research methodology, Guba (1981: 76) also suggests that "it is proper to select that paradigm whose assumptions are best met by phenomenon being investigated". It is also generally recognised that qualitative researchers are concerned with processes rather than simply the outcomes or products.

In the context of this study, qualitative approach was more appropriate than quantitative designs because it provided insight necessary to understand participants' role in managing safety and health issues at Sefula Secondary School and their perceptions of school safety and health climate.

#### **4.3.3 Case Study**

Case study aims at understanding human beings in a social context by interpreting their actions as a single group, community or a single event. Mitchell (1983) defined a case study as a "detailed examination of an event (or series of related events) which the analyst believes exhibits (or exhibit) the operation of some identified general theoretical principles". Yin (2003) defines a case study as an empirical inquiry that investigates a contemporary phenomenon within its real life context, especially when the boundaries between phenomenon and context are not clearly defined. Ritchie and Lewis (2003) define case study as a multiplicity of perspectives which are rooted in a specific context. A case study method usually selects a small geographical area or a very limited number of individuals as the subjects of study. According to Zainal (2007) case studies explore and investigate contemporary real-life phenomenon through detailed contextual analysis of a limited number of events or conditions and their relationships.

#### **4.3.4 Rationale for choice of case study research design**

In designing a localised school safety and health manual for Sefula Secondary School, an intrinsic case study model (Sarantakos, 2005) helped in probing deeply and analysing interactions between factors that explain the present and past status of safety and health of the school or that influence change or growth. The case study method made it possible to synthesise different types of primary data which included the effects of many elusive personal factors in drawing influences within the Sefula Secondary School community.



The study was conducted for its own sake without an expectation that the results may be generalised to explain similar cases because such cases would have different dynamics. Learnable principles may, however, be drawn from the case, as happened in this study.

In the intrinsic case study, the researcher's aim was to achieve a comprehensive understanding of safety and health issues at Sefula secondary school. This corresponds to Yin (2003: 3) 'descriptive case study' undertaken because of an intrinsic interest in a particular place.

Actually case study, according to Sidhu (2006) resembles almost all other types of research. It borders on historical research, for instance, in the sense that the present can be understood only in view of the past. In the context of this study, some safety and health problems faced by Sefula Secondary School currently may have a connection with the past experiences. This made the case study method even more suitable for this study.

Given the interpretive position adopted in this research and the nature of the research questions, case study methodology was considered the most appropriate approach to employ because it provided a systematic way to collect data, analyse information and report the results, consequently leading to greater and deeper understanding of safety and health issues at Sefula Secondary School.

More specifically, case study design in this study:

- provided a variety of participant perspectives;
- allowed the use of multiple data collection techniques; and
- examined integration of face-to-face instructional approaches and reflective sessions in data collection.

The case study approach allowed the researcher to use multiple methods of data collection such as interviews, document reviews, focus group discussion and observations and subsequently 'thick descriptions' of the phenomena under study (Yin, 2003). Such 'thick descriptions' gave the researcher access to the subtleties of changing and multiple interpretations in relation to school safety and health (Walsham, 1995).

In the context of this research, a case study approach had the advantage of not only collecting facts but also resulted in formulation of principles and solutions to significant

safety and health problems at Sefula Secondary School. This study collected data on safety and health status of Sefula Secondary School environment as well as measures aimed at promoting safety and health. For this purpose, phenomenological approach was also employed as it involved studying safety and health phenomenon in the natural and social school setting (Hancock, 2002).

Despite the foregoing advantages experienced in this study, case study design presented its own challenges. For example, some participants never seemed to be at ease at first time of meeting, especially that the research was asking about safety issues. To some participants, talking about talking about safety and health issues was like ‘washing dirty linen in public’. This scenario could lead to biased views that would influence the direction of findings. This is in agreement with Yin (1984:21) who notes that “too many times, the case study investigator has been sloppy, and has allowed equivocal evidence or biased views to influence the direction of the findings and conclusions”. This challenge was overcome by explaining the purpose of the research to participants and assuring them of the anonymity they required. A case study also provided very little basis for generalisation since the study was conducted at a specific school, with a small number of subjects. This is correlation with Tellis (1997) who contends that a common criticism of case study method lies in the difficulties to reach a generalised conclusion.

#### **4.3.5 Choice of the Case**

Sefula secondary school was chosen for this study because it was reported in media to have poor safety and health conditions. The Zambia Watchdog on 11<sup>th</sup> May, 2014, carried a headline, ‘*Deplorable Sanitation conditions at Sefula Secondary School*’. In this story, the school was reported to have deplorable sanitation conditions and erratic water supply which was a health hazard to the school community. Therefore, the school was chosen because there was need to address the situation from an informed point of view.

The researcher also sampled Sefula Secondary School because he was conversant with the socio-cultural norms of Sefula community. This is supported by Glen and Santon (1994) who argue that the product of individual and group values, attitudes, perceptions, competencies and patterns of behaviour determine the commitment to and the style and proficiency of, an organisation’s health and safety management. This means that ways of life of people in a given social setting could have an influence on safety culture.

Sefula secondary school was also chosen because the researcher was conversant with the *lozi* cultural values and practices inherent in Sefula community. The *lozi* societal values are characterized by a positive attitude towards people and their being. This comprises the core values of interconnectedness, participation, respect and trust. These core values form an aspect of a prevention culture, complementary to the focus on rational and informed behaviour when dealing with Safety, health and welfare issues in Sefula community.

#### **4.4 Target Population**

A population is a group of elements or cases, whether individuals, objects or events, that conform to specific criteria and to which we intend to generalize the results of research (McMillan & Schumacher 2001:169). Bless and Achola (1988:59) also agree that a population is the entire set of objects and events or group of people which is the object of research and about which the researcher wants to determine some characteristics. According to Babbie and Mouton (2004:173), a population is defined as “the theoretically specified aggregation of study elements”. Gay (1990: 102) says:

*Regardless of the technique to be used in selecting a sample, the first step in sampling is the definition of the population. The population is the group of interest to the researcher, the group to which she or he would like the results of the study to be generalisable. The defined population has at least one characteristic that differentiates it from other groups.*

Parahoo (1997:218) also describes a study population as the total number of units from which data can potentially be collected. The units may be individuals, organisations, events or artefacts. In a qualitative study, it is recommended that efforts should be made to pick participants who are knowledgeable in the issue being investigated (Kombo and Tromp, 2006; Creswell, 2007). In the context of this study, the population comprised all proximate stakeholders of Sefula secondary school. These included pupils, teachers, auxiliary staff at Sefula secondary school, parents in Sefula community, District Education Officers and Environmental health personnel at Sefula clinic. The proximate stakeholders at Sefula Secondary School were targeted because they were believed to have knowledge of safety and health concerns affecting the school. Their ideas of safety and health in Sefula

secondary school environments were important for the development of the manual. The following participants were targeted:

- The *Head teacher* gave an insight of the internal and external safety and health of the school from the management and administrative point of view.
- *Teachers* were at the centre of learning and considered as ‘fountain of knowledge’. Therefore, their experiences about safety and health status of the school environment was very cardinal
- The *pupils* at the school were also targeted. Being at the centre of the learning process, they gave an insight of the state of affairs in terms of safety and health of their school.
- *Auxiliary staff* within the schools was also interviewed. They gave information on the school’s sanitation, the nature of the school’s physical environment, cleaning equipment, personal protective equipment when working in the school environment and so on.
- *Education Standards Officer* (ESO) was also consulted. The ESO gave insight on general standards of safety in environments of the school as he carried out formal inspections.
- *Parents* were also targeted in order to get their ideas regarding the safety of their children within the school environment. This would help in determining school-community relations as a vital component of school safety and health.
- *Environmental Health Technologist (EHT)*: The EHT at Sefula clinic was also targeted. This was because she was involved in carrying out health inspections of public premises in Sefula community, including the school. Therefore, she was in position to give reliable information on health status of Sefula secondary school.

#### **4.5 Study Sample, Sampling and Sampling Procedures**

The study utilized non-probability sampling design, specifically, purposive sampling technique and snowball were used to select participants. By definition, Sampling is a process of selecting a few (a sample) from a bigger group to become the basis for estimating or predicting a fact, situation or outcome regarding the bigger group in which one is interested. Bless and Achola (1988:60) define a sample as the sub-set of the whole population which is actually investigated by a researcher and whose characteristics will be

generalized to the entire population. According to Leedy and Ormrod (2005:133), the particular entities which qualitative researchers select comprise their sample, and the process of choosing them is called sampling. The most important thing in sampling is to identify an appropriate sample from which to acquire data.

Mason (2010) argues that there is no clear recommended adequate sample size in qualitative research as it depends on the purpose of the study. This is supported by Omari (2011: 76) who argues that “there is no fixed number or percentage of subjects that determine an adequate sample”. Omari (2011) says sample size depends on the nature of the population of interest or the data to be gathered and analysed in qualitative study. For the purpose of this study, the sample comprised 30 participants. 30 participants were sampled because they adequately represented groups of special interest that require intensive study. Out of this, there were 7 teachers, 10 pupils, 3 auxiliary staff, 5 parents, 1 District Education Standards Officer (ESO) and 1 Environmental Health Technologist (EHT). Table 4 is a summary of the study sample size.

*Table 4: Study Sample size*

Stakeholders	Number	Gender	
		Male	Female
Pupils	10	5	5
Teachers	7	4	3
Parents	5	3	2
Administrators	3	1	2
Auxiliary staff	3	1	2
ESO	1	1	-
Environmental Health Technologist	1	1	-
Total	30	16	14

(Source: Field data, 2018)

#### **4.5.1 Purposive sampling**

The study used heterogeneous purposive sampling and expert purposive sampling. Teachers, pupils and auxiliary staff were selected using heterogeneous purposive sampling while the Education Standards Officer and Environmental Health Technologist (EHT) were sampled using expert purposive sampling. A heterogeneous purposive sampling was used to select teachers, pupils, administrators and auxiliary staff in order to construct a robust view of safety and health issues from different perspectives. Expert purposive sampling technique was used to select the ESO and EHT because they

had expertise knowledge in relation to safety and health at Sefula secondary school. These participants were chosen using the mentioned types of purposive sampling because they were believed to have reliable information regarding safety and health issues at Sefula secondary school. This is in agreement with Zikmund (2000) who defined purposive sampling as a non-probability sampling technique in which the researcher selects the sample based upon the researchers judgment about some appropriate characteristics required of the sampled members. Furthermore, Davies (2007) supported this with the stressed that purposive sampling invites the researcher to identify and target individuals who are believed to be typical of the population being studied.

#### **4.5.2 Snowball**

Snowball sampling is an approach for locating information-rich key informants. According to Omari (2011) snowball uses strategic follow up sessions, normally interviews with different subjects as one picks up leads from the current subjects. Parents in this study were sampled using snowball technique. Specifically, exponential non-discriminative snowball sampling was used to select parents for this study. Using this approach, a few parents were contacted and asked whether they knew of other parents with information regarding safety and health issues at Sefula secondary school. Snowball sampling was used to select parents because they were not readily available in school environment. They were located with the help teachers and school administration.

#### **4.6 Methods of Data Collection**

According to Kombo and Tromp (2006:99), data collection is the gathering of information to serve or prove some facts. Merriam (1998) argues that since case studies are normally of qualitative nature, it is logical that they utilize qualitative data collection methods. Therefore, in order to solicit for views from pupils, teachers, school administrators, parents, auxiliary staff, ESO and EHT, semi structures interviews, focus group discussions, observations and document analysis were used as data collection strategies.

According to Daymon and Holloway (2002) (in Ibrahim 2006:64), the combination of interviews, observations and document analysis as qualitative data collecting techniques are likely to yield the most needed information about the topic under investigation. Similarly, in the context of this study, a combination of these methods allowed the researcher to yield much needed information on safety and health issues at Sefula

secondary school. This study employed semi structure interviews, observations and document analysis because these methods gave more detailed insights into interpreting safety and health situation at Sefula Secondary School so much that the researcher saw things as they really were in the natural setting.

#### **4.6.1 Interviews**

McMillan and Schumacher (2006:350) explain that interviews are response questions to obtain data from participants about how they conceive and give meaning to their world and how they explain events in their lives. Qualitative interviews may take several forms: the informal conversational interview, the interview guide approach and the standardized open-ended interview. These types of interviews vary in terms of structure and comparability of responses in data analysis. According to Leedy and Ormrod (2005:146),

*Interviews in a qualitative study are rarely as structured as the interviews conducted in a quantitative study. Instead, they are either open-ended or semi structured, in the latter case revolving around a few central questions. Unstructured interviews are, of course, more flexible and more likely to yield information that the researcher hadn't planned to ask for; their primary disadvantage is that the researcher gets different information from different people and may not be able to make comparisons among the interviewees.*

In this study, semi-structured interviews were used. Borg and Gall (1989:451) advise researchers, especially novice researchers, to develop a guide to be used during the interview: This guide makes it possible to obtain the data required to meet the specific objectives of the study. According to White (2005:143), an interview instrument “provides access to what is inside a person’s head, makes it possible to measure what a person knows (knowledge or information), what a person likes or dislikes (values and preferences) and what a person thinks (attitudes and beliefs)”. In this qualitative study about safety and health issues at Sefula Secondary School, the researcher and participants therefore were considered to have been key instruments.

#### **4.6.1.1 Semi-structured Interviews**

A semi-structured interview guide was utilized to collect data from teachers and pupils in this study. Recording of data was done by audio recording and note taking was used as backup. The interview guide consisted of a list of open ended questions related to the issues under study. In this study, the semi-structured type of interviews allowed the researcher to pose some open-ended questions and the interviewee to express his or her own opinion freely. This required both the interviewer and the interviewee to be at ease because it was like a discussion or brainstorming on the given topic. The direction of the interview was determined by both the interviewee and interviewer. In the process of conducting interviews, the following advantages of semi-structured interviews were observed:

- the researcher was able to probe for more specific answers and could repeat a question when the response indicated that the interviewer misunderstood the question,
- participants , who could not read and write, could still answer questions
- the interviewer was able to observe non-verbal behaviour and to assess the validity of the interviewee's answers
- the interviewer made sure that the interview was conducted in privacy, that there is no noise,
- the interviewer made sure that all questions were attempted.

Despite the foregoing advantages observed in this study, it was difficult to standardise the interview across different interviewees. This meant that each interview took its own format to suit the individual characteristics of the interviewees. However, it was easy to generate rich data, information and ideas because the level of questioning varied to suit the context and that the interviewer could quiz the interviewee more deeply on specific issues as they arose. This was, however, a time consuming process. Although open ended questions took long time to analyse compared with closed questions (Stewart & Shamdasani, 1990; Bryman, 2001; Sarantakos, 2005), they were the most appropriate to use because they allowed the participants in this study to express themselves freely without restrictions (Kumar, 1996; Bryman, 2001). This view is also supported by Litosseliti (2003: 63) who argues that open-ended questions “allow people to consider freedom to choose what to say,



how much and how to say it”. Therefore, interviews with school staff were conducted to provide insight into observed school safety and health phenomena.

In the context of this study, the researcher also considered the following suggestions for conducting productive interviews as suggested by Leedy & Ormrod (2005:147):

- making sure the interviewees were representative of the group involved in distance teacher education,
- locating a quiet place for the interview,
- obtaining written permission to conduct the interview,
- establishing and maintaining rapport with the interviewees,
- focusing on the actual situations rather than on the abstract,
- avoiding putting words in people’s mouths,
- recording responses verbatim,
- avoiding reacting to interviewees’ responses,
- remembering that the aim was not to get facts but information, and
- taking into account group dynamics.

By following the guidelines stated above, the researcher gathered the required information regarding the status of safety and health at Sefula Secondary School.

#### **4.6.1.2 Focus Group Discussion**

The other method of data collection used was focus group discussion. Focus group is a form of qualitative research where a group of people are asked about their perceptions, opinion, beliefs and attitudes towards a product, service, concept, idea and so on. Questions are asked in an interactive group setting where participants are free to talk with other group members (Greenbaum, 2000). In the context of this study, focus group discussions clarified and shade more light on issues raised and not clarified in the interviews. Focus group discussion was particularly utilized because it is economical on time, focuses on particular issues, yields insights that would not otherwise be available in a straightforward interview, produces large amounts of data in a short period of time and useful to triangulate with more traditional forms of interviewing and observation.

In a focus group discussion, ten (10) participants were drawn as follows: School administrator (1), parents (2), teachers (2), pupils (3), Environmental Health Technologist (1) and auxiliary staff (1). Qualitative data arose from focus group discussion involving

ten (10) participants. Before the discussion, discussants were encouraged to express themselves freely, especially pupils who could feel uneasy in presence of teachers and other 'old and experienced' participants. The names of participants were made available to the researcher but were not used when reporting results. Instead, reference numbers were used to keep the anonymity of participants for ethical reasons. The group of participants in the focus group discussion was gender sensitive with five (5) females and five (5) males. The discussion lasted for about two (2) hours. The group discussion was moderated by the researcher who maintained the group's focus. The researcher got a great deal of information on safety and health concerns at Sefula secondary school and solutions to identified concerns.

In agreement with the above views, Sillitoe *et al.*, (2005:177) holds that focus group is a tool of studying ideas in a group context and is based on the belief that the whole is greater than the sum of its parts. It was used to generate new information, clarify further points of detail and validate information derived through other methods and build consensus between group members. Participants in the focus-group session were made to feel free. This atmosphere allowed the flow of ideas on safety and health issues at Sefula Secondary School. The researcher, as moderator, followed a pre-planned script of focus group interview guide with specific issues relating to Sefula Secondary School safety and health issues (See Appendix B).

The researcher ensured that all group members contributed to the discussion and avoided letting one participant's opinions dominate. Moreover, the researcher as moderator avoided putting words into the mouths of group members. A recorder was used which later helped with transcribing the results. Taking notes served as further backup. After the session, data analysis was simple because the secretary was also taking some notes of the proceedings which were later compared with the transcribed data.

In the process of discussion, the moderator faced the following challenges:

- designing persuasion and predicting behaviour,
- developing strategies and new ideas,
- sorting out what was important,
- decoding symbolism,
- unravelling complex situations that arose in the discussion.

The above challenges were overcome by recording the discussion using a recorder as backup to what could have been missed. Later, the discussion was listened to and transcribed. When using focus group discussion in this study, the following advantages were encountered:

- helped to obtain detailed information about personal and group feelings, perceptions and opinions regarding safety and health issues at Sefula Secondary School,
- focus group discussion saved time and money compared to individual interviews,
- provided a broader range of information,
- offered the opportunity to seek clarification,
- participants were free to agree or disagree,
- participants could decide to gather at a place of their choice making the discussion take a normal setting, conducive for a free and open discussion, and
- the group dynamics led to a focus on the most important topics and issues.

The researcher found out that sometimes participants did not agree on a single point. Therefore, limitations were encountered during focus group discussion. The following were limitations encountered when conducting the discussion:

- keeping the discussion on track and not astray was a challenge on the part of an interviewee as a moderator because of the contentious nature of safety and health issues
- there was also a possibility of some participants not participating and allow themselves to be inhibited by the dominators, especially pupils who felt young and less experienced
- some participants found a focus group situation intimidating or off-putting; some participants may have felt under pressure to agree with the dominant views of other members

#### **4.6.1.3 Document Review**

The other data collection technique was document review. Document analysis is a form of qualitative research in which documents are interpreted by the researcher to give voice and meaning around an assessment topic (Bowen, 2009). Document review is a social research

method which is used as a tool for obtaining relevant documentary evidence to support and validate facts stated in a research. The exercise involves analytic reading and review of lots of written material. This is valuable to help the researcher to extract relevant portions that can be deemed as statements of facts to validate individual research objectives.

Documents broadly include any papers, especially official ones, which provide more or less direct evidence of decisions, transactions, status, thoughts, debates or actions, which are directly or indirectly related to the purpose of a research inquiry. Documents may be contemporary or historical in nature and include both text and visual data. In qualitative research, documents which could be considered include annual reports, minutes of meetings, personal diaries, memoranda, records, letters, files, institutional prospectuses, videos, photographs, diagrams, or catalogues.

Documents in this study were a useful source of data. However, they had their own limitations. One problem with them was that the researcher could not know how they came into being in the first place or who wrote them. It was also difficult to analyse content properly because of different writing styles. However, the researcher looked for specific content that related to safety and health issues at Sefula secondary school. Another problem is pointed out by Andrew (1985: 156) who makes an important point with regard to ‘complete’ records:

*Documents have differential survival rates and those which survive do not always provide all the information required...The answers to a great many questions are simply not available, since the necessary records either never existed or failed to survive.*

With reference to the foregoing, some documents used at Sefula Secondary School and District Education Board Secretary’s office were reviewed. The documents reviewed included disciplinary committee minute book and monitoring tools for Education Standards Officers. The researcher also read through school rules and regulations. This provided insight into the safety and security reports, plans and measures in school.

#### **4.6.1.4 Observation**

Leedy and Ormrod (2005:145) argue that observations in a qualitative study are intentionally unstructured and free flowing. This means that the researcher is free to shift focus from one thing to another as new and potentially significant objects and events

present themselves. The advantage of collecting data through observation is that the researcher gathers data from various sources. However, inexperienced researchers may waste time observing things that are not important, overlooking those that are central to the question. In the context of this study, the researcher was aware of this disadvantage and therefore concentrated on observing things that were directly related to the management of safety and health at Sefula Secondary School.

Whilst gathering data using the observation technique at Sefula Secondary School, the researcher adhered to the following:

- when beginning observations, the researcher was introduced to the people whose activities would to be observed, and also briefly described the study and got participants consent,
- the researcher used various data recording strategies, for instance, field notes and pictures,
- during observation, the researcher remained relatively calm and pocketed all that he knew about the places under observation
- whilst taking field notes, the researcher started preliminary interpretations of data.

Observations were done in order to study the physical safety and health of Sefula secondary school environment. The purpose of observations was to confirm what was obtained from the interviews or documents analysis as well as to discover what any other insights and experiences that might not have emerged through either interviews or documented analysis.

Features of basic school safety and health were identified beforehand so as to ensure that observations and interviews focused on relevant aspects of school environments. On that basis, photographs and field notes of observed phenomena were taken. Photographs were used as a good way of collecting observable data of phenomena which could be captured in a single or series of shots (Hanock, 2002). Field notes were made with regard to observed features and comments from interviews with head teacher and or designated school safety and health personnel (Martella, Nelson, and Marchand-Martella, 1999). Resulting from that, an analysis combining field notes and photographs yielded the following categories of features:

- *Buildings*: Observations were made on cleanliness, maintenance, storage rooms and equipment. Focus was on the status of the buildings and equipment usage and storage, including maintenance.
- *Grounds*: Observations focussed on school grounds and play grounds, security of school perimeters, general layout of vegetation and shrubs, visibility or obscurity of such amenities as toilets, play grounds, parking areas as well as the safety and status of equipment.
- *Safety Systems and Procedures*: Focus was on safety of systems such as sanitation systems, refuse disposal systems and procedures for movement into and out of school premises and general access control.

#### **4.6.2 Primary Sources of Data**

Primary sources of data include artefacts, autobiography, a recording, or any other source of information that was created at the time under study. It serves as an original source of information about the topic. Primary sources of data in this study were unstructured observations, semi structured interviews and focus group discussions. Photographs were also used as a way of collecting observable data of phenomena which could be captured in a single or series of shots (Hanock, 2002). Field notes were made with regard to observed features and comments from interviews with Sefula Secondary School stakeholders (Martella, Nelson, and Marchand-Martella, 1999).

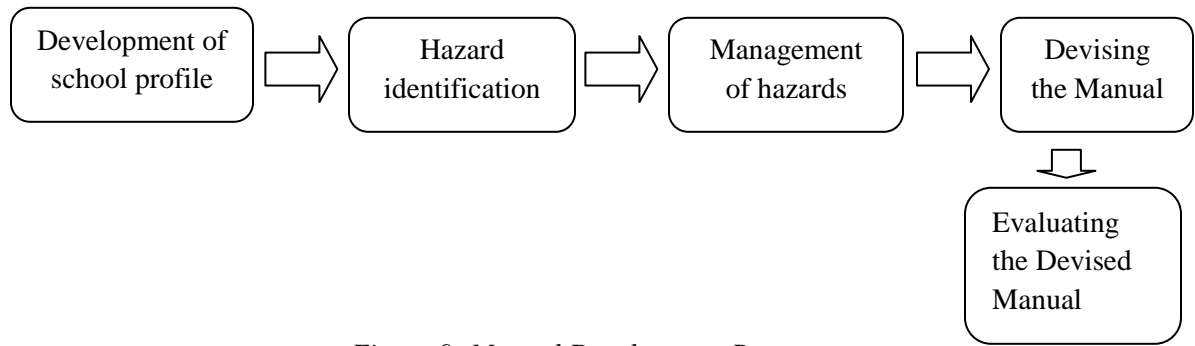
#### **4.6.3 Secondary Sources of Data**

Secondary data refers to data that was collected by someone other than the user. In the context of this study, secondary sources of data included review of documents such as the ESO's monitoring tools and school disciplinary committee minute book. Other sources were literature from University of Zambia (UNZA) Library, the Curriculum Development Centre (CDC), published and unpublished literature. Thesis, dissertations and other books related to safety and health status of schools were consulted or reviewed. Materials from symposiums, international network (internet) and government document policies were also read through. These secondary sources of data provided additional information on what could not be captured by primary sources of data.

#### **4.7 Process of Developing a Manual**

This study developed a localised school safety and health manual for Sefula secondary school. The aim of developing the manual was to provide solutions to safety and health issues inherent at the school. The following participants (proximate stakeholders) were involved in developing the manual; pupils, teachers, school administrators, auxiliary staff, parents, Education Standards Officer and the Environmental Health Technologist. These participants were selected using non-probability sampling design as explained in section 4.5.1 and 4.5.2 of this study. The localised school safety and health manual for Sefula secondary school was developed from the safety and health concerns identified by the researcher and participants in this study. The following process was followed when developing the manual:

- Firstly, the school profile was developed which included a description of the school and the community's historical and geographical accounts as presented in sections 2.2 and 2.3 of chapter two of this study.
- Secondly, hazards were identified by the researcher and the participants from the biophysical, social, economic as well the political environment of the school.
- Thirdly, participants and the researcher assessed risks or threats for hazards identified. Participants also suggested solutions to help in management of hazards identified in the school environment.
- Fourthly, a manual was devised arising from hazards identified in the school environment and solutions suggested by participants, of course with the researcher's input. The figure below summarises the manual development process followed in this study.
- Finally, the development draft manual was subjected to critical evaluation by a sampled group of participants. Their ideas are featured in Unit four in section 7.4 of this thesis. Figure 9 shows a summary of manual development process.



*Figure 9: Manual Development Process*

(Source: Field data, 2018)

## **4.8 Data Collection and Analysis**

### **4.8.1 Data Collection**

Unstructured interviews were administered to pupils, teachers, school administrators, auxiliary staff, ESO, EHT and parents. The ESOs' monitoring and evaluation tool for schools and the school disciplinary minute book were reviewed. Focus group discussions were conducted with ten (10) selected pupils, teachers, auxiliary staff, EHT, school administration and parents to get the full insight of the issues that could not be fully exploited by the interviews and observations. An observation guide of safety and health issues was used to carry out observations of the school environment.

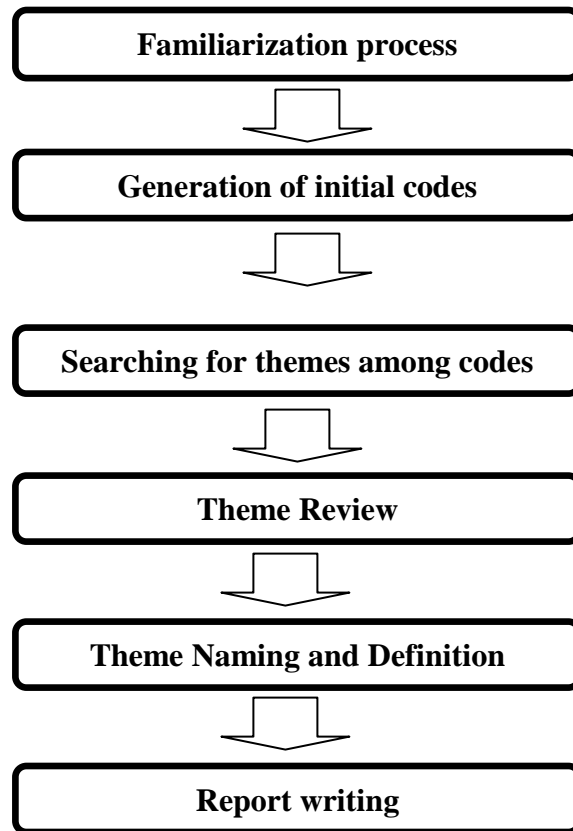
### **4.8.1 Data analysis process**

Bogdan and Biklen (2003) define qualitative data analysis as working with the data, organising them, breaking them into manageable units, coding them, synthesising them, and searching for patterns. The aim of analysis of qualitative data is to discover patterns, concepts, themes and meanings. According to Partington (2003) there is little standardisation with no absolutes where a specific type of qualitative data relates to a specific type of analysis. This is supported by Neuman (2011) who further argues that no single qualitative data analysis approach is widely accepted. This means that there are always variations in the number and description of steps for the process of qualitative data analysis. From the foregoing views, it can thus be concluded that qualitative data analysis for each study to some extent is a uniquely designed event. In this respect, the qualitative data analysis of this study was done using thematic analysis where the following procedures were followed:



- *familiarization process*: the researcher familiarised himself with what the data by reading through and through. Special attention was paid to patterns that were emerging. Initial ideas or patterns were also noted at this stage.
- *generation of initial codes*: at this stage, initial codes were generated by identifying where and how patterns occurred. This happened through data reduction where the researcher collapsed data into labels in order to create categories for more efficient analysis. At this stage, the researcher also gave meaning to the initiated codes.
- *searching for themes among codes*: Codes were arranged into themes that depicted the data. The researcher gave meaning to the themes through description.
- *theme review*: The researcher made sense out of the themes and accounted for all the coded extracts and the entire data set. In areas where the analysis seemed incomplete, the researcher went back to the data to find the missing information.
- *theme naming and definition of categories*: Clear definitions and names were given to each theme. There was also description of which aspects of data were being captured in each theme. There was a comprehensive analysis of what the themes contribute to understanding the data.
- *report writing*: The report was written based on themes that emerged. This involved description of the findings.

Data analysis process followed in this study is summarised in Figure 10.



*Figure 10: Data analysis process*

(Source: Field data, 2018)

It should be noted that data analysis in this study was also treated as an ongoing process, intertwining data collection, processing, analysis and reporting. This is in correlation with Nieuwenhuis (2007:99-100) who explains the essence of data analysis in qualitative research well, through the following definition:

*“..qualitative data analysis tends to be an ongoing and iterative process, implying that data collection, processing, analysis and reporting are intertwined, and not necessarily a successive process”.*

In relation to the foregoing definition, the constant comparative method was used in analysing data by repeatedly comparing data patterns from interviews, observations and field notes to develop insights and understanding from patterns in data (Vockel and Asher, 1995). This process included data organisation and categorisation, which was expected to yield an analysis of school buildings, grounds, safety, health and security activities and procedures as categories of basic school safety features. Data emanating from constant

comparisons among photo graphs, field notes and responses from interviews was apportioned into these categories to identify relationships between the categories in order to interpret and draw conclusions on the status of safety, health and security status of the school.

The qualitative analysis process for this research was concluded by the description of thematic relationships and patterns of relevance to the research.

#### **4.9 Trustworthiness of the study**

Assessing the accuracy of qualitative findings is not an easy task. Nevertheless, there are several strategies used to enhance the trustworthiness of qualitative research findings. As suggested by Creswell (1998) the following four ways of evaluating trustworthiness of qualitative research were used in this study: credibility, transferability, dependability and conformability:

**(a) *Credibility:*** Credibility in qualitative research refers to the extent to which data and data analysis are believable and trusted. Qualitative research is trusted or valid to the researcher and not to others due to variations in reality. In the context of this study, credibility was enhanced by member checking into the findings. This meant that there was feedback on data, interpretations and conclusions from the participants. The participants read through the manual generated by this study and gave their own comments as seen in appendix A. Member checking as a way of proving credibility of qualitative research is also supported by Lincoln and Guba (1985). These scholars consider member checking into the findings as the most critical technique for establishing credibility in qualitative studies.

**(b) *Transferability:*** Transferability in qualitative research is synonymous with generalizability, or external validity, in quantitative research. Transferability is established by providing readers with evidence that the research study's findings could be applicable to other contexts, situations, times, and populations. To enhance transferability, 'thick narrative description' of social contexts of participants and the study area were provided in this study. The study provided explicit connections to the cultural and social contexts that surrounded data collection. This information could help the reader construct the scene that surrounded the research study, from the daily lives of participants to the way that implicit

biases may affect their responses. This could allow outside researchers and readers to make the transferability judgements themselves. In this study, the manual (product) is not transferable to other school settings. However, the process (methodology) is applicable to other situations and social contexts.

**(c) Dependability:** This is another standard that was used to judge trustworthiness of this study. It refers to the stability or consistency of the inquiry processes used over time. A major technique that was used to assess dependability of this study was triangulation. The researcher used multiple sources of data to confirm emerging finding. Other methods used to attain dependability of this study was member checks, peer examination and dependability auditing; where an independent auditor reviewed the activities of the researcher to see how well the techniques for meeting the credibility standards have been followed.

**(d) Confirmability:** Confirmability is the last criterion of Trustworthiness that was used in this study. This criterion has to do with the level of confidence that the study's findings are based on the participants' narratives and words rather than potential researcher biases. Confirmability is there to verify that the findings are shaped by participants more so than they are shaped by a qualitative researcher. An audit trail was used to prove Confirmability of this study. The researcher detailed the process of data collection, data analysis, and interpretation of the data.

#### **4.10 Ethical Considerations**

This being a qualitative study, the researcher had to interact deeply with the participants, thus entering their personal domains of values, weaknesses, and individual learning disabilities to collect data. Silverman (2000) reminds researchers that they should always remember that while they are doing their research, they are in actual fact entering the private spaces of their participants. Understandably, this raises several ethical issues that should be addressed during, and after the research has been conducted. Creswell (2003), states that the researcher has an obligation to respect the rights, needs, values and desires of the participants.

Silverman (2000) argues that the relationship between the researcher and the participants during an interview needs to be considered in terms of the values of the researcher and

cultural aspects. Therefore, appropriate steps were taken to adhere to strict ethical guidelines in order to uphold participants' privacy, confidentiality, dignity, rights and anonymity in the study. In view of the foregoing, the following section describes how ethical issues in the conduct of the research were addressed:

- *Informed consent:* The Researcher informed the participants of the purpose, nature, data collection methods and extent of the research prior to commencement. Further, the researcher explained to them their typical roles.
- *Harm and risk:* In this study the researcher guaranteed that no participant would be put in a situation where they could be harmed as a result of their participation, physically or psychologically.
- *Honesty and trust:* Adhering strictly to all the ethical guidelines served as standards about the honesty and trustworthiness of the data collected and the accompanying data analysis.
- *Privacy, confidentiality and anonymity:* As the study included a focus group discussion, total anonymity was realised. The researcher ensured that the confidentiality and anonymity of the participants was maintained through the removal of any identifying characteristics before widespread dissemination of information. The researcher made it clear that participants' names were not used for any other purposes, nor would information be shared that revealed their identity in any way.
- *Voluntary participation:* Despite all the above mentioned precautions, it was made clear to the participants that the research was only for academic purposes and their participation in it would be absolutely voluntary. No one would be forced to participate.

In a nutshell, considering the importance of being ethical, the following were adhered to in this study:

- the researcher got clearance from the University of Zambia where the introductory letter which explained the purpose of the study was granted before the field visit.
- the researcher requested for research permits from recognised authorities from the Ministry of Education before collecting data in the school

- whilst in school, the researcher got permission from the head teacher before conducting the study.
- the participants ' consent were considered paramount and were informed of the purpose of the study before data collection process
- neither photographing nor tape recording was done without participants ' consent.
- participants' names were kept anonymous to ensure confidentiality in report writing.
- the participants were informed of their freedom to withdraw from the study once they felt so.

#### **4.11 Summary**

This chapter illuminated a number of procedures, which the researcher followed in conducting the study. An explanation was given concerning the participants in the research, methods of data collection and how data was collected and analysed. The data collection methods consisted of unstructured interviews, observations and document analysis. The chapter clarified that qualitative analysis was not quantifying qualitative data but rather a nonmathematical process of interpretation, carried out for the purpose of discovering concepts and relationships in the raw data and then organising them into a theoretical explanatory scheme. The researcher also explained issues of ethical considerations to verify that the study was conducted with due ethical considerations

## **CHAPTER FIVE: PRESENTATION OF RESEARCH FINDINGS**

### **5.1. Overview**

This Chapter presents research findings of the study. The aim of this chapter is to report on the findings pertaining to safety and health issues at Sefula secondary school as given by key stakeholders of that school. The views of the interviewees and information obtained from the observations and other relevant documents constitute the focal point of this chapter. Thematic approach is used when presenting findings because of the qualitative nature of the study. The chapter is arranged to address all research objectives raised in the study which are:

- (i) to assess the state of safety and health at Sefula Secondary School herein used as a case study
- (ii) to establish ideas and practices of safety and health held by sampled participants of Sefula Secondary School
- (iii) to develop a localised school safety and health manual for Sefula Secondary School based on items (i) and (ii) above

### **5.2 Biographical Information**

Biographical data is information about an individual's demographic, experiential or attitudinal backgrounds. It can be used to determine the subject's personality type and to predict the participants' professional performance. In the context of this study, biographical information included gender of participants, age of pupils, number of years pupils spent in school, number of years teachers spent in service and also number of years teachers spent at Sefula Secondary School. This biographical information was necessary because it was used to predict individual participants' school safety and health experiences in relation to Sefula Secondary School. This was necessary in the development of the localised school safety and health manual.

#### **5.2.1 Gender of Participants**

Gender of participants was accounted for in this research. This is because risk perception differs between male and female participants. In the context of this research, it was ideal to account for gender because male participants are more likely to take risks than female participants in the social setting of Sefula Secondary School. For example, male pupils are more likely to be walking around the school even in dark hours than their female

counterparts. This is supported by Byrnes, Miller and Schafer (1999) who reviewed over 150 papers on gender differences in risk perception. The study concluded that “male participants are more likely to take risks than female participants”. Therefore, in order for this study to have a balanced view of school safety and health issues, there was need to consider gender as a factor influencing risk perception. The gender of participants in this study is presented on Table 5.

*Table 5: Gender of participants*

Stakeholders	Number	Gender	
		Male	Female
Pupils	10	5	5
Teachers	7	4	3
Parents	4	2	2
Administrators	3	1	2
Auxiliary staff	3	1	2
Education Standards Officer	1	1	-
Environmental Health Technologist	1	1	-
Total	30	16	14

(Source: Field data, 2018)

As can be noted on Table 5, there were 16 male participants and 14 female participants. This represents an almost equal number of male and female participants for this study. This was meant to get balanced views that would be used in developing safety and health standards manual for Sefula Secondary School, bearing in mind that gender influences risk perception (Byrnes, et al, 1999).

### **5.2.2 Age of Pupils**

Age of participants also is a factor in risk perception. Different age groups perceive risks differently. In the context of this study, it was important to consider the age of pupils because their age differences could be a factor influencing risk behaviour. Younger pupils are more likely to engage in more risky behaviour in the school environment than their older counterparts. This is supported by Elkind (1974) who argues that adolescent risk behaviour is often attributed to exaggerated feelings of invulnerability. This proposition assumes that feelings of invulnerability are greater among teenagers than adults. This view of adolescence is at least as old as Aristotle, who portrayed teenagers as "indignant at the mere idea of enduring an injury"(cited in Katchadourian, 1977). Against this background, it



was important to account for the age of pupils in this study because they had different perceptions of safety and health status of Sefula Secondary School. Pupils' age distribution is tabulated as shown on Table 6.

*Table 6: Age of Pupils*

<b>Age of pupils</b>	<b>Frequency</b>
14 years	2
15 years	2
16 years	2
17 years	2
18 years	2
Total	10

(Source: Field data, 2018)

As presented on Table 6, this study sampled an equal number of age ranges among pupils. This was meant to have balanced views regarding pupils' safety and health perception at Sefula Secondary School.

### **5.2.3 Number of Years Pupils Spent In School**

The number of years pupils spent in school was also accounted for. This was with the thinking that pupils who spent many years in school were more likely to identify more safety and health challenges that the school has been facing than the new pupils. The number of years spent in school would also influence safety and health perception pupils had about Sefula Secondary School. This information was necessary in the development of a localised safety and health manual for Sefula Secondary School. Table 7 presents number of years pupils spent at Sefula Secondary.

*Table 7: Number of Years Pupils Spent At Sefula Secondary School*

<b>Number of years spent in school</b>	<b>Number of pupils</b>
2-3 years	2
3-4 years	3
4-5 years	5
Total	10

(Source: Field data, 2018)

As presented by Table 7, 4 pupils spent 4-5 years, 3 pupils spent 3-4 years and 2 pupils spent 2-3 years at Sefula Secondary School. In the context of this study, it was important to

sample a big number of pupils who spent more time in school. This was the thinking that they interacted more with the Sefula secondary school environment than their new counterparts.

#### **5.2.4 Teacher's Years spent at Sefula secondary school**

The number of years teachers were in service at Sefula was considered in this study. This is because time and experience influence risk perception and behaviour. This enabled this study to predict certain safety and health perceptions among teachers in relation to experience. Teachers who stayed longer in school were more likely to be aware of safety and health history of the school than their new colleagues. Table 8 present's number of years the sampled teachers had spent at Sefula Secondary School.

*Table 8: Teachers' Years spent at Sefula Secondary school*

<b>Number of teachers</b>	<b>Years spent at Sefula secondary school</b>
2	3-5 years
2	5-7 years
3	More than 7 years
Total	7

(Source: Field data, 2018)

As presented on Table 8, 2 teachers spent between 3-5 years at Sefula Secondary School. 2 sampled teachers spent 5-7 years at Sefula Secondary School while 3 teachers sampled spent more than 7 years at that school. This scenario shows that the sampled teachers had at least spent more than three years in the environment of Sefula Secondary School. This meant that they were experienced enough to account for safety and health practices of the school. However, more teachers (3) were sampled in this study because they were thought to have had more experience with the safety and health issues in that school than their counterparts.

The research methods used were focus groups and individual interviews, observations and analysis of relevant documents. The findings of this research were presented according to the research objectives as indicated in 5.1 above.

### ***5.3 State of Safety and Health at Sefula secondary school***

Objective one of this study was “*to assess the state of safety and health at Sefula Secondary School herein used as a case study*”. The assessment of safety and health status of Sefula Secondary School was done with the help of sampled participants. The sampled participants were asked questions to assess the state of safety and health of Sefula secondary school as indicated by the following interview questions and answers:

#### **5.3.1 Meaning of school of safety**

*Question 1: In your view, what do you understand by a Safe School?*

The understanding, concept or definition of a safe school held by a person is critical in influencing practice. In this regard, this study explored the various meanings personally held by sampled participants of Sefula Secondary School about a safe school. The different meanings of a safe school held by participants are presented as follows:

Though put in different words, the most common definition given by participants about a safe school was that a safe school provides a critical and necessary environment in which effective teaching and learning can take place without pupils, teachers and visitors being afraid of accidents and injuries. Participant seven (teacher) explained the meaning of a safe school particularly as follows:

*For me, a safe Sefula Secondary School environment should provide freedom from danger, threat of harm, injury to pupils, staff and visitors. A safe Sefula secondary school should not have accidents to people or cause damage to property. Pupils, staff and visitors should be able to interact freely in a safe school.*

Participant six (teacher) explained as follows:

*A safe school should support learning by creating and promoting a physically, emotionally, socially and academically secure climate for pupils, staff and visitors.*

Participant four (parent) attempted the meaning of a safe school in a different way.

*For me, a safe school should not put pupils and teachers fear in ...when pupils can learn without having to worry about anything. A safe Sefula secondary school should create a learning environment which has a positive impact on behaviour and academic achievement.*

Participant three (pupil) had another idea of a safe school. She explained idea of a safe school from her perception and put it as follows:

*If Sefula secondary school has to be safe, then, our response to intruders has to change. Pupils and staff should be ready to defend themselves. Safety in school should not only be seen as armed protection. Safety is preventing danger from within the school.*

Participant one (pupil) explained the meaning of a safe school as follows:

*According to me, school safety means being able to walk around school environment without fearing anything. It means absence of danger to pupils, staff and visitors when walking or driving at night around the school, safe from violence, external attacks, bullying from fellow pupils, teachers and the local community.*

As presented above, participants held different meanings to a ‘safe school’. The difference in meanings attached to school safety meant that there were also differences in individual risk perception and behaviour. This could be as a result of different age groups, different experiences and gender related factors in risk perception. However, one common thing is coming out. They all thought that a safe school makes pupils, staff and visitors free, not afraid of any danger arising from the school environment.

### **5.3.2 Meaning of a Healthy school**

*Question 2: In your view, what do you understand by a healthy school?*

The definition, concept or meaning attached to ‘a healthy school’ held by participants at Sefula secondary school was critical in influencing practice. In this regard, this study explored the various meanings personally held by participants about a healthy school.

Most participants seemed to agree on the idea of a healthy school. They noted that a healthy school should be clean, tidy and manage waste properly. Most participants agreed that a healthy school has fewer cases of disease outbreak and referral cases. However, individual definitions of a healthy school were as follows:

Participant eleven (EHT) explained the meaning of a healthy school as follows:

*I believe that a healthy school manages waste properly and is clean; it engages school stakeholders in efforts to make the school a clean and tidy place. A healthy school understands the importance of investing in health to help pupils and staffs do their best, raise levels of achievement, improve standards and develop policies and practices for health promotion.*

Participant fourteen (ESO) explained the meaning of a healthy school as follows:

*For me, a healthy school provides a clean environment with healthy foods, clean water and good sanitary conditions. In a healthy school, teachers provide Physical Education to pupils, has sports programmes and recreation activities. A healthy school should have clean air. It should have programmes for guidance and counselling for pupils and staff.*

Participant sixteen (parent) explained his understanding of a healthy school and said:

*A healthy school prevents injuries and disease, prevents smoking and drug abuse, alcohol and violence among pupils. A healthy school influences health-related behaviours and also provides social support and promotes mental health.*

Participant twenty-two (parent) explained the meaning of a healthy school as follows:

*For me, a healthy school strives to improve the health of pupils, teachers and community members. This is because if the local community is unhealthy, even the school may be affected. A healthy school creates conditions that are conducive to health through policies and services.*

As noted from the presentation above, participants explained the meaning of a healthy school differently. Despite the differences in definition, a few things were common in the definition of a healthy school. Though they used different words, they seemed to agree that a healthy school environment is one in which the school setting supports health and well-being of pupil, staff and the community and helps build a strong foundation for teaching and learning. In this healthy school, good nutrition, physical activity, clean air and water, access to care and education about making healthy choices allow pupils and staff to achieve their potentials.

In the context of this study, the meanings attached to a 'healthy school' was vital in defining variables related to school health in general and Sefula Secondary School health in particular. It was also important in accounting for health in the context of Sefula Secondary School as the researcher developed a localised safety and health manual.

### **5.3.3 Benefits of a Safe and healthy Sefula secondary school**

*Question 3: Explain the benefits of a Safe and Healthy Sefula secondary School environment*

In an effort to evaluate the state of safety and health of Sefula Secondary School as stated by objective one of this study, participants were asked on the importance of a safe and healthy school environment. This was because the importance attached to something would also influence practice among stakeholders. Responses on benefits of a safe and healthy school environment as noted by participants are presented below:

Participant two (administrator) explained the benefits of a safe and healthy school environment as follows:

*Safety in our school is important and necessary to support the academic success of pupils, giving them the opportunity to learn and achieve in a safe and nurturing environment. There are also fewer cases of accidents and disease. A healthy school ensures good pupil and staff attendance to teaching and learning.*

Participant twenty-six (auxiliary staff) explained as follows:

*Any accident arising from poor safety and health management in this school will inevitably damage school reputation and corporate image. Parents and guardians cannot bring their children to a school that is not safe and health.*

Participant six (auxiliary staff) explained the benefits of a safe and health Sefula environment as follows:

*An effective safety and health management in this school can enable pupils to foster a correct perception of safety and health. This in turn benefits the families and community where they come from.*

Participant twenty-nine (pupil) explained as follows:

*Teachers, pupils and other staff are confident to carry out their duties under a well-planned safety and healthy school environment. Cost incurred as a result of any accident, incident or ill health in school are minimised.*

From the foregoing, it is clear that school safety and health is important if Sefula Secondary School is to thrive on the intended educational objectives. In the context of this study, it was important that stakeholders were alerted to the importance of safety and health in Sefula Secondary School environment. This was important because it helped define direction taken in developing a localised school safety and health manual.

#### **5.3.4 Dangers of an insecure and unhealthy Sefula secondary school Environment**

*Question 4: Explain the dangers of an insecure and unhealthy Sefula secondary school Environment*

After looking at the importance of a safe and healthy school environment, it was important to ask participants about dangers of an insecure and unhealthy Sefula secondary school environment. Knowledge of dangers of an insecure and unhealthy school environment by participants would influence their safety culture in school. Responses on dangers of an insecure and unhealthy school environment as noted by participants are presented below:

Participant thirteen (administrator) explained dangers of an insecure and unhealthy school as follows:

*An insecure school has high costs as a result of accidents or ill health in school. Money and time is lost on investigating accidents and healing. Members of staff, pupils and visitors lose confidence in carrying out their duties.*

Participant one (pupil) explained the dangers of an insecure and unhealthy Sefula secondary school as follows:

*For me, an insecure and unhealthy school will have poor pupil and staff attendance to teaching and learning. An insecure and unhealthy school environment brings poor school reputation and corporate image as a result of accidents arising from poor safety and health management. Many accidents occur.*

Another stakeholder (Participant 18: parent) explained as follows:

*For me, an insecure school will experience high chances of disease prevalence, reduced pupil morale, low enrolment, poor pupil and staff retention and completion.*

Participant nine (ESO) explained the danger of an insecure and unhealthy school as follows:

*An insecure and unhealthy Sefula secondary school will have reduced staff morale and retention, loss of life, more cases of injuries and more damage to school property, increased disciplinary referrals and cases.*

As presented above, participants at Sefula Secondary School are aware of the dangers of an insecure and unhealthy school. In the context of this study, information on dangers of an insecure and unhealthy school helped in providing direction in reflective sessions meant to develop a localised safety and health manual for Sefula Secondary School.



### **5.3.5 Safety and Health hazards at Sefula secondary school**

*Question 5: What are the safety and health hazards at Sefula Secondary School?*

Objective one of this study was “*to assess the state of safety and health at Sefula Secondary School herein used as a case study*”. In order to assess safety and health status of the school, identification of safety and health hazards in the school environment was very paramount. To identify safety and health hazards at Sefula Secondary School, the researcher went around the school to take note of hazards observable. A checklist and a note book were used to record hazards notable in Sefula secondary school environment. Participants were also involved in hazard identification process through interviews because they knew the school environment even better. This knowledge of safety and health hazards inherent in Sefula secondary school would assist in planning for hazards control measures. The safety and health hazards inherent in school as identified by the researcher and participants were initially categorized in six classes as presented below:

- (a) Biological hazards
- (b) Chemical hazards
- (c) Ergonomical hazards
- (d) Mechanical hazards
- (e) Physical hazards
- (f) Psychosocial hazards

However, in order to align this work to the field of Environmental Education, the above classification was later re-grouped to suit a broad definition of ‘Environment’ as consisting of the natural (Bio-physical), economic as well as the social and political dimensions. This re-classification is used especially for the proposed localised manual for Sefula secondary school in Appendix A.

#### **(a) Biological Hazards**

Biological hazards refer to organic substances that pose a threat to the health of people and other living organisms. Knowledge of biological hazards in Sefula secondary school environment would assist in coming up with specific intervention measures for safety and health management in school. Sefula Secondary School environment was found to have potential sources of biological hazards. The on-spot check and observation of Sefula

secondary school reviewed potential sources for biological hazards as enlisted in the Table 9.

*Table 9: Sources of Biological hazards at Sefula secondary school*

Mosquito bites	Bacteria from toilets and decomposed waste
Parasitic worms from Sefula stream	Poultry droppings
Bird droppings from trees	Animal droppings/cow dung
HIV/AIDS	Undercooked and poorly processed foods

(Source: Field data, 2018)

As shown in Picture 1, the school also keeps cattle which were a source of biological hazards to the people in and around the school.



*Picture 1: Cattle kept at Sefula Secondary school*

(Source: Field data, 2018)

### **(b) Chemical Hazards**

Hazardous chemicals in the school are substances, mixtures and materials that can be classified according to their health and physicochemical risks and dangers. In the context of this study, knowledge of sources of chemical hazards would help in chemical hazards management in the environment of Sefula Secondary School environment. The sources of

chemical hazards noted in Sefula Secondary School environment through observations and interviews are listed on Table 10.

*Table 10: Sources of Chemical hazards at Sefula secondary school*

Chemicals from science laboratories	Poisonous plants around the school
Food and water contamination	Pesticides/agrochemicals from school garden
Fumes from cars and other automobiles	Paints and Indoor air pollutants
Smoke from incinerated waste	Dust from sand soils

(Source: Field data, 2018)

### **(c) Ergonomical Hazards**

An ergonomic hazard refers to any physical factor within the school environment that harms the musculoskeletal system of people. According to observations and interviews conducted, Sefula secondary school was found to have a variety of sources of ergonomical hazards. Spotting ergonomical hazards would help in proper safety and health management in the school, especially that these hazards are not very easily noticed but felt by individuals. This is because ergonomic hazards bring discomfort to the musculoskeletal system of people in school environment. The potential sources of ergonomical hazards noted at Sefula secondary school are presented on Table 11.

*Table 11: Sources of Ergonomic hazards at Sefula secondary school*

Improperly adjusted work stations	Manual handling
Un adjustable furniture	Poor working tools
Pupils carrying heavy bags for a long time	Poor working posture

(Source: Field data, 2018)

As can be noted on the listed of sources of ergonomical hazards on table 11, most of the furniture used at Sefula Secondary School was not adjustable. For example, chairs, desks and tables could not be adjusted to suit the users' height or body size. This brought complaints among stakeholders because it forced the users to adjust to the work station. This unadjustable furniture could lead to back pains and injuries among other hazards. This was noted by one of the stakeholders (participant five: administrator) and explained as follows:

*Furniture in this school is not comfortable enough for teachers and pupils. Pupils sit on small desks and uncomfortable chairs for long hours. This can make them develop back pain and tire easily.*

#### **(d) Mechanical Hazards**

Mechanical hazards refer to moving machinery that can cause injury or death. Mechanical hazards are experienced from handling tools and machines within the school environment. The school has machines and tools in wood workshop, metal work shop and other offices. All these can pose threats to people within Sefula secondary school environment. Spotting these hazards would help thorough management of safety and health hazards in school. The noted mechanical hazards at Sefula secondary school are presented on Table 12.

*Table 12: Sources of Mechanical hazards at Sefula secondary school*

Flywheels	Chains
Pulleys	Gears
Belts	Defective tools

(Source: Field data, 2018)

#### **(e) Physical Hazards**

A physical hazard is defined as a factor within the environment that can harm the body. According to observations made by the researcher and participants, Sefula secondary school had varied sources of physical hazards. Identifying physical hazards provided this study with information that could be used in school safety and health planning. The physical hazards noted in school environment were as listed on Table 13.

*Table 13: Sources of Physical hazards at Sefula secondary school*

Un even floor surfaces	Electronic waste
Noise from cars and other automobiles	Extreme temperatures
Poor ventilation	Hot surfaces in kitchen
Poor lighting	Rough sports and play grounds
Physical infrastructure	Play equipment
Automobiles	Physical objects

(Source: Field data, 2018)

#### **(f) Psychosocial Hazard**

A psychosocial hazard is any hazard that affects the mental well-being or mental health of a person and may have physical effects by overwhelming the individuals' coping mechanisms and impacting on a persons' ability to work in a healthy and safe manner. Psychosocial hazards were also noted in Sefula secondary school environment. Table 14 shows sources of psychosocial hazards identified at Sefula secondary school:

*Table 14: Sources of Psychosocial hazards at Sefula secondary school*

Bullying	Stress
Fatigue	Violence
Burn out	

(Sources: Field Data, 2018)

The listed sources of psychosocial hazards in Table 14 were qualified by one participant (number seven: administrator) who put it as follows:

*Teachers in this school are so overwhelmed with heavy workloads. The teaching periods are too much. To make matters worse, the same teachers have to perform other school tasks like co curricular activities in the afternoon. This leaves them tired and burn out.*

#### **5.4 Ideas and practices of safety and health at Sefula secondary school**

Objective two of this study was 'to establish ideas and practices of safety and health held by sampled participants of Sefula secondary school. Therefore, this section presents ideas and practices of safety and health held by participants.

##### **5.4.1 Safety and Health Measures put in place at Sefula Secondary School**

*Question 6: What safety and health measures have been put in place at Sefula Secondary School?*

The study found out about safety and health measures that Sefula Secondary School was using. Knowledge of safety and health measures that the school was using helped to identify the gap that needed to be filled with regards to safety and health in school. The local safety and health measures that the school had in place are presented as follows.

### ***(a) Security lighting***

The participants indicated that the school had installed some security lights in some selected areas of the school. This was meant to improve security and safety of these selected areas. The lighting would also improve accessibility of the lit areas and also help watchmen patrol the school premises at night as intended. Participants' explanations were as presented below:

Participant fifteen (auxiliary staff) noted the installation of security lighting in some selected places in the school and put it as follows:

*In trying to improve safety and security, this school has installed security lights in some selected areas. Since the school installed security lights, security and safety has improved. The watchmen can freely move around the school whatever time of the night and take vigilant of the school environment.*

This was supported by participant nine (administrator) who explained as follows:

*The lights have improved visibility and accessibility of certain areas in school even at night times. Lighting has helped to illuminate some hidden places in school and therefore improved the security from intruders.*

Participant five (pupil) also argued that 'Street lighting makes pupils move courageously from classes to dormitories after evening studies'.

### ***(b) Visitors log book***

Participants agreed that the school used a log book to take note of the visitors, especially those that report to the administration. This assisted in knowing who entered in school and for what reasons. Participants acknowledged the use of a log book and put it in different explanations as follows: Participant nineteen (19: administrator) explained as follows: "Official visitors in school are meant to log in and out so that the school could know who entered the school at a particular time". Participant fourteen (teacher) added that:

*Since the school has no wall fence, it is difficult to control entry in and out of the school. However, allowing visitors to sign in and out is what the school devoted to, especially to official visitors.*

### ***(c) School rules***

Almost all participants agreed to the fact that school rules helped maintain safety and security of pupils and staff at Sefula secondary school. The rules guided pupils in what

they should do and what they should avoid in order to keep safe. The rules modify and enforce behaviour of the pupils and staff. This help in avoiding certain circumstances that may be injurious to pupils. Participant twenty-six (parent) simply put it as follows:

*For me, school rules help Sefula Secondary School administration in keeping safe and secure. The school rules guide pupils on what to do and not what do. This has helped this school in shaping pupils' behaviour. School rules are usually attached to new pupils' acceptance letter and further orient the pupils to attain high levels of safety and security.*

Participant twenty five (teacher) noted the following about school rules:

*In order to help pupils be safe and secure in, school rules and regulations were introduced in this school. They are usually explained to pupils. This helps new pupils to settle properly in school.*

Participant five (parent) explained that in order to make school rules be known to everyone, they should be stuck on notice boards. This will be a good remainder and guide to help pupils be safe in school. Other participants unanimously agreed that the school used rules to protect interest of pupils and everyone in the school environment.

#### ***(d) Preventive Maintenance System (PMS)***

Participants noted that the school practiced preventive maintenance in order to keep the environment clean and tidy. Preventive maintenance helps the school repair some of the properties and clean classrooms, sanitation infrastructure, dormitories and other places within the school. This practice is done on daily basis and on particular days of the week. Participant one (pupil) explained the practice of preventive maintenance system in school and put it as follows:

*In order to keep safe and healthy, this school has put in place a routine Preventive Maintenance system. This has helped in keeping the school environment clean, healthy and well maintained in some areas.*

Participant three (pupil) added that:

*In order to keep safe and health, the classrooms and dormitories in this school are cleaned and inspected every Friday and Saturday respectively. This is meant to instill the spirit of cleanliness in pupils and staff. Maintenance works are done to broken windows, furniture and infrastructure when resources are available.*

Other participants were agreeable to the fact that preventive maintenance helped in waste management in school.

**(e) Burglar proofing doors**

In order to keep the offices secured, the school burglar proofed the doors. This helped in controlling entry and also to secure property in offices. Participant twelve (administrator) explained as follows:

*This school maintains safety and security of offices by burglarproofing doors and windows. This has worked well because there are few or no cases of burglary and theft as a result of burglarproofing.*

Other participants agreed unanimously that doors and windows were burglar proofed to keep classes and offices secure.

**(f) Night Watchmen**

The participants acknowledged that the school environment was more vulnerable to security issues at night. This was because most people were asleep and that the school was not fenced to control entry. Therefore, the school had employed night watchmen to watch over the school property. This was mainly in night times. These people patrol the school premises and check out for intruders in school environment. Participant seventeen (auxiliary staff) noted something about night watchmen and put it as follows:

*This school has night watchmen who ensure safety and security of pupils, staff and school buildings during assigned work hours. The watchmen conduct night checks and look for any acts of vandalism. They also check on persons idling on school campus. They check unlocked doors, windows and so on. This has helped this school to be a safe place, especially at night.*

Participant nine (administrator) said:

*Watchmen check all doors in school to be sure they are locked when vacant, locks doors found to be left unlocked, and reports unlocked doors to the teachers on duty via written notes or verbally on or before the next working day.*

Other participants agreed that the school had watch men to secure school property and improve internal safety and security.



***(g) Roll call for pupils***

Participants also agreed that the school conducted roll call to take note of absent pupils. Participant eleven (teacher) put it as follows:

*This school conducts roll call routinely to find out missing pupils. Roll call is also conducted to raise awareness of the importance of regular school attendance among pupils. Roll call is also conducted to identify pupils at risk of leaving school before the official closing date.*

Participant five (pupil) stated that roll call is conducted to promote and to foster positive attitudes to learning. Other participants argued that roll call was conducted to ensure compliance with the requirements of the relevant school rules.

***(h) Waste management***

Different ways of waste management were used in the school to keep the environment tidy and clean. According to participants, litter bins and rubbish pits were mainly used to manage waste in school environment. Participant twenty (parent) said:

*In order to keep the school safe and healthy, the school maintains health practices through proper waste management. The school burns and buries waste to keep the school environment clean...litter bins and rubbish pits are around the school to help manage waste.*

Participant five (pupil) stated that heaps of waste was thrown to keep the aesthetic beauty of the school.

***(i) School uniform for pupils***

Participants acknowledged that the school used of uniform for pupils to help identify them properly. Participant one (1) explained that, “in trying to keep pupils safe and secure, our school uses a uniform to help identify pupils”. Participant twenty three (administrator) explained that:

*For me, school uniform instills order and discipline in this school. When there is disciplined, everything around us automatically falls in its place. The school uniform helps to create strong school ethos and a sense of belongingness.*

***(j) Pupil dormitory guards***

According to stakeholders, the school used pupils dormitory guards look over the security of pupil's property in dormitories during evening studies. Some pupils are left to study in dormitories while others are at classes in the evening.

As presented above, Sefula Secondary School has had some safety and health measures in place. In order to keep safe and secure, the school installed security lighting (illuminating pathways, school grounds), had burglar proofed some doors and windows, and other measures as presented above.

**5.4.2 Safety and Health concerns at Sefula Secondary School**

*Question 7: What are the safety and health concerns at Sefula Secondary School?*

As noted earlier, the school had put in place some safety and health measures that suited the local context. However, participants still had concerns regarding safety, health and welfare of Sefula secondary school and the community. Therefore, this study found out the concerns that participants had in relation to school environment. This information was important because it provided a safety and health gap that the school and the community needed to fill. This would also help improve the schools' health and safety climate in general. The safety and health concerns that participants had in relation to their school environment are presented as follow:

***(a) Poor sanitary conditions***

The school was noted to have poor sanitary conditions. The sanitation infrastructure such as toilets and ablutions were in poor condition. The walls and roofs were in poor condition. Water flow was very erratic (Refer to pictures 2, 3 and 4). One participant expressed his concerns in relation to poor sanitary conditions in school environment and explained as follows:

*This school has poor sanitary conditions. Toilets and ablutions are in deplorable state. Water is also erratic in supply. Because of this state of affairs, some pupils are forced to answer the call of nature in the nearby bush and shrubs (Participant number 11: Teacher).*

Participant thirteen (teacher) also expressed her concerns regarding sanitation situation at Sefula secondary school as follows:

*The toilets at classrooms and dormitories have problems in terms of water supply. Water is very rare. This makes the toilets get blocked and smell. Some pupils are forced to go the Sefula stream to bath and swim. This is because ablutions have no water most times.*



*Picture 2: Broken shower pipes in one of the dormitories*

(Source: Field data, 2018)



*Picture 3: Closed taps in one of the dormitories*

(Source: Field data, 2018)



*Picture 4: Poor sewer system*

(Source: Field data, 2018)

One participant (pupil) also expressed his concerns as follows:

*This school produces good results almost every year. However, the school environment is not very good for the pupils. This school has poor sanitation. This can bring disease outbreaks. The quality of water is also bad. Water also is not in continuous supply*

**(c) Bad Company**

Other participants expressed concerns of Sefula secondary school environment in terms of *saango se si maswe* (bad company) among pupils. The concern was that children could join bad companies that could consequently influence behaviour in a wrong way. She put it as follows:

*“Banana kwa sikolo ba kona ku kena mwa liango ze maswe. Ba kona ku susuezwa kuezwa lika ze maswe ki bana ba sikolo babang’wi, baluti, mane cwalo ni batu ba mwa ma hae. Liango ze maswe litisa kuzuba li kwai, ku tokwa likute, kunwa macwala ni zemu lika ze maswe kwa banana. Mikwa ye maswe ya kona kusinya sikolo sa banana.”* Simply translated:

Children in school can be influenced by bad companies. Children can be influenced to practice bad vices like smoking, unruly behaviour and drinking beer and other bad things as a result of bad company. These bad things could affect pupils' academic attainment (Participant number 20: parent).

***(d) Sefula Stream***

Participants expressed concerns on dangers that could be posed by Sefula stream to pupils, staff, visitors and the local community. They noted that pupils, staff and the local community used water from the stream especially during periods of erratic water supply as noted above. The concern was that water from the stream was dirty, contaminated with a variety of things. Therefore, consuming such water would pose a health threat to people. They were also concerned that children would drown in the stream, especially those with poor swimming orientation. Moreover, participants were also concerned that Sefula stream also contained snails (*minyopi*), snakes and other insects and animals that would prove dangerous to peoples. One participant expressed his concerns about Sefula stream as follows:

*“Mwa linako zeo ku sina mezi mwa sikolo, bana ba sikolo ba itusisa mezi a mwa liabwa. Mezi a mwa liabwa a tezi masila. Hakuli cwalo, banana ba kona kutelwa ki matuku. Hape bana ba sikolo ba kona ku lumiwa ki minyopi ni lino ha haiba nji ba bapalela mwa liabwa. Babamwi banana ba ba sa zibi kutapa silozi ba kona ku mina mikope”*.Translated as follows:

‘In times of poor water supply in school, pupils are forced to use water from the stream. They use stream water which is polluted with many things. This can cause diseases to children. Moreover, the pupils can also be beaten by snakes and other waters sails that can be injurious. Pupils who have poor water orientation could drown’ (Participant number 19: parent).

***(e) Sefula Forest***

Concerns over the Sefula forest also emerged from the participants interviewed. They noted that the forest posed danger to pupils, staff and local community in many ways. They explained that the forest contained snakes, wasps and other animals and insects that could prove dangerous to people in Sefula community, especially children. One participant expressed his concerns over Sefula forest as follows:

*Our school is near a forest. This means that people in school and local community are exposed to dangers from snakes, wasps, scorpions and other insects and animal attacks. This forest can also be a hiding place for criminals and intruders who may attack people in school community*  
(Participant number 22: parent).

***(f) Long distance to school***

The other concern expressed by participants was long distance covered by some pupils from home to school and back. A good number of pupils walked from home to school and back. Others came from as far as the flood plain area and Mutwiwambwa area which was about eight kilometres from Sefula secondary school. Some teachers and auxiliary staff also covered long distances from as far as Mongu town, which is about 17 kilometres from the school. Participants expressed concern about such pupils and staff because there was a chance of being attacked on the way by criminals or be affected by weather conditions. The other concern was that such pupils and staff would reach the school tired and therefore fail to concentrate on their daily duties. One participant expressed her concerns as follows:

*Some pupils stay far away from the school. These pupils walk long distances to school. Therefore, they are vulnerable to attacks from criminals. They also reach school late and tired. This can affect their learning* (Participant number 21: parent).

Participants noted that covering long distance from home to school could also affect pupils' attendance and completion rate. Participants noted that it was possible for some pupils to stop school due to long distances covered from home to school and back. One participant expressed her concern as follows:

*Pupils that walk long distances to school and back home are affected more in terms of education attainment. These pupils' attendance is mostly bad. They are usually absent from school and drop out cases are very common (Participant number 7: pupil).*

**(g) Floods**

Participants bemoaned the effects of flooding on pupil's education. They noted that some pupils come from villages in the flood plain. These pupils had to be crossing streams and other water bodies to reach the school. This practise discouraged many pupils from going to school and led to school drop-outs and absenteeism. One participant explained her concern as follows:

*Children from villages in flood plain areas are affected, especially when water levels are high. They wade in milapo (streams) on their way to school. This exposes them to dangers associated with water. Other children are also too small to wade in deep 'milapo' (small streams) (Participant number 22: parent).*

Participants also expressed concern over the quality of bridges that are used to cross the Sefula stream from nearby villages. They noted that the bridges were usually submerged in water during floods and this affected their quality. They explained that during flood, the bridges on the Sefula stream become slippery and could lead to slips and falls among pupils, teachers and other members of the community who use them. This scenario could discourage some pupils from going to school, thereby increasing absenteeism and dropout rates. One participant expressed his concern as follows:

*During floods, the Sefula stream also swells with water. This means that the small bridges that people use to cross the stream are either submerged in water or shaken by water currency. This means that the bridges become dangerous to use because people can slip or fall on them. Moreover, the submerged bridges prove to be completely unusable. This forces affected people to find alternative routes to school while for some lazy pupils, this scenario is a good excuse for absenteeism (Participant number 4: pupil).*

### ***(h) Religious Conversion***

Other participants had concerns from the religious point of view. They expressed concerns in relation to religious denominational conversion. It must be noted that Sefula secondary school is under the United Church of Zambia (UCZ). Therefore, certain participants were concerned that their children could convert to UCZ because the doctrine of this church was highly pronounced at Sefula secondary school. One participant had this to say:

*I have concerns over the mission schools like Sefula where church doctrine is highly pronounced. Our family is Seventh Day Adventist (SDA). My fear is that my children may end up converting to UCZ by the end of their secondary school education. This because they will be following UCZ related principles at school for about five years.* (Participant number 21: parent).

### ***(i) Extreme Temperature***

Other participants had concerns with regards to extreme temperatures. This is because Sefula area mostly recorded low temperatures in winter and higher temperatures in summer. One participant had this to say:

*Whenever I send my children to Sefula, I usually remember how cold the place is, especially in months of June and July. This forces me to secure warm clothing and blankets for our children* (Participant 19: parent).

### ***(j) Insecure dormitories***

Participants agreed that the pupils' dormitories were insecure as shown by Pictures 5, 6 and 7. One participant had this to say regarding concerns at Sefula secondary school state of dormitories:

*Our dormitories are not well secured in this school. The doors don't close properly and windows are broken. This means that anyone can enter the dormitories any time because the doors and windows are not lockable. Our bunker beds are in poor state, mattresses and lockers are equally in poor condition* (Participant 2: pupil).





*Picture 5: Poorly secured sockets in one of the dormitories*

(Source: Field data, 2018)

Participant number 26 (auxiliary staff) expressed his concern as follows:

*The dormitories, especially for boys are not well secured. This makes our job of patrolling over night even more challenging. The toilets are also lacking water and are blocked. Apart from dormitories, the quality of food given to pupils in boarding is poor.*



*Picture 6: Unlockable doors for one of the dormitories*

(Source: Field data, 2018)



*Picture 7: Broken Dormitory Windows*

(Source: Field data, 2018)

***(k) Poor quality meals***

The participants were also concerned with hunger and poor quality of food in the boarding. They noted that the quality of meals given to pupils in the boarding was very poor and not enough. The meals also lacked variety. According to participants, pupils in boarding were mainly fed on cabbage, beans and kapenta. One participant explained as follows:

*Our meals in boarding are of poor quality. We are mostly eating poorly cooked meals. There is also no variety in our meals. We always eat beans and cabbage. Nshima is poorly cooked too (Participant 3: pupil).*



*Picture 8: Poor furniture in school dining hall*

(Source: Field data, 2018)

Other participants also noted that the kitchen where the meals are prepared from and the dining hall were also untidy and not up to standard. One participant explained her concern as follows:

*The kitchen where the meals for pupils are prepared is untidy. The dining hall is also dirty. The taps in the dining hall are also not working properly. Moreover, pupils feed whilst standing because of no tables and chairs. The doors to the dining hall and windows are not lockable. This means that dust can easily enter the dining (Participant number 4: pupil)*

### ***(I) Mosquito bites***

Participants were concerned about mosquito bites in the school environment. They noted that Sefula area was located in an area that supported mosquito breeding. According to participants, Sefula area was infested with mosquitoes because the school environment was near habitats that favoured mosquito breeding. These included Sefula forest, marshes and tall grasses. The Sefula stream and irrigated rice fields in Sefula area also provide natural habitats for mosquitoes. One participant explained it as follows:

*Our school and the entire community experience mosquito bites, especially in summer. This is because our school is located near the stream, the forest and marshes that prove to be breeding grounds for mosquitoes. During rainy season, there is water stagnation in many places, especially in the flood plain. All these are breeding grounds for mosquitoes (Participant number 12: teacher).*

Other participants also bemoaned the threats that mosquitoes could bring to Sefula secondary school environment. They noted that mosquitoes were a threat to human health by causing malaria. The other participant explained the other threats caused by mosquitoes apart from malaria transmission. She explained as follows:

*Mosquitoes cause other threats apart from malaria. Even bites from mosquitoes that do not transmit disease can result in secondary infections, allergic reactions, pain, irritation and itching. All these can prove to be a disturbance to people in Sefula secondary school community (Participant number 30: EHT).*

#### ***(m) Pupils with Special Educational Needs***

The participants had concerns with the welfare of pupils and teachers with special needs, especially the visually impaired. They noted that pupils and teachers with special needs lacked the facilities to ease their learning and teaching at Sefula secondary school. They noted that even the welfare facilities like toilets, bathrooms and others were not inclusively designed. One participant explained it as follows:

*Our school mainstreams Visually Impaired pupils within the normal lessons. We have a challenge in securing their learning environment. They have no special facilities as much as we intend to better their learning environment. Creating an inclusive learning environment is our concern at the moment (Participant 13: teacher).*

Another participant also expressed her concerns regarding welfare of teachers and pupils with special needs as follows:

*Our school lacks welfare facilities for the visually impaired and other pupils with special needs. They lack computers and other facilities to help them learn and teach properly. This frustrates some disabled pupils and teachers. Some pupils end up dropping from school (Participant number 12: teacher)*

Another participant expressed his concerns about pupils with learning disabilities and explained as follows:

*Pupils with disabilities continue to face negative attitudes and stereotypes in this school. Lack of knowledge about and sensitivity to disability issues on the part of some teachers, auxiliary staff, pupils and the community make it difficult for pupils with disabilities to access educational services equally (Participant number 23: administrator).*

***(n) Lack of perimeter fencing***

The participants also bemoaned lack of perimeter fencing for the school. They noted that a fence around the school could help control entry in and out of the school premises. This could help take note of intruders because security would be well enhanced at entry points within the school. One participant expressed her concern as follows:

*This school has no perimeter fencing. This lack of fencing brings safety and security problems to this school. A fence can help control entry in and out of our school. Our school needs a fence. This lack of a fence means that any person or vehicle can enter the school without being inspected or checked. Some intruders can easily find themselves within the school environment and put safety and security of the school at risk (Participant 24: administrator).*

***(o) Fire safety***

Participants also bemoaned lack of fire safety and preparedness in school. They explained that the school did not have any fire fighting equipment to help fight fire in case of emergency. The participants observed that the school did not have fire fighting equipment like extinguishers, fire hose reels, sand buckets, fire blankets and so on. They also bemoaned lack of fire safety policy, training and awareness among proximate stakeholders. One participant expressed his concern as follows:

*Our school seems ill prepared in terms of fire issues. The school lacks fire fighting equipment such as fire extinguishers, fire buckets, horse reels and fire blankets. This means that our school is very vulnerable to fire should an emergency occur. Moreover, pupils and staff are not trained in fire safety issues (Participant number 14: teacher).*

**(p) Waste management**

Participants in this study explained that the school has had poor methods of waste management. They noted that waste generated in school was left lying about uncollected and unprocessed. This meant that heaps of solid waste was seen around the school. Mostly, the waste generated was put in rubbish pits as shown in Picture 9 and then incinerated. Participants complained that the uncollected solid waste would smell and destroy the aesthetic beauty of the school environment. Participant number 15 (teacher) expressed his concerns over poor waste management practices as follows:

*Our school is dirty mainly due to poor methods of waste management. Solid waste is left lying around the school. There is heaps of solid waste rotting in rubbish pits. This brings about bad odours in school. Moreover, rotting waste becomes breeding ground for rodents and other vectors.*



*Picture 9: Rubbish pit near dormitories*

(Source: Field data, 2018)



Participant number 14 (teacher) had the following concerns about poor waste management in school environment:

*Poorly managed waste in this school can lead to disease outbreaks if unchecked. This is because rotten waste can be a breeding ground for mosquitoes and other insects that can cause diseases. Moreover, rotten waste can contaminate water sources and lead to water borne diseases.*

Participant number 30 (EHT) expressed his concern about poor waste management practices at Sefula secondary school as follows:

*Organic waste poses a serious threat to this school, since they ferment; they create conditions favourable for the survival and growth of microbial pathogens. Direct handling of solid waste can result in various types of infectious and chronic diseases with the waste workers and rag pickers being the most vulnerable.*

***(q) Sports and play grounds***

Participants interviewed in this study bemoaned poor state of the school's sports and play grounds. Their concern was that the sports grounds were in poor state and could expose pupils and teachers to injuries. They expressed concern over the poor state of football ground, netball court, basketball court, volley ball court and running track (Refer to Picture 10). They explained that the netball and basketball courts had cracks that could easily cause injuries to pupils and staff, especially if not in rightful sports attire. Participant number 2 (pupil) expressed concerns over the state of sports and play grounds as follows:

*The sports grounds in this school are in poor condition. The football ground has stones that can easily injure football players. The basket ball and netball courts have cracks and pot holes that can also injure players. Moreover, the sports grounds are surrounded with tall grass and shrubs that can temper with the security.*



*Picture 10: Rough Netball coat*

(Source: Field data, 2018)

The other participant expressed concern over the quality of play grounds and interacting spaces in school as follows:

*The interacting spaces and play grounds in this school are poor. The playgrounds have tall grass and poorly landscaped. The tree branches around the school also temper with the quality of playgrounds and interaction spaces for pupils and staff. Moreover, the play grounds in school are sandy and dusty (Participant number 12: teacher).*

**(r) Road safety**

Participants sampled in this study expressed concerns over safety of the pupils, staff and visitors with regards to road safety. Sefula secondary school had a road passing through it from Mongu to Sefula market. This road is of poor gravel standard. Participants explained that the road was dusty, causing air pollution. The road also had pot holes. Moreover, the motorists were driving at high speed on this road forgetting that there were pupils around the school. Participant number 26 (administrator) expressed road safety concerns as follows:

*The road passing through our school is a source of danger to pupils and staff, especially the visually impaired who cannot see the vehicles when crossing. This road is also dusty and therefore causes air pollution. The road has no humps, therefore, motorists especially taxi drivers drive at high speed without considering safety of people in school.*



### **5.4.3 Challenges faced by Sefula secondary school in Safety and Health management**

*Question 8: What challenges does Sefula secondary School face in Safety and Health Management?*

This study found out challenges that the school faced in safety and health management. This assisted the researcher come up with solutions to safety and health management issues inherent in the school. Participants sampled in this study were asked about challenges faced in managing safety and health issues in school. The responses were as presented below.

#### ***(a) Poor funding***

The participants noted that the school received poor funding from the church and government. This meant that the school had to set priorities in spending of money. Participant 24 (administrator) expressed concerns about lack of funds to fully take care of safety and health issues in school and explained as follows:

*The school has poor funding and this means that very little resources are allocated to safety and health issues. The opportunity cost of spending on safety and health, versus other school needs, such as staff or academic development is at play.*

Participant 23 (administrator) said,

*The school would rather spend money on buying books, furniture and other tangible materials than spend on intangible safety and security issues.*

#### ***(b) Little time***

Participant complained of limited amount of time to spare on school safety and health management. They noted that teachers had heavy teaching loads and also co-curricular activities to carry out. Therefore, there was limited time spent on safety and health planning in particular. Participant three (12: teacher) put it as follows:

*Teachers, pupils and other members of staff have little time spent or devoted to safety and health issues. This is because of heavy workloads. Teachers have more teaching periods and extra-curricular activities. This makes them too tired at the end of the day.*

Participant 13 (teacher) added that:

*Managing safety in this school requires a significant investment in time. This is set against a backdrop of existing time constraints faced by school administration, teachers, other staff and pupils. Staff in this school has big workloads, so many periods to teach and other teaching related activities. All this reduce time spent on managing safety and health issues in school.*

**(c) Lack of training and orientation**

Limited stakeholder understanding of safety and health issues was another barrier noted to management of health and safety in school. Participant 14 (teacher) explained this concern as follows:

*There is a poor understanding of safety and health issues among stakeholders. This could be as a result of lack of safety and health training and orientation among stakeholders.*

Other participants also complained of lack of training of stakeholders as a barrier to effective safety and health management in school. They noted that most stakeholders lacked the much needed safety training. For example, most of the stakeholders did not know even how to operate a simple fire extinguisher because they have never been trained.

**(d) Poor communication**

Poor communication among stakeholders was a factor that was noted to hinder safety and health management at Sefula secondary school. It was noted that some stakeholders were not aware of certain safety and health measures used in school, neither were they aware of any safety planning put in place. Participant 21 (parent) explained as follows:

*The school has poor ways of communicating safety and health issues to stakeholders. Communicating safety issues throughout the school is an important aspect of creating and managing a safe and healthy school. Such communication requires appropriate management and strategy to ensure the perception of safety is not one of burden, but a realization of its vital importance to all stakeholders.*

Participant three (3) also noted that the school had challenges in communicating safety and health issues to all stakeholders in time. The concern was some safety and health concerns were not communicated to everyone in school.

***(e) Limited stakeholder understanding***

The study established that there was limited understanding among stakeholders regarding safety and health issues in school. Other stakeholders saw no need of taking certain safety and health measures in school while others saw the need. Participant 29 (ESO) explained concern as follows:

*Effective safety and health management requires commitment and participation of all school stakeholders. While some stakeholders (e.g., teachers) would be more willing to align themselves with safety and health policy, others (e.g., parents) may not fully understand the justification for safety, or may feel it adds to their workload because they are not always found in school.*

The differences in stakeholder understanding also emerged due to differences in education levels, age, gender and other socio-demographic characteristics.

***(f) Poor leadership structure***

Participant noted that there should have been leaders at all levels of school management in order to deal with safety and health issues well. The school had no safety committee, for example. This made it difficult to manage safety and health issues because no one had any direct responsibility. Participant 29 (ESO) lamented leadership qualities as follows:

*Developing appropriate safety strategies and disseminating these throughout our school requires strong and committed leadership to promote safety and health and motivate all stakeholders in alignment with the safety strategy and policy.*

All the factors presented above seem to have led to poor safety and health management at Sefula secondary school according to participants.

**5.4.4 Participants' ideas on Safety and Health issues at Sefula secondary school**

The Second objective of this study was “to establish ideas and practices of safety and health held by sampled participants of Sefula Secondary School”. Sampled participants at Sefula Secondary School were asked what advice they would give to other stakeholders regarding safety, health and welfare associated with the school environment. As participants gave their advice on school safety and health, their ideas and practices of safety and health were also highlighted. Their responses are presented below:

*Question 9: What advice can you give to other Sefula secondary school stakeholders in relation to safety and health issues?*

Advice plays a major role in regulating safety behaviour of stakeholders at any workplace. This study also asked participants about the advices that they would give to different people in relation to safety and health issues in school environment. Their responses were as presented below.

***(a) Poor sanitary conditions***

Sampled participants expressed concerns over poor sanitary conditions at Sefula secondary school. They noted that the school had poor water reticulation. Toilets and ablutions were not working properly due to erratic water supply. One participant expressed his advice in terms of poor sanitary conditions of Sefula secondary school as follows:

*This school has poor water supply. Therefore, there is need to store enough water in drums and other containers for later use. Moreover, people can use chlorine or boil water before drinking. Pupils and staff should avoid consuming water from the Sefula stream without boiling it or treating it (Participant number 11: teacher).*

Participant number 15 (teacher) also gave advice on management of poor sanitary conditions at Sefula secondary school as follows:

*Water reticulation is very poor in this school. Therefore, the school should also consider building pit latrines to be used as an alternative to water closets. This will help improve levels of hygiene. Moreover, pupils should be educated on hygiene related issues.*

***(b) Bad company***

Participants interviewed noted that Sefula secondary school had a potential of socialising their children in a wrong way. They had fears that some pupils would be involved in bad companies with other pupils, staff and members of local community. A popular adage says; *bad company corrupts good manners*. This means that keeping bad company in general can never bear any good fruit. It is even more devastating in a school environment. The

dangers inherent in this practice can assume a quite alarming magnitude. In relation to bad company, participant number 21 (parent) advised as follows:

*At school, avoid keeping bad company. Bad companies lead to the loss of morals. Losing morals as a child may influence your personality as a child even after leaving school. Note that some corrupt leaders in our society may have had their morals dented while at school. This is because the bad company had completely changed their orientation. Therefore, avoid bad companies that may lead you to smoking, drugs, sexual activities and other bad vices. Bad companies may even affect your educational attainment in school.*

**(c) Sefula stream**

Sampled participants had concerns in relation to threats posed by Sefula stream to pupils, staff and local community. They noted that Sefula stream was potential source of water borne diseases and other social risks. Therefore, the participants advised that the school could strengthen rules regarding out of bounds to restrict pupils from going to the Sefula stream. They suggested that school prefects and teachers could punish pupils who were found at the stream. One participant advised as follows:

*Pupils found at the stream and in the nearby bush should be punished by teachers and school prefects. The school should improve water supply to prevent pupils from consuming Sefula stream water. This will prevent pupils from going out of bounds and keep them safe (Participant number 19: parent).*

Participant number 30 (EHT) also advised on potential threats posed by Sefula stream as follows:

*Water in Sefula stream is exposed to multiple sources of contamination. Therefore, this water should not be consumed untreated. This water could be a source of waterborne diseases that could affect pupils, staff and the local community. Pupils should be advised not to go the stream*

*at all. If they go, it should be in a company of friends because they can be attacked by intruders and criminals.*

***(d) Sefula forest***

Sefula secondary school is situated near Sefula forest as indicated in chapter two of this study. Therefore, participants noted some threats associated with the forest to the pupils, staff and the entire Sefula community. The participants noted that people in Sefula area used the forest in many different ways. The forest was used for fire wood collection, farming, collection of wild fruits, socialisation and many more. However, they noted that the forest also was exposing people in school and community to some risks. These risks include animal attacks, insect bites, attacks from criminals and so on. To this effect, the participants had the following advice to give:

*Sefula forest can pose threats to people in school and community. Pupils should not be allowed to go there. In fact, the school should strengthen the rules and regulations on out of bounds to prohibit pupils from going into the forest. This is because pupils can be attacked by criminals or attacked by animals whilst there* (Participant number 29: ESO).

Moreover, some pupils were worried about some threats posed by the bush around the school. According to pupils, the bush around this school had many potential threats to the lives of people in school environment. One pupil gave the following advice in relation to risks and threats posed by the bush near the school:

*The bush near our school is fierce whether during the day or night time. It is advisable not to socialise from this bush at any time. They are many potential sources of danger to people in school. The bush has snakes, wasps and other animals and insects that can harm people. Bushes around the school are also potential hiding places for thieves and criminals* (Participant number 4: pupil).

***(d) Long distance to school***

Participants in this study explained that some pupils and teachers covered long distances to come to school. Some pupils from Mutwiwambwa covered about eight kilometres to come

to school and back home. Some teachers stayed in Mongu town, meaning that they covered a distance of about 17 kilometres to school. This meant that they reached the school tired. Some pupils could easily drop out or be absent from school frequently. Therefore, sampled participants advised as follows:

*Some pupils in this school come from far places. Others come from the plain, others from far away forest areas on foot. Therefore, I suggest that such pupils can relocate to villages near the school. Those that can afford can just be in boarding. This is better than walking eight kilometres per day* (Participant number 17: teacher).

The participants also advised that the government and the church could build more staff houses so that every member of staff is accommodated within the school. The other participant expressed his advice as follows:

*Parents and teachers should always counsel pupils who come from faraway places. Moreover, the school should have a list of such pupils. This will help the school account for who pupils are missing and then take appropriate action* (Participant number 29: ESO).

Participants also noted that the school did not have safe travelling routes from home to school, especially those walking to school. They advised their children to walk in groups or in a company of friends so that they avoid external attacks. They also advised the school administration to provide road safety orientation to pupils and the community to avoid unnecessary accidents. One participant had this to say:

*When walking to school, ensure that you are in company of other pupils and friends. Do not walk alone because some 'trick stars' may attack you. Always observe traffic rules when crossing the road in and around the school. Walk on pedestrian sides and not on middle of the road. Always start off from home early so that you can reach in time. Also start off from school to home at appropriate times* (Participant 25: administrator).

***(e) Floods***

Settlements in the flood plain, along the flood plain and along Sefula stream are usually affected by floods in the months of February to April or May. This means that pupils and teachers who are found in these settlements face difficulties during flooding period. The challenges faced are associated with crossing water or wading in stream water. Therefore, one participant advised pupils and teachers affected by floods as follows:

*During floods, pupils who stay in flood plains should be encouraged to relocate to the plateau. They should relocate to nearby villages that are not affected by floods. Those that can afford can be encouraged to be in boarding (Participant number 13: teacher).*

In relation to pupils affected by floods and crossing streams, participants advised that dugout canoes could be placed at strategic places to help ferry pupils across. They also advised that bridges be built along strategic points of Sefula stream to help the community in crossing. This would lessen long distances covered and also reduce risks associated with floods. One participant advised as follows:

*The community should put dugout canoes at strategic places to help pupils cross streams and small lakes on their way to school. Moreover, the community can help in the building of bridges to help pupils, staff and the community in crossing Sefula stream (Participant number 22: parent).*

***(f) Religious conversion***

Some participants were concerned with some pupils and staff converting to the UCZ church through socialisation. They noted that some pupils could convert to UCZ because of the doctrines that were highly pronounced in school. They advised that the school could allow pupils the freedom of worship. They however noted that the school did not use force to convert pupils to the UCZ.

***(g) Extreme temperatures***

Some participants interviewed expressed worries over extreme temperatures in school environment. They noted that summers and autumn were very hot while winters were very



cold as indicated in chapter two of this study. To this effect, one participant had the following to say:

*It is usually very cold in this school, especially in the months of June and July. Therefore, pupils and staff should be encouraged to use more blankets and warm clothes to protect themselves from the cold. The school should also consider using T-shirts as part of uniform in hot season, unlike long sleeved shirts and neck ties (Participant number 14: teacher).*

#### **(h) Insecure dormitories**

Participants interviewed expressed worry on the state of dormitories, especially for boys. They noted that the dormitories were not secured enough. According to the participants, doors were not closing properly, windows were not closing properly and broken and walls had cracks. One participant advised as follows:

*I suggest that the school administration should renovate the dormitories regularly. They should repair the doors and windows. They should also repair our ablutions because most toilets are blocked and therefore not working. The showers are also not working properly. This is what forces pupils to use the nearby bush to answer the call of nature. Moreover, the school should buy lockers for pupils to put their property. They should also buy new bed and mattresses for pupils in boarding (Participant number 3: pupil).*

Some participants noted that the dormitories were not very secure. They noted that the doors and windows were not well secured. Therefore, they advised pupils to buy their own lockable trunks where they would be keeping their property. They also advised that pupil dormitory guards be appointed to take care of their property especially during evening studies. One participant gave advice on security at dormitories as follows:

*During evening studies, some pupils can be allowed to study from the dormitories. These pupils will take care of their property and that of others. This can help reduce cases of theft, unlike if the dormitories were left with dormitory guards (Participant number 26: auxiliary staff).*

Other participants advised that the school could consider fencing boys' dormitories as a way of improving security.

**(i) Poor quality meals**

Participants in this study had concerns on poor quality of food given to pupils in boarding. They noted that the food provided to pupils was not adequate and also lacked the much needed quality. To this effect, one participant advised as follows:

*Our food in boarding is not adequate and is also of poor quality. The school administration should provide us with quality and abundant meals. The boarding master should also taste the food before it is given to pupils. Moreover, the food should be inspected for quality by health personnel. Food sold in streets and at Sefula market should also be inspected by health officers to make sure that it is clean and in good condition (Participant number 1: pupil).*

The school administration acknowledged that food given to pupils was not very adequate and not of quality. They advised parents or guardians to provide enough pocket money to their children to buy food supplements when necessary. They also suggested that the health personnel would be inspecting foods provided to pupils in boarding and also food sold at Sefula local market. Other pupils also added that the dining hall, the kitchen and food storeroom should be kept clean and tidy, unlike the current scenario.

**(j) Mosquito bites**

According to participants, Sefula area presented problems of mosquito bites. They explained that the school environment was situated near areas that supported mosquito breeding. The school is located near Sefula stream with marshlands that are habitats for mosquitoes. Moreover, the flood plain also contained many stagnant water bodies that are breeding grounds for mosquitoes. These mosquitoes could infest people with malaria. To this effect, one participant advised as follows:

*Sefula area has a lot of mosquitoes, especially in summer. Therefore, there is need to advice pupils, staff and the community to sleep under treated mosquito nets. Moreover, during the rainy season, there is need*

*to disinfect stagnant water around the school in order to prevent mosquitoes from breeding* (Participant number 30: EHT).

Other participants suggested that people in school environment should be sensitised about the dangers of mosquito bites. Participants also advised that pupils' dormitories, teachers' houses, classrooms and offices be sprayed to keep mosquitoes away.

***(k) Pupils with Special Educational Needs***

Participants in this study had concerns in relation safety and health of pupils with Special Educational Needs. They noted that the infrastructure at Sefula secondary school had little in relation to inclusiveness. Parents noted that the visually impaired, especially, were not fully cared for. The classrooms and other infrastructure were not designed to aid the visually impaired. One participant had this to say to school administration as advice:

*This school should make sure that the Resource Centre for the Visually Impaired pupils and staff is fully equipped with learning facilities that should aid their welfare. Moreover, sanitation infrastructure and other structures should be well designed to include welfare of the disabled pupils and staff. This school should draw inclusive policies to help the disabled children* (Participant 22: parent).

The school administrators also advised that pupils and teachers should show respect, care and love to everyone in school community. They advised that pupils and staff should not discriminate or stigmatise pupils or staff with disabilities. One administrator explained as follows:

*Regardless of gender, social background, age or religious affiliation, all people in the school environment should be cared for, loved or respected. All stakeholders in this school deserve equal opportunities* (Participant number 29: ESO).

***(l) Lack of perimeter fencing***

The participants also bemoaned lack of perimeter fencing at Sefula secondary school. Therefore, they suggested that the school could have been fenced to control entry in and out of school. Fencing could also help define land ownership for the school.

***(m) Fire safety***

Sefula secondary school had no fire fighting equipment in place. Therefore, participants advised that the school administration could consider installing fire fighting equipment. This was meant to prepare the school for fire safety. One participant expressed his advice as follows:

*There is need to install fire safety equipment in this school. Equipment like horse reels, fire extinguishers, fire buckets and fire blankets can be installed to help in fire emergencies. There is also need to train pupils and staff on fire related issues (Participant number 17: teacher)*

***(n) Poor state of furniture***

Participants expressed concern over the poor state of furniture in school. They explained that furniture was not only in poor state but also inadequate. The chairs, desks, tables and stools were not adequate for staff and pupils. Moreover, the available ones were not broken and not in good condition. Therefore, the participants suggested that the school could source funds and buy furniture to cater for all pupils and staff. They also advised that the school could repair the already available furniture with the help of the industrial arts section.

***(o) Waste management***

Participants bemoaned poor waste management methods in school environment. Therefore, the teachers advised that the school administration could periodically conduct risk assessments in order to identify and manage hazards therein. Others suggested that the school could also improve in waste management practices in school. This could help reduce heaps of waste that rot and smell in school environment. They advised that the school could partner with Mongu Municipal Council in waste management. Regarding waste management in school, one participant advised as follows:

*The school should device better methods of managing waste. The school should put litter bins in strategic places to help reduces waste lying about. The school should also improve on frequency of collection of*

*generated waste to reduce on heaps of waste seen around the school*  
(Participant number 13: teacher).

Another teacher also suggested that the school could partner with Mongu Municipal Council in management of waste in school. Others suggested that the school could sensitise people in school environment about waste management.

***(p) Sports and playgrounds***

Pupils sampled in this study bemoaned the quality of school sports and play grounds. They noted that the sports grounds were of poor quality. They advised that the school could renovate the basket ball court, netball court and other play grounds to avoid injuries and near misses among pupils using those facilities. They also advised that the school could trim the trees in and around the school to improve the quality of playgrounds and other interaction spaces in school.

***(q) Road safety***

Participants noted that people at Sefula secondary school were exposed to dangers of over speeding cars within the school environment. This was because the road from Mongu to Sefula market was passing through the school. Therefore, they advised that the school should put road humps along strategic portions of the road. They also advised that there should be road safety signs and speed limits in and around the school. They also agreed that the road should be watered to reduce dust.

***5.3.3 Analysis of relevant documents***

This study analysed content validity in terms of safety and health issues at Sefula secondary school as follows:

The school rules were analysed. The school had rules that regulated pupils' safety and health practices whilst on school campus. The school rules were very clear on grounds that they even stated the penalties to be given to would be offenders. According to the administration of that school, the school rules were attached to every new pupil's acceptance letter. This was meant to orient pupils with the code of conduct at Sefula secondary school. Moreover, the new pupils in school (grades eight and ten) were given an oral orientation of the school rules to help clarify some rules which could be unclear. This

is in correlation with the oral orientation of school rules given to pupils at *Likwandikwandi* in a lozi novel entitled *Bupilo bwa Sepo* (Akapelwa, 2008). At this school, *Kabanze*, the teacher on duty, gave an oral orientation of school rules to grade one pupils as follows:

*‘Musabe ku lieha kwa Sikolo; mulangu hau lila mu mate ku eza mukoloko; mu yeme musa amboli; lipapali li felile.*

*‘A mubizwa ka mabizo amina, mualabe ka likute, ku shobota-shobota ku maswe’*

*‘Musabe bu hwaba; ha bu kutisezi sesing’wi’*

*‘Mamelang’i ku taha kwa Sikolo mu kenile; masila a lumelelwi’*

*‘Tokomela buka ni sing’oliso sa hao; Busafa bu maswe’*

*‘Haiba u nopa sesing’wi sa libyana za Sikolo, hupula kusi fitisa kuyo mung’wi wa baluti kapili’*

*‘Nako ya Sikolo haifelile mi mulukuluhile, muye musa liehi kwa bashemi ba mina’*

*‘Matapa, lisomo ni bumenemene ha li lumelelwi kwa Sikolo ni kamuta’.*

(Akapelwa, 2008: 8)

Translated as follows:

*‘Avoid late coming to school; when the bell rings, stand silently in a single file’*

*‘When called by your name, respond respectfully, whispering is not good’*

*‘Avoid absenteeism, it doesn’t pay’*

*‘Dirtiness is not allowed when coming to school, always be clean’*

*‘Take care of your pencil and book, carelessness is not allowed’*

‘If you come across any school items lying around, quickly surrender it to one of the teachers’

‘When school time is over, go back to your homes immediately’

‘Insults, bullying and pranks are not allowed in school at all’

The Monitoring tools for Education Standards Officer were also analysed. The study was mainly interested in safety and health related contents in the monitoring tool. The study found that safety and health components were not accounted for in the teacher monitoring instruments and institutional monitoring tools. These tools mainly looked at classroom teaching and learning. The teacher monitoring instrument mainly looked at the teachers’ particulars, monitoring objectives, lesson particulars, lesson preparation and documentation. However, there were few traces of Special Educational Needs content.

## **5.9 Summary**

This chapter presented the findings pertaining to safety and health issues at Sefula Secondary School. The results from interviews and focus group discussions were presented as direct quotations according to the views of interviewees. This section also presented information obtained from the observations and other relevant documents. The results were presented in the order of objectives guiding the study. The next chapter discusses the presented findings.

## CHAPTER SIX: DISCUSSION OF RESULTS

### 6.1 Overview

This chapter discusses the findings of the study. The primary purpose of this study was to develop a localised school safety and health manual, drawing lessons from Sefula Secondary School in western Zambia, using ideas and practices of safety and health held by sampled participants of that school. The chapter is arranged to address all research objectives raised in this study which are:

- (i) to assess the state of safety and health at Sefula Secondary School herein used as a case study
- (ii) to establish ideas and practices of safety and health held by sampled participants of Sefula Secondary School
- (iii) to develop a localised school safety and health manual for Sefula Secondary School based on items (i) and (ii) above

### 6.2 *State of Safety and Health at Sefula secondary school*

The first objective of this study was ‘*to assess the state of safety and health at Sefula Secondary School herein used as a case study*’. This section discusses the state of safety and health at Sefula secondary school.

#### 6.2.1 Meaning of School Safety

According to Mayer and Cornell (2010) defining school safety is often challenging. This is because the definition can encompass a wide remit of different themes, where the separation of rhetoric versus reality becomes a problem and where a key difficulty is distinguishing between personal beliefs and evidence-based research. This was also noted in a variety of ways of defining school safety by participants in this study. The definitions given by participants comprised different aspects of school safety. School physical safety, social safety and psychosocial safety issues were incorporated in the definitions given by participants at Sefula secondary school. This was in line with the most commonly noted aspects of school safety in the literature; which were physical, psychological, environmental and social.



In terms of the physical issues of school safety, violence and bullying were commonly discussed in the literature, just as some participants defined. For example, in a recent assimilation of school safety data, Dunlap (2013) focused particularly on school violence as the central aspect of school safety. Literature often takes school violence as the contextual basis for school safety research and aims to develop response mechanisms to crises (Kingshott and McKenzie, 2013). As well as school violence, risk and injuries to pupils form a central precept within the school safety literature. This was also correlating with definitions given by some participants of Sefula secondary school who expressed that a safe school had few injury cases and health risks. Injuries at school are often investigated with the primary discussion and analysis aimed at reducing accidents or risks as noted by Scala, Gallagher, & Schneps (1997). However, such discussion often neglects the management barriers associated with creating a safe school and does not necessarily consider the potential fallacy of using only accident or injury statistics to monitor school safety.

The diverse ways of understanding school safety as noted from different participants at Sefula Secondary School is in line with the interpretivism paradigm used in this study. Interpretivism paradigm is directed at understanding phenomena from an individual's perspective and at investigating interactions among individuals as well as historical and cultural contexts that people inhabit (Creswell, 1994). Interpretive researchers believe that reality consists of people's subjective experiences of the external world; thus, they may adopt an inter-subjective epistemology and the ontological belief that reality is socially constructed. In this instance, variations shown in the understanding of school safety among participants meant that different people who live in the same school environment may have different ways of understanding safety. This could also mean that these stakeholders could attach different values to the practice of school safety in their daily lives. The different meanings attached to school safety by participants at Sefula Secondary School are discussed below:

Psychosocial safety as defined by participants sampled at Sefula Secondary School is seen as something that affects the mental well-being or mental health of pupils and staff and may have physical effects by overwhelming each individuals' coping mechanisms and impacting the ability to work in a healthy and safe manner. Psychologically, school safety

is discussed in literature with reference to how safe pupils feel at their school (Mooij and Fettelaar, 2013). More recently, discussions regarding the feeling of being safe at school have generated debates about how safe individuals feel in terms of gender (Toomey, McGuire, and Russell, 2012), homosexuality (Fleming, 2012; Vega, Crawford, and Pelt, 2012) and disabilities (Boon et al., 2011).

Some participants at Sefula Secondary School incorporated road safety in their definition of a safe school. This was because the school had a through road to the market from Mongu-Senanga road. This road was usually busy and posed concerns to stakeholders in terms of road accidents. Road safety is particularly an important issue in schools in rural settings like Sefula area where the roads lacked the much needed quality. This was also observed by Hidayati, Liu and Montgomery (2012) who focused on traffic flows as a key part of improving school safety in Indonesia, while John, John and Bose (2012) illustrate that road safety and school transport in India were a leading cause of injury. However, other scholars like Parusel and McLaren (2010) suggest that focusing on road safety creates an illusion of a safe school and ignores wider safety issues at school. This represents a key tenet of school safety literature, where specific problems are often identified and analyzed, but without consideration of the wider problem. For example, focusing on school safety seems unrealistic for schools in developing countries like Zambia where efforts are primarily centred on raising educational standards at the expense of safety.

The diversity in definitions of school safety by Sefula Secondary School participants represents a challenge, particularly for a school where the concept of school safety is just coming into existence and beginning to show signs of future potential. The issues with school safety research and literature are highlighted by Furlong, Morrison, Skiba and Cornell (2004), who suggest that school safety research can only progress by developing a core literature to critically assess the methods, measurement and analysis of school safety.

Although a variety of school safety definitions exist, in this study, the remit of school safety relates to the physical well-being of the pupils, staff and visitors as well as the local community of Sefula area. If all these factors are fulfilled, Sefula Secondary school could be judged as being safe. However, achieving all aspects of school safety represents a considerable challenge with far reaching management implications.

Conclusively, the participants at Sefula Secondary School had different meanings of school safety because of different perceptions held by individuals. However, they referred to a “safe school” generally as a critical and necessary environment in which effective teaching and learning can take place without fear of accidents. They seemed to agree that a safe Sefula Secondary School could support learning by creating and promoting a physically, emotionally, socially and academically secure climate for pupils, staff, visitors and the community.

### **6.2.2 Meaning of a Healthy School**

This study explored different meanings of a healthy school from participants. This was with the thinking that definition held by a person was critical in influencing practice. The meaning of a healthy school received different interpretations from participants. This was because each individual was defining it in relation to their experiences and ideas of health. Participants at Sefula Secondary school noted that the school played a key role in supporting the health and well-being of pupils. This is also supported by Educating our future, Zambia’s policy document (1996) which recognises that schools can help children to become happier, healthier and more ready to learn and achieve their full potential.

Some of the participants explained that a healthy school enables and supports planning and implementing of health and well-being for pupils, staff and visitors. In the varied definitions of a healthy school, it was noted that a healthy school promotes physical and emotional health by providing accessible and relevant information and equips pupils and staff with the understanding, skills and attitudes to make informed decisions about their personal health. According to some participants, a healthy school understands the importance of investing in health to help pupils do their best, raise levels of achievement, improve standards and develop policies and practices to promote health. This notion is also noted by Educating Our Future, Zambia’s education policy document (Ministry of Education, 1996) who argue that teaching and learning are affected by personal health of members of the school community, while school activities and what is learnt can be powerfully influential factors in promoting well being of learners.

Participants also noted that a healthy school adopts a whole school approach, involving the community, parents, staff and pupils in improving school health. This is also in line with

Purkey's (1996) Invitational Education Theory used in this study which stresses the fact that people in a school environment should all be involved in planning for safety. According to Purkey (1996), a health promoting school is inviting in ways such as its processes, people, places, programmes and policies. In line with school health, the healthy school campaigns in Chicago (2012) outline features of a healthy promoting school. The features of a health school as noted by campaigns in Chicago correlate with different meanings attached to a healthy school as given by participants at Sefula Secondary School as follows:

- providing safe and healthy places to learn and play.
- recognizing health as an integral part of excellence in education.
- closing the achievement gap and eliminating health disparities.
- providing teachers, principals and school staff with knowledge and skills to create a healthy school environment.
- ensuring access to needed health services to students at school.
- connecting parents and community members with school-based health promotion efforts.

### **6.2.3 Benefits of a safe and healthy Sefula secondary school environment**

This study also explored the benefits of a safe and healthy Sefula secondary school environment. Participants acknowledged the benefits of a safe and healthy school environment. Therefore, they explained the importance attached to a safe and health Sefula Secondary School environment. The following were the explanations given to show the importance of a safe and health Sefula Secondary School environment:

Safety in the school environment support academic success of each pupil, giving them opportunity to learn and achieve in a safe and nurturing environment. This is because there are few disturbances on part of the learners within the school environment. The mind is just set on learning.

Stakeholders of Sefula Secondary School also noted that in a safe and healthy school environment, there are fewer cases of accidents and diseases caused by slips, trips and falls. This was also observed by the Health and Safety Executive (HSE, 2012) in their advisory note "Preventing Slip and Trip incidents in the Education sector". The HSE (2012)

observed that slips, trips and falls were the most common type of accidents in the school environments in United Kingdom. The latest figures reported by the HSE were that almost 2000 major injuries occurred in education in United Kingdom every year, and that 55% were caused by a slips, trips and falls (HSE, 2012).

Participants also noted that a safe and healthy school enhances good pupil and staff attendance to teaching and learning. Educating Our Future, Zambia's policy document, for example, emphasises that the school should strive to be a living social community that promotes learner's health and the will and desire to learn (Ministry of Education, 1996). This could be interpreted as meaning that healthy pupils who are happy in their school environment constitute the mainstays of a good learning climate.

Participants noted the benefits of a safe and healthy school environment in that any incident or accident arising from poor safety and health management in school would inevitably damage their schools' reputation and corporate image. The school with high rate of accidents and poor health conditions has poor image from parents and the community. People may not want to enrol their children in a school with poor safety and health conditions. This is also supported by Srichai et al. (2013) in his research on safety in Thailand schools. In his research, Srichai et al. (2013) note that schools in Thailand often use safety and health conditions as a differentiating factor when attracting new parents and pupils. This is also supported by Smith (1994) who notes that in a competitive market environment; schools must attract pupils to achieve sustainability. This argument is also supported by Trump (2012) who explains that in Thailand, when choosing a school, parents often visit to explore the school, search for information about its educational quality and pay considerable attention to safety and health issues.

Moreover, participants at Sefula Secondary School noted that an effective safety and health management in the school environment could enable pupils to foster a correct perception of safety and health within the school environment. This in turn benefits the community at large.

#### **6.2.4 Dangers of an insecure and unhealthy Sefula secondary school environment**

Thro (2006:66) argues that “if learners are subjected to physical violence, to bullying and intimidation and to a culture of illegal drugs, effective learning cannot take place”. Trump (2008:66) also warns that “if learners do not feel safe to learn and teachers do not feel safe to teach, the focus shifts from academic tasks to discipline and personal safety.” In relation to the foregoing, this study explored dangers of an insecure and unhealthy school environment as perceived by participants from Sefula secondary school. Insecure and unhealthy school environments are against the Invitational Education theory which is used in this study. A key concept of Invitational Education theory (Purkey and Novak, 1996) suggests that the school should be an inviting place across a set of five key areas (people, place, processes, policies, and programs). Therefore, an insecure and unhealthy Sefula school environment would not be an inviting place to pupils, staff visitors and local community members because programmes, school policy, place, people and processes would be unfriendly. The participants Sefula Secondary School noted the following as dangers of an insecure and unhealthy school environment:

Participants expressed that an insecure and unhealthy school environment can have many cases of injuries. They noted that in an insecure and unhealthy school, there are many hazards that can affect pupils, teachers, visitors and the local community. Injuries for pupils or members of staff could affect their attendance to academic tasks and therefore affect their work. In an insecure school, injuries mainly arise from play grounds because playgrounds cover the biggest area of interaction in school. This is supported by Centre for Disease Control and Prevention (2012) who note that each year in the United States; emergency departments treat more than 200,000 children ages 14 and younger for playground-related injuries.

Participants of Sefula Secondary School noted that emotional safety was an important topic for their school. They noted that the school could invest time in sharing character education and teaching pupils not to emotionally abuse or bully their peers. Emotional safety is especially important because it is often difficult for teachers and parents to detect. Stakeholders noted that bullying, for example, could cause victimized pupils to suffer from lower self-esteem, absenteeism and daily stress about pupils ‘well-being. In the school environment, forms of violence like bullying can traumatize pupils and affect their

developmental processes. This is supported by Ziegler (2002) who argues that many children who are affected by traumatic stressors such as bullying can have their developmental processes and parts of their brains affected by the traumatic events. This situation could affect teaching and learning at Sefula secondary school because the environment was not safe and health.

According to participants, unsafe school environment could hinder pupils' enthusiasm for life-long learning. Unsafe school could also threaten pupils' chances of developing important values, such as integrity, discipline and civic-mindedness. Conversely, reduced school violence, for example, results in increased pupil attendance and lower dropout rates, which in turn leads to increases in academic achievement.

Participants also explained that a school cannot teach pupils who do not come to school. If a pupil feels that being in the school is a risk, that pupil is unlikely to come to school. No parent wants to send their children to learn in a threatening environment. In other words, participants noted that the presence of fear makes learning impossible. A safe and secure school is important as it relates to pupils and teachers and their ability to concentrate and learn. Learning requires a positive atmosphere in which pupils and staff feel not just physically safe, but also emotionally safe. Creating such an environment means ensuring pupils safety throughout the school day and keeping experiences free from both physical violence and social or emotional violence. This is also supported by UNICEF (2012) who note that learning can only take place in a more secure and safe environment.

Participants Sefula Secondary School also noted that an unsafe school environment can affect pupils' health and then affect their school attendance. Sefula Secondary School stakeholders noted that pupils spend more time in school. This meant that the quality of the school's environment should be a priority. Unfortunately, school administrators faced tremendous budget constraints and were often forced to make tough decisions about what they spend money on. Unhealthy school environment could also lead to disease out breaks that could affect pupils, staff and visitors. This scenario could affect pupils and teachers' health, attendance and general academic performance. This is supported by the US Environmental Protection Unit (2012) who argue that unhealthy school environments can affect learners' health, attendance, concentration and performance, as well as lead to expensive, time-consuming clean up and remediation activities.

### 6.2.5 Safety and Health Hazards at Sefula Secondary School

In trying to assess the status of safety and health of Sefula Secondary School as stated by objective one of this study, this research looked at safety and health hazards inherent at Sefula Secondary School. The study on hazards helped to spot out potential sources of danger and risks at Sefula Secondary School. This was very vital for the development of the localised school safety and health manual. Although the working environment in schools is not generally considered as hazardous as manufacturing industries and construction sites, schools are not entirely free from hazards. Schools have a range of risks and hazards that need to be properly managed to make them safe and healthy workplaces and to minimise the chance of staff, pupils and visitors being injured or harmed. Sefula Secondary School environment was also found to have hazards. These hazards spotted at Sefula Secondary School were categorized into the following classes:

- (i) Biological hazards
- (ii) Chemical hazards
- (iii) Ergonomical hazards
- (iv) Mechanical hazards
- (v) Physical hazards
- (vi) Psychosocial hazards

#### **(i) Biological Hazards**

Biological hazards also called *biohazards* are organic substances that pose a threat to the health of humans and other living organisms. Biological hazards include pathogenic micro-organisms, viruses, toxins (from biological sources), spores, fungi and bio active substances found in the environment. Biological hazards are sometimes considered to include biological vectors or transmitters of disease. According to Driscoll et al. (2005), 320 000 workers die each year from communicable diseases caused by work-related exposures to biological hazards worldwide.

According to interviews conducted with participants and observations made by the researcher, biological hazards found in school were as discussed below:

(a) *Mosquito bites*: Participants bemoaned the presence of mosquitoes, especially in the rain season. They complained that they experience increased mosquito bites in summer.



According to participants, Sefula area was infested with mosquitoes because the school environment was near habitats that favoured mosquito breeding. These included Sefula forest, marshes and tall grasses. The Sefula stream and irrigated rice fields in Sefula area also provide natural habitats for mosquitoes.

Mosquitoes in Sefula environment pose a threat to human health. Mosquito bites can transmit micro-organisms to people in Sefula area that cause Malaria. The United States Environmental Protection Agency (2010) note that even bites from mosquitoes that do not transmit disease can result in secondary infections, allergic reactions, pain, irritation, redness and itching. All these can affect teaching and learning, especially to the affected pupils and staff. This is because the affected pupils and staff could shift their attention from academic tasks to personal health.

*(b) Bacteria:* Sanitation infrastructure and decomposing waste in school environment were noted as potential sources of bacterial infection at Sefula secondary school. The on-spot check made during data collection revealed that the school had poor sanitary conditions and poor waste management practices. Toilets and ablutions for pupils had no water in most times. Toilets and showers were even blocked. Moreover, solid waste was poorly managed as it just decomposed in rubbish pits. All these were potential sources of bacteria and germs that could bring different diseases to people in school and community.

*(c) Fungi and Mould:* Moulds and fungi were found in Sefula secondary school environment. Mould and fungi were found in buildings, dry walls and trees at Sefula secondary school. The key factors that necessitated mould and fungi growth at this school was moist and wet conditions, especially in summer. In Sefula secondary environment, mould and fungi grew on buildings as a result of flooding, leaks in the roof or basement or plumbing, poor lighting and ventilation and excess humidity. The presence of mould and fungi in Sefula environment could cause health problems. Inhalation of the mould, fragments of the moulds, or spores could lead to health problems or make certain health conditions worse. According to Canadian Centre for Occupational Safety and Health (2010) toxins from moulds can slowly wear down the immune system and can lead to allergic or respiratory problems. This could also expose people in the school environment to dangers of poisoning and release allergens. This assertion is also supported by Healthy school Network (2012) who explain that damp, mouldy school environments are harmful

to pupils as they create conditions that are favourable for dust mites and standing water in schools can increase pest and rodent infestations, all of which can release allergens.

*(d) Animals and birds:* Sefula secondary school kept cattle and chicken (see picture 1). All these pets were potential sources of biological hazards to people in school environment and the community. This is because keeping pets is not an activity that is free of inherent risks. Cattle and chicken kept in this school could act as hosts for pathogenic and parasitic organisms, which could be readily transmitted from one species to another and also to people. Therefore, the infections transmitted by these pets are a potential source of diseases to people in Sefula secondary school environment. Likewise, people who were taking care of school cattle and chicken in school were exposed to animal and bird diseases and infections, some of which have the potential to infect humans or cause certain allergies. This is correlation with the Occupational safety and Health Administration (OSHA, 2015) who observe that many school workers encounter daily exposure to biological hazards present in various sources throughout such as blood and body fluids, culture specimens, body tissue and cadavers and laboratory animals, as well as other workers.

*(e) Blood and body fluids:* Exposure to blood and other body fluids among people was noted as a potential source of biological hazards in Sefula secondary school environment. People in Sefula Secondary School environment could be exposed to biological hazards via contact with human bodily matter such as blood, tissues, saliva, mucous, urine and faecal matter. This is because these substances have a high risk of containing viral or bacterial diseases. According to Safety Institute of Australia (2012) HIV/AIDS, hepatitis B virus (HBV), hepatitis C virus (HCV) and other diseases can be contracted through body fluids or blood transfusion. Other infectious diseases can be transmitted through blood and body fluids from person to person within the school environment.

*(f) Sewage and waste water:* This study noted that Sefula secondary school had poorly managed sewer systems and waste water. In the context of this study, the term 'sewage' refers to raw sewage, sewage sludge, or septic tank waste. Raw sewage is mainly water containing excrement and debris such as sanitary towels, condoms and plastic. These were potential sources of biological hazards in Sefula school environment and the local community. According to Delaware Health and Social services (2014) sewage and wastewater contain bacteria, fungi, parasites and viruses that can cause intestinal, lung and

other infections. Bacteria may cause diarrhoea, fever, cramps, and sometimes vomiting, headache, weakness, or loss of appetite. Some bacteria and diseases carried by sewage and wastewater are *E. coli*, shigellosis, typhoid fever, salmonella, and cholera. The problem of sewerage was also experienced at Ivan Dawson Primary School in Cane Garden Bay which prompted the indefinite closure of the educational institution (BVI News Online, February 22, 2016).

(g) *Parasitic worms*: Sefula stream was also noted to contain parasitic worms that were potential sources of biological hazards according to participants interviewed. Sefula stream provided a source of water for locals used for domestic and agricultural purposes. However, the stream also contained parasitic worms that could pose danger to humans in Sefula community. These parasitic worms could lead to waterborne diseases like Bilharzias, cholera and typhoid among others.

At Sefula Secondary School, toilets, ablutions and sewage systems were commonly noted by almost all participants in the interviews as potential sources of biological hazards. This meant that toilets and ablutions at the school were not as clean as expected. There was also evidence that the school had poor methods of waste management as the responses from interviews indicated that decomposing waste was another notable source of biological hazards.

Exposure to biological hazards in Sefula Secondary School environment also occurred when staff and pupils were in contact with laboratory cell cultures, soil and plant materials, organic dusts, food, as well as rubbish, wastewater and sewerage. Biological specimen in science laboratory was also a notable source of biological hazards as indicated by Sefula Secondary School stakeholders. Because of poor air conditioning and high humidity at Sefula Secondary School as noted in chapter two, exposure to moulds and yeasts was also noted as a potential source of biological hazards at Sefula Secondary School.

## **(ii) Chemical Hazards**

According to Centre for Disease Control and prevention (2015), a chemical hazard is a type of occupational hazard caused by exposure to chemicals in the workplace. In a school context, a chemical hazard is a type of hazard caused by exposure to chemicals in the school environment. Exposure to chemicals in a school can cause health effects to humans. The

use of chemicals has increased dramatically in schools due to the introduction of science subjects where chemicals are stored in laboratories. As a consequence, people in the school environments are also exposed to a large number of chemicals of both natural and anthropogenic origin. People in the school environment are also exposed to other sources of chemical hazards apart from those in laboratories. Exposure occurs through the air people breathe, the water they drink or bathe in, the food they eat and the soil they touch (or ingest as toddlers). They are exposed virtually wherever they are: at home, in the school, on the playground and during transport.

Sefula Secondary School was found to have chemical hazards as noted by stakeholders. These chemical hazards were most noted to arise from chemicals from school laboratory. Some chemical hazards identified in the school environment are discussed below:

(a) *Lead Paint*: This was a notable source of chemical hazards at Sefula Secondary School as noted in the interviews. This school was built in the 1950s as accounted for in chapter two of this study. This meant that some older buildings still had components of lead paint used in the past because they were very few renovations done to the buildings since the school was built. Exposure to lead paint could lead to learning disabilities, cancer and other problems, especially in children. This is supported by WHO (2010) who argue that even very low levels of lead exposure can have a detrimental impact on a child's Intelligence Quotient, likelihood of having a learning disability, educational attainment, and reading readiness at kindergarten entry. However, no cases of learning disabilities, cancer and other problems related to lead paint were noted by the participants.

(b) *Contaminated Food and Water*: Very few participants interviewed noted this as a source of chemical hazards. This low response rate could be because there were few cases related to food contamination at Sefula Secondary School in recent past. However, the school was reported to have poor water reticulation (Zambia watchdog, May, 2014). According to participants, the school had older lead arsenic pipes that were installed many years ago. The lead in these pipes could cause lead contaminants in consumed water. This could also affect the quality of the food served to pupils in the boarding. While Western Water and Sewerage Company tested water periodically, the water could still expose consumers to lead contamination. This lack of clean water could lead to diarrhoeal diseases at Sefula Secondary School. This concern is supported by World Health Organisation

(WHO: 2004) who argue that diseases related to inadequate water, sanitation and hygiene are a huge burden in schools of developing countries. WHO (2004) also estimated that 88% of diarrhoeal diseases is caused by unsafe water supply and inadequate sanitation and hygiene. WHO (2004) also noted that many schools serve communities that have a high prevalence of diseases related to inadequate water supply, sanitation and hygiene and where child malnutrition and other underlying health problems are common.

(c) *Pesticides and agrochemicals:* At Sefula Secondary School, pesticides and agrochemicals were used on the lawns and gardens. For all pesticides to be effective against pests they are intended to control, they must be biologically active or toxic. Because pesticides are toxic, they are also potentially hazardous to people and animals in Sefula Secondary School environment. Therefore, people in Sefula Secondary school environment who used pesticides or regularly come in contact with them must understand the relative toxicity, potential health effects and preventative measures to reduce exposure to the products they use. According to World Health Organisation (2016) pupils may be more susceptible to injury from exposure to pesticides, since their brains are still developing.

Pesticides have the potential to cause health effects such as damage to the nervous, hormonal and other systems. Scientific evidence also increasingly points to links between cancer and exposure to certain chemicals, including pesticides.

Pesticides used to control pests in and around Sefula Secondary School environment presented a risk of poisoning from direct exposure of pupils and staff following applications by pest control technicians. Food, including meals, ingredients and snacks, brought into the school for pupils, may contain pesticide residues from agricultural use on crops or post-harvest storage. According to analysis by the UK Government (2008), some 80% of fruits and vegetables given to pupils by their Local Education Authorities as part of the UK's "School Fruit and Vegetable Scheme" contained pesticides. Some of the pesticides found most frequently are among those most hazardous to children's health. This could be the case with Sefula Secondary School. The school has an orchard with fruits and vegetables. These fruits and vegetables could contain harmful effects of pesticides.

(e) *Air Pollution:* Air pollution was noted as one of the sources of chemical hazards at Sefula Secondary School. According to participants, air pollution in the school

environment was caused by dust from sand soils and fumes from auto mobiles. Air pollution also resulted from smoke arising from incinerated waste. This scenario could result in respiratory diseases among people in school environment. Since the school was poorly ventilated, pupils, staff and visitors were exposed to indoor air pollution. This is in correlation with an article published by Mohai *et al.* (2011) which draws attention to air pollution and its link to pupil health and academic performance in Michigan. The study focused on public schools in Michigan, levels of pollution in areas surrounding them and how these factors affect pupils. The findings showed that many schools in Michigan were located in places with high levels of air pollution coming from industrial sources. This affected the visibility properties of the schools. Similarly, dust from the gravel road, sandy soils and chemicals from automobiles in Sefula Secondary School environment were likely to expose people to dangers of air pollution.

(f) *Laboratory chemicals:* Sefula Secondary School stocked a good number of laboratory chemicals and paints. All these could have an effect to pupils, teachers and others in the school environment if not well handled. The severity of the impact of chemical hazards at Sefula Secondary School could at times be influenced by factors such as amount, concentration, time of exposure, mode of entry into the body, age, sex, health status and resistance of the exposed people. Among all chemical agents in the school, the most notorious and most in contact with the skin or respiratory system that deserve attention are solvents according to U.S. Consumer Safety Product Commission, (2006).

### **(iii) Ergonomic Hazards**

This study established that Sefula Secondary School had a good number of ergonomic hazards. An ergonomic hazard is a physical factor within the environment that harms the musculoskeletal system. Ergonomic hazards include themes such as repetitive movement, manual handling, workplace design, uncomfortable workstation height and poor body positioning.

Ergonomic hazards identified in Sefula Secondary School environment included widespread mismatches between anthropometry and school furniture, heavy schoolbag carriage by pupils and unhealthy bag behaviour among others. According to participants, negative effects of the noted ergonomic hazards ranged from general tiredness,

musculoskeletal pains, spinal deviations, shoulder level shifts, injuries and psychological disturbances.

Sefula Secondary School environment was found to have a good number of ergonomic hazards that affected work processes of staff and pupils. These ergonomic hazards included the following:

(a) *Manual handling*: The term ‘manual handling’ is defined as the movement of a load by human effort alone (Hughes and Ferret, 2011). This effort may be applied directly or indirectly using a rope or a lever. Manual handling may involve the transportation of the load or the direct support of the load including pushing, pulling, carrying, moving using bodily force and, of course, straightforward lifting. Back injury due to the lifting of heavy loads is very common and several million working days are lost each year as a result of such injuries.

At Sefula Secondary School, manual handling was noted as one of the sources of ergonomical hazards. Most of the work done by teachers, pupils and auxiliary staff involved manual handling. The school had no machinery and adequate tools needed for lifting, pulling, carrying, pushing and moving things. Therefore, people used bodily force. Pupils and staff carried loads of books and boxes from offices to classrooms. They also carried loads of work tools manually, exposing them to ergonomic hazards as a result of manual handling.

(b) *Improperly adjusted work stations and furniture*: The school had improperly adjusted work stations and unadjustable furniture. Most furniture in terms of desks, stools, chairs and tables could not be adjusted to suit the height of the pupil or member of staff. This caused back pains and other associated disorders. Common sense drives the need for adjustable school furniture. If the desk or chair does not fit a pupil, a number of things can happen. Namely, the pupil could be forced to sit awkwardly, causing poor posture and limiting her or his concentration. A desk that is too high can make activities like writing difficult, too slow and more posture problems (Domljan *et al.* 2008).

(c) *Poor state of work tools*: This was noted as one of the sources of ergonomical hazards at Sefula Secondary School. The school stocked some work tools in wood workshop and

other cleaning tools. These tools were not efficient enough and therefore posed challenges to work with. These poor tools caused poor grip, using too much force and poor working postures at times. This could result in musculoskeletal problems to users.

(d) *Heavy carrying loads* were noted as one of the sources of ergonomical hazards in school. Most loads carried by pupils, teachers and other members of staff involved manual handling and required use of too much force. Pupils at Sefula Secondary School carry school bags from dormitories or home to school every day. Carrying school bags could contribute to low back pain in pupils. This is supported by Domljam *et. al.* (2008) who observed that pain that is inflicted in pupils could show up years later in even more serious back injuries. Factors that contributed to musculoskeletal problems among pupils at Sefula Secondary School as a result of carrying school bags included longer carriage durations, carrying additional bags and lack of access to lockers.

#### **(iv) Mechanical Hazards**

Sefula Secondary School was found with mechanical hazards. Mechanical factors include unshielded machinery, unsafe structures at the work place and dangerous unprotected tools are among the most prevalent hazards. They affect the health of high proportion of the workforce within the school. Most accidents can be prevented by applying measures in the school environment, working practices and safety systems and ensuring appropriate behavioural and management practices.

At Sefula Secondary School, unshielded machinery in wood and metal workshop, unsafe dilapidated structures and dangerous unprotected tools were some of the examples of mechanical hazards that were noted.

#### **(v) Physical Hazards**

A physical hazard is a factor within the environment that can harm the body without necessarily touching it. Physical hazards are a risk to the school environments' physical safety. Physical hazards not only include visible things that can hurt people in the school environment, such as machinery, rough playing grounds, electronic waste, tools and so on but also forms of physical energy, such as noise, vibration, radiation and temperature extremes. Injuries from physical hazards can be immediate, such as from a fall. Injuries



from physical hazards can also be delayed for many years, such as gradual loss of hearing from noise exposure.

The physical state of a school can also impact on pupils' achievement. According to Schneider (2002) several aspects of school buildings can affect learning, including spatial configurations, noise, temperature, lighting and air quality. Pupils in the school environment require clean air, good lighting and adequate and comfortable classrooms in order to achieve at their highest level Schneider (2002). This study identified the following physical hazards at Sefula Secondary School:

(a) *Forest fires*: Sefula secondary school is located near Sefula forest, shrub lands and grasslands. People usually start fires in these areas. Some are uncontrolled wildfires started by human carelessness while some fire was started by people on farmlands. According to school stakeholders, these fires pose threats to the school environment and the community at large. They destruct buildings and crops in farms. These fires could also destroy school infrastructure if uncontrolled and unmonitored. Fires in this forest can threaten Sefula communities and destroy vast amounts of timber resources, resulting in costly losses.

(b) *Floods*: Part of the Sefula community is located on the edge of the flood plain. These areas along the flood plain experience periodic flooding between the months of January to April every year. The Sefula stream also swells with water and discharges some water on dry land. These flood waters have a potential of disrupting people's activities and even destroy property. Floods also temper with pupils' movements from villages in flood plain to school and back. In Sefula environment, flood frequency poses a threat to community infrastructure and affects the total well being of people in regard to health, access to clean water, access to food, school attendance and sanitation. Physical and social security is also threatened by intensity and frequency of floods in some parts of Sefula community. The most vulnerable, yet understudied, group when disasters occur are school children (Mudavanhu, 2014). Flood effects to the socio-economic well-being of children have been well documented; yet, the impacts on children's access and right to quality education have received little attention (Masese *et al.* 2012). This is a concern and poses a threat to the achievement of universal Sustainable Development Goals, especially goal number four which is to '*ensure inclusive and equitable quality education and promote life-long learning opportunities for all*' (United Nations, 2015).

(c) *Animal attacks*: As noted earlier, Sefula community is located near Sefula forest, shrubs and grasslands. All these are habitats for animals that can be in conflict with people of Sefula. These natural habitats contained variety of snakes and other wild animals. These were likely to be in conflict with people of Sefula community, especially that people were clearing land for development purposes. This is in agreement with Langley (1994) who noted that human injury resulting from encounters with non-domesticated animals is increasingly common throughout the world, particularly as ecosystems change and humans encroach on previously wild land.

(d) *Poor lighting*: Inadequate lighting levels at Sefula Secondary School presented a potential safety hazard. Studies show that poor or inappropriate lighting in schools can adversely affect pupils' health and their ability to learn (Healthy schools Network, 2012). Sunlight is the most important source of light and energy for people at Sefula Secondary School. Its benefits can be gained through direct exposure outdoors. However, people in the school environment spend most of their times indoors. For example, pupils spend up to 40 hours per week in school buildings, especially when they participate in learning activities (Hathaway, 1992). Poor lighting in Sefula Secondary School environment could disadvantage pupils and staff with weak vision. This is supported by (WHO, 2004) who argued that poor lighting can disadvantage children with weak vision and may adversely stimulate pupils with behavioural problems. WHO (2004) also argued that good lighting in school is not simply about daylight penetration or saving energy, it must sustain the teaching and learning process.

(e) *Poor ventilation*: According to Sefula Secondary School stakeholders, the school infrastructure was generally poorly ventilated. The classrooms, offices and dormitories were poorly ventilated. According to newly published research conducted by Haverinen and Shaughnessy (2015), pupils in well ventilated classrooms perform significantly better on standardised tests than those who receive inadequate fresh air. The study suggests that increasing classroom ventilation rates towards recommended guidelines and translates into improved academic achievement. Reaching the recommended guidelines and pursuing better understanding of the underlying relationships would support sustainable and productive environments for pupils and staff in school.

With poor ventilation, all contaminants that could be present in Sefula Secondary School environment, including particles, moulds, viruses and odours from products such as cleaning supplies, art supplies, adhesives, paints, textiles and chemicals maybe more concentrated. This could affect staff and pupils and may result in more sick days and higher absenteeism.

(f) *Rough sports grounds* presented physical hazards at Sefula secondary school. The sports grounds were in poor condition. The netball and basketball courts were rough and with pot holes. The rough sports grounds had a potential of injuring pupils and staff using them. These playing grounds should be well maintained because playing outside is a vital part of childhood that helps pupils to develop their physical strength, coordination and balance. Sandseter *et al* (2011) also support the importance of play grounds for children's development, learning, mental health, and physical health, including physical activity and healthy weights. It can also provide opportunities for children to learn and develop. To support these broad learning outcomes, sports grounds should be safe, free, quiet, social, imaginative, creative, exploratory and natural way. However, sports grounds at Sefula Secondary School were not safe and secure enough for pupils and staff. The football ground had a lot of stones, netball and volleyball pitches were rough. This could interfere with play among pupils as they could sustain injuries.

(g) *Dilapidated infrastructure* was mentioned in interviews as a source of physical hazards at Sefula Secondary School. Dilapidated infrastructure instils fear as they may collapse on people and other school property. The school had very old infrastructure that posed dangers of collapse. This could be why dilapidated infrastructure received high response rate as a source of physical hazards. Dilapidated school infrastructure could disturb teaching and learning in that pupils and teachers could pay more attention to their personal safety than concentrate on learning. This is supported by Trump (2008) who warns that if learners do not feel safe to learn and teachers do not feel safe to teach, the focus shifts from academic tasks to discipline and personal safety. Dilapidated infrastructure at Sefula Secondary School makes the school not an inviting place. This is against the Invitational Educational Theory (Purkey, 2006) used in this study which states that a school should be an inviting place in terms of places, people, processes, policies and programmes.

(h) *Extreme temperatures* were noted by school stakeholders as a source of physical hazards at Sefula Secondary School. This meant that the school environment had low temperatures in winter and high temperatures in summer. Categorically, average temperatures were about 20 degrees Celsius. Average monthly temperatures varied by 9.2 degrees Celsius. In winter time, temperature records reached 23.4 degrees Celsius on average, falling to 10.5 degrees Celsius overnight. During summer, average high temperatures are around 26.1 degrees Celsius and average low temperatures are 17.1 degrees (Zambia Meteorological Department, 2015). Extremes of cold or heat could cause problems such as tiredness, vulnerability to infections or reduced capacity to work. Sefula area is usually cold in winter and warm in summer. The school environment had extreme temperatures as noted by the above readings. This was likely to expose people in the school environment who could not adjust to extreme temperatures. This was in correlation with a study done by Loyola University where it was noted that air temperature had an impact on memory ability. Using a computer generated memory test, 52 students randomly participated in memory tests in rooms with varying temperatures. Room temperatures were set at 72, 80 and 64 degrees F. The outcome showed that in the environment with temperatures of 80 or 64 degrees, memory was impacted negatively. Test scores were significantly higher in the classroom where the temperature was 72 degrees. This clearly shows that extreme temperatures could affect learning.

The foregoing argument is in correlation with Psych Central (2012) who argues that high levels of humidity which is usually accompanied by hot weather lowered scores on concentration while increasing sleepiness. A heat wave with high humidity can sometimes cause us to feel like we are lacking energy. Moreover, lower test scores, decrease in memory ability, lack of energy and losing focus are just a few symptoms of too hot or too cold temperature conditions in the classroom. Pupils and teachers suffer the same symptoms.

(i) *Automobiles* were identified as a source of physical hazards at Sefula Secondary School. There was a gravel road that passed through the school. Vehicles passed through the school without any control of speed, either by speed limit or by speed hump. This exposed people within the school environment to risks of accidents. This is in correlation WHO (2010) who noted that schools located near busy roads have increased risks of road traffic injuries

and deaths. These automobiles also presented noise pollution to the school environment. This noise had potential to disturb learning environment as pupils and staff would lose concentration. This is in agreement with Berglund and Lindvall (1995) and the Institute for Environment and Health (1997) who argue that that noise has a detrimental effect upon the learning and performance of primary school children, and that the older children in this age group are more affected than the younger children. Activities affected by noise among pupils include memory, reading, motivation, and attention (Bronzaft 1981; Cohen *et al.* 1981; Hygge *et al.* 1996; Berget *al.* 1996; Maxwell & Evans 2000; Lundquist *et al.* 2000; Haines *et al.* 2002; Clark *et al.* 2006).

(j) *Furniture*: The other source of physical hazards identified in school was furniture according to stakeholders of Sefula secondary school. The school stocked a good number of desks, chairs and tables in classrooms and offices. All these are sources of physical hazards. If a pupil or a member of staff stumbled on furniture, it could cause an injury to the victim. This is correlating with a study done by Victorian Injury Surveillance Unit (2011). In this study, the focus was on child falls as this is the largest and most persistent cause of injury to children in Victoria. The study found that there were 1,919 hospital admissions for falls involving chairs, beds, tables and other furniture over the 3-year study period 2010/11 to 2012/13, an average of 640 admissions per year. The majority of these cases involved chairs (43%) and beds (38%), with tables involved in a further 11% of hospitalizations.

(k) *Play equipment* was noted as a source of physical hazards at Sefula Secondary School. The school had a good number of playground equipment mainly for sports. The school had equipment for field and track events such as javelin spears, shot putt equipment and so on. All these could be sources of injuries to pupils especially if not well used. While ensuring that the safety of playground equipment will mitigate the dangers they pose to pupils, the protection is only partial if safe behaviours and practices are ignored. Specifically, pupils could be monitored to never misuse playground equipment. This is in agreement with Howard *et al.* (2005) who argued that removing and replacing unsafe equipment is an effective strategy for preventing playground injuries among pupils.

(l) *Uneven floor surfaces* were noted as a source of physical hazards at Sefula secondary school. In most classrooms, offices and dormitories, floor surfaces were very uneven. They

were pot holes and cracks. This could lead to slip, strip and fall hazards among pupils and staff using these rooms.

#### **(vi) Psychosocial Hazards**

According to Work Safe Alberta Occupational Health and Safety Teacher Resources studies (2012) a psychological hazard is any hazard that affects the mental well-being or mental health of the worker and may have physical effects by overwhelming the individuals' coping mechanisms and impacting the workers ability to work in a healthy and safe manner. The hazards generally are not from physical things that you can see or smell. Rather, many of these hazards come about as a result of interactions with others. In some cases, the hazard is brought into the school environment from the home. There are often no obvious outward signs of the effects of exposure and the methods to control these hazards are somewhat different than methods used to control other traditional workplace hazards.

At Sefula Secondary School, the following psychosocial hazards were noted according to participants:

(a)*Fatigue* was noted as a source of psychosocial hazards in school. This was mainly among pupils and staff. Pupils and staff were involved in a number of activities in school apart from the usual learning and teaching. Most teachers had big workloads and auxiliary staff also had overwhelming workloads. This usually left members of staff 'worn out' and tired. Fatigue cannot be easily measured so it is difficult to pinpoint its effect on workplace incidents. However, Work Safe Alberta Occupational Health and Safety Teacher Resources studies (2012) report the following potential effects of fatigue that were also confirmed by staff and pupils at Sefula Secondary School as:

- reduced decision-making ability
- reduced ability to do complex planning
- reduced communication skills
- poor concentration
- reduced productivity
- reduced attention and vigilance
- reduced ability to handle stress on the job
- increased reaction time, both in thought and resulting action

- loss of memory or the ability to recall details
- failure to respond to changes in surroundings or information provided
- increased forgetfulness
- increased errors in judgement

(b) *Stress* was noted as one of the psychosocial hazards experienced at Sefula Secondary School. This meant that it was highly experienced by pupils and staff. Stress among pupils and staff is the harmful physical and emotional responses that can happen when there is a conflict between job demands and the amount of control staff and pupils have over meeting these demands. In general, the combination of high demands in a job and a low amount of control over the situation can lead to negative stress.

According to key stakeholders at Sefula Secondary School, situations that caused stress among pupils and staff were as follows:

- meeting deadlines for given tasks by teachers
- lack of training for a new job or task
- lack of time to do work
- lack of control of job tasks
- job change
- working with difficult colleagues or clients

(c) *Bullying* was noted by stakeholders as a source of psychosocial hazard. In a school environment, bullying is usually seen as acts or verbal comments that could mentally hurt or isolate a person. Sometimes, bullying can involve negative physical contact as well. Bullying usually involves repeated incidents or a pattern of behaviour that is intended to intimidate, offend, degrade or humiliate a particular person or group of people. It has also been described as the assertion of power through aggression. At Sefula Secondary School bullying was mainly among pupils, especially newly enrolled grades eight and ten. According to Work Safe Alberta Occupational Health and Safety Teacher Resources studies (2012) bullying among pupils and staff affects the overall safety climate of a school and may contribute to:

- increased absenteeism among pupils
- increased stress among teachers and pupils
- increased risks for incidents

- decreased productivity and motivation
- decreased morale
- reduced school corporate image and customer confidence
- poor customer service

(d) *Violence and abuse* was also noted as a source of psychosocial hazards at Sefula secondary school. Violence that occurs in schools or is work related means “the threatened, attempted or actual conduct of a person that causes or is likely to cause physical injury.” The potential for violence in a school must be assessed just as any other workplace hazard. However, violence and abuse was not common at Sefula Secondary as can be noted from the low response rate. This could be because Sefula is a Christian school. Pupils and staff receive Christian morals and values related to loving one another.

Work Safe Alberta Occupational Health and Safety Teacher Resources studies (2012) explain that if violence in school is identified as an existing or potential hazard, the following can be done:

- develop policies and procedures for controlling violence in school
- train staff and pupils in recognition and response to potential workplace violence and the policies and procedures in place
- advise workers to consult a health professional if exposed to or injured

### ***6.3 Ideas and practices of Safety and Health at Sefula secondary school***

The second objective of this study was to establish ideas and practises of safety and health held by sampled participants at Sefula secondary school, herein used as a case study. This section, therefore, discusses ideas and practises of sampled participants in relation to safety and health issues at Sefula secondary school.

#### **6.3.1 Safety and Health measures put in place at Sefula Secondary School**

The study sought to explore safety and health measures that the school had put in place then. This assisted this study in finding out what the missing safety and health measures were. According to stakeholders, safety and health measures used at Sefula Secondary School were as follows:



(a) *Security lighting*: One of safety and health measures put in place by the school was installation of security lights in and around school environment. At Sefula Secondary School, security lighting was often used as a preventive and corrective measure against intrusions or other criminal activity on a physical property. Security lighting is provided to aid in the detection of intruders, to deter intruders or in some cases simply to increase the feeling of safety within the school. External lighting at Sefula Secondary School was provided to illuminate pathways and car parking areas to enable people to see and move safely around the school grounds in dark hours. Benya (2001) also support this assertion by explaining that lighting in schools is provided to deny intruders the cover of darkness by illuminating their access routes and target areas thus making them visible to passers-by and neighbours.

(b) *Visitor's book*: Sefula Secondary School had a visitor's book. This visitor's book was used in keeping records of who visited the school, at what time and reasons for visiting. Most premises that have people coming in and out on regular basis such as a school will need to have a visitor's book. A visitor's book at Sefula Secondary School ensures that the administration know who is on the premises at any given time. It is very important for many health and safety reasons to know who is inside the school environment. Kirkburton middle school in United Kingdom has a visitor's policy (2011) which also recommends the use of school visitor's book to ensure that all people who do not normally come into school sign in following the official signing in procedure. This is very important in school settings where the safety of pupils and staff is of utmost importance to ensure people are not put in any danger by suspicious people entering the premises.

(c) *School rules*: One of the safety and health measures put in place by the school was school rules. Sefula Secondary School had rules and regulations followed by pupils and staff. When pupils follow school rules, it can lead to staying safe and focused. This is because school rules are a guide to good and acceptable behaviour among pupils and staff at Sefula Secondary School.

When pupils in school stay focused, they will most likely get a better education. Staying focused is probably not a written rule, but it is definitely a rule that teachers, administration and parents of Sefula Secondary School want their pupils to follow. Rules that pupils can follow to help stay focused include not talking in class unless told by a teacher or

supervisor. When a class is unsupervised pupils should work on class work and ask a friend or someone who is close for help if needed. This is agreement with Robert (2008) who notes that school rules are guidelines for actions and for the evaluation of actions in terms of good and bad, or right and wrong and therefore a part of moral or values education in school.

Sefula Secondary School used rules to maintain discipline. School rules play important role in ensuring that the pupils know how to behave and consequences of misbehaving. School rules are a useful guide to prevent any unwanted punishments and embarrassments among pupils.

At Sefula Secondary School, rules made pupils aware of what they are not supposed to do, bring or say inside to school or in public. If pupils are aware of the school rules, they will know how to behave and carry themselves so as not to become a disgrace to their school. Lastly, following school rules is extremely important for pupils of all ages in order to get a better education. Following rules can help students stay safe and focused all day.

(d) *Washing hands:* As a way of monitoring pupils', staff and visitors' health, the school had put in place a compulsory 'washing of hands' policy for all pupils and members of staff, especially after the use of sanitation infrastructure. The school has hand wash basins and soap situated near toilets and ablutions. This helped people in the school environment to stay healthy and safe against spread of diseases. This is supported by Bock (2012) who explains that good hand washing is the first line of defence against the spread of many illnesses from the common cold to more serious infections, such as meningitis, flu, hepatitis A and most types of infectious diarrhoea.

(e) *Preventive Maintenance System:* Sefula Secondary School practiced Preventive Maintenance System (PMS) in trying to keep the school safe and secure. At this school, maintenance of the features of the school's physical environment involved repair, replacement and general upkeep of physical features as found in the school's buildings, grounds and safety systems. This basically is in line with the broken window theory which states that a broken window left unrepaired will make a building look abandoned and will quickly attract vandals to break the other windows (Wilcox, Queensberry, Cabrera & Jones, 2004). Szuba and Young (2003) make the point that maintenance is concerned with ensuring safe conditions for facility users, be they pupils, teachers, parents or visitors.

Moreover, Organization of American States General Secretariat (1998) describes school maintenance as an organisational activity carried out by the school community in order to prolong the life expectancy of school buildings, its furniture and equipment.

Sefula Secondary School practiced Preventive Maintenance System (PMS). This is a situation where the pupils and auxiliary staff clean the school environment and do some repairs to some notable damaged property on compulsory basis in addition to the everyday cleaning duties. Classrooms are attended to on Fridays and dormitories on Saturday. This practice ensures that school environment, together with property is maintained and kept well and secure.

(f) *Night watchmen:* In order to enhance safety and security, the school employed night watchmen to take care or watch over school property and infrastructure mainly during night time. Watchmen play a vital role in constructing and maintaining a safe and peaceful environment at Sefula Secondary School, especially during night time. Watchmen play a major role in averting unpleasant events. Studies and surveys acknowledge the importance of watchmen in prevention of school crimes (Barry, 1991). Violence and crimes in schools are less likely to happen where there are watchmen monitoring the actions of the people at school. Even low rate crimes, such as swearing are less likely to occur in the presence of watchmen (Barry, 1991).

According to school stakeholders, watchmen at Sefula Secondary School patrolled school premises to detect any suspicious activity, monitor and guard the entrance, check every visitor, ensure that the school property is protected, investigate theft or any other crime cases, report any violations to the school authority, prevent violence of any kind, enforce the school laws and use physical force when needed.

(g) *Waste management:* In order to stay healthy, the school was involved in a number of ways of waste management. For example, the school was managing waste using rubbish pits and litter bins. This was meant to keep the school health and attractive. The school made sure that the accumulated waste was collected and managed in order to keep the aesthetic beauty of the environment. This made sure that waste never rots, no moulds and fungi. This also meant that breeding grounds for mosquitoes and other vectors were destroyed in an effort to keep the school safe and healthy. This was in correlation with the Invitational Education theory (Purkey, 1996) used in this study which states that the school

should be an inviting place in relation to programmes, processes, people, policies and places. Good waste management in school would definitely make the school inviting and attractive (Purkey, 1996).

(h) *School uniform*: Sefula Secondary School uses a uniform for pupils. Uniforms promote pupils' loyalty and reduce pupils' tendency to be violent because they are easily identified. At Sefula Secondary School, wearing of school uniforms by pupils is important for the following reasons:

School uniforms are made compulsory for all pupils since it help lessen social conflicts within the school. This is so as not all pupils can keep up with the latest trends in fashion. Pupils that cannot move with fashion are likely to become a subject of ridicule and mockery because other pupils may see them as outcasts who do not fit in. this may badly affect pupils' self-esteem and can give rise to much insecurity. But with school uniform, incidents like this can be prevented.

With school uniform, pupils would have a sense of oneness and it would likewise enhance school loyalty. Wearing of school uniform is really important for it gives pupils the feeling that they all belong to one community.

School uniforms lessen pupils' clothing expenses for their day to day use. It is also beneficial for parents for it enables them to save extra cash. Just one time spending for school uniforms and that's it. Whereas, if parents have to spend for latest fashion clothes for their children's day to day attire in school, it can cost them a lot of money.

School uniform promotes effective learning for all pupils. Pupils' concentration will be focused more on their education rather than their wardrobes. If pupils are allowed to wear civilian clothes, they will be more eager, concerned and excited on what clothes to wear to make them stand out at school. This will also distract their learning process for their minds will be occupied with the thought of whether their opposite sex will admire the way they dress up. Thus, school uniform is important for it creates an effective learning atmosphere.

The foregoing importance of school uniform at Sefula Secondary is in correlation with Elisabetta and Imberman (2010) who observed that school uniforms potentially provide direct improvements in safety by making it easy to identify unauthorized visitors to a school, preventing the use of gang colours and insignia and reducing theft since pupils no

longer bring expensive clothing items to school. Stanley (1996) also noted that uniforms may instil respect for authority in pupils which, in turn, could improve behaviour and reduce classroom disruptions.

(i) *Roll call for pupils:* At Sefula Secondary School, roll call is conducted for pupils at specified times. This was done in classrooms, assemblies and in dormitories. This was meant to find out which pupil is missing and establish reasons for missing. This helped in making sure that each pupil is conscious of time and be found in the right place at right time. This kept pupils safe and secure. The foregoing is in correlation with the Sydney High school (2011) reasons for conducting pupil roll call as follows:

- to support and encourage regular participation and learning
- to foster positive relationship building
- to simplify and improve communication with the school
- to give you a first contact point for any queries or concerns you may have.

(j) *Burglar proofing doors and windows:* One of the safety measures put in place at Sefula Secondary School was installation of burglar bars on windows and security gates on doors. These were basic security measures that aided in preventing and reducing thefts occurring on school premises. Most doors and windows on the school premises were fitted with burglar bars and security gates. This was done to make access into a room or building more challenging and difficult for possible intruders. The doors and windows at the school were burglar proofed to ensure control of entry. During times when classrooms and offices were not used; like at night, the doors and windows security is enhanced with burglar proofing. This prevented intruders from entering or breaking into offices and classrooms. This argument is supported by UNICEF (2002) who explains that New Owerri primary school in Nigeria helped beef up security in school by burglar-proofing doors and windows.

(k) *Pupil dormitory guards:* Sefula Secondary is a boarding school. The school conducted a compulsory evening study for all pupils from nineteen (19) hours to twenty one (21) hours every day. During evening studies, some pupils were left to study from dormitories to act as guards, also watching over other pupils' property in dormitories. This enhanced safety and security for pupils' property at dormitories.

### 6.3.2 Safety and Health Concerns at Sefula Secondary School

After finding out safety and health measures the school had put in place, this study sought to investigate safety and health concerns that the school has been facing. This helped in finding out the exact issues that the school lacked and suggests sustainable mitigation safety and health measures. Safety and health concerns at Sefula Secondary School as noted by participants are discussed below:

*(a) Poor sanitary conditions:* Participants at Sefula Secondary School were concerned with poor sanitary conditions. The school's poor sanitary condition was also reported by Zambia watchdog, an online media in 2014. The school had very few functioning showers and toilets at the dormitories and classes at the time this study was conducted. According to Zambia Watchdog (2014) pupils on a daily basis answered the call of nature in the nearby bushes which had been contaminated with faecal matter. In such case scenario, any outbreak of cholera, dysentery or any diarrheal disease could take lives of pupils and staff. A boarding school is supposed to have at least minimum standards of water and sanitation, which was not the case for Sefula. Even if water was there the toilets were blocked. As observed by Zambia Watchdog (2014) probably, the toilets functioned some good three to four years ago.

Providing good sanitation to people of Sefula Secondary School is important because safe and clean water is good for people's health and dignity. This is in agreement with Baghri and Wilson (2004:7) who argue that safe water and environmental sanitation services, that is, waste facilities are vital for people's dignity and health and are especially important in ensuring the healthy development of children. This is also supported by UNICEF (1998) stating that good organisation of cleaning and maintenance of the water and sanitation facilities in schools is of the utmost importance mainly because badly maintained sanitation facilities often cause a safety and health risk to pupils, members of staff and others. Poor sanitary conditions were also a concern observed by UNICEF (1998) in a survey carried out in Indian schools. According to the results of this survey, about half of the ailments found in Indian schools are related to insanitary conditions and lack of personal hygiene.

*(b) Bad company:* Bad Company simply refers to spending time with people who are not morally good. These could be friends or other school mates in this context. Bad company

can be said to be having a set of immoral friends and taking after them. Having a bad company can occur in different ways, depending on what you do most, where you are and your activities in such a place like school. Parents at Sefula secondary school were worried about the type of friends that their children would be spending time with in school because they could have an influence on behaviour and choices made. Some friends could be misleading whilst others could be of good morals and make better informed decisions. The parents were concerned that their children could fall prey to bad companies and then lose interest in studies. This is because bad friends in schools do not encourage a person to take studies seriously. All they could do is either teach one how to drink beer, smoke cigarettes or become a prostitute, like for girls. Ndakwa (2013) also noted that there are some students who influence others to cause chaos and this happens when students meet with other students with different behaviours that negatively influence them.

Parents were also concerned that bad company in school could lead their girl children to get pregnant and at the same time contract HIV and AIDS and a boy could become a drunkard and ruin his life. Oibrahim (2016) also noted that bad company in schools could make a pupil arrogant towards the school authority and parents. Such pupils could be breaking school rules and regulations in the sense that they would be coming late to class, fighting school mates for unreasonable issues and be rude to teachers in the school. The parents were concerned that this kind of scenario could affect their children's education attainment. This is in agreement with Lubinda (2001) who analysed the problems related to bad company as follows:

*'Likalibe zeng'ata liipumanela limba za mwa bucwani. Milwalo yeo, yetiswa ki butanya, mane fokung'wi ifumanwa ki bani babasali mwa ndea, babasautiwa mwa malapa a bashemi babona ili nto ye bonisa kashwau kakatuna kwa bashemi...'*

(Lubinda, 2001: 29)

Translated as follows:

*'Many young girls have unwanted pregnancies. This is brought by prostitution, mostly by children who are still dependants and this is an indication of gross indiscipline.'*

(c) *Sefula stream*: Another concern that participants had was the potential threats and risks posed by Sefula stream to pupils, staff and the local community. This stream was used by

pupils and the local community in times of erratic water supply. Pupils used water from the stream for drinking, washing and swimming. However, water in the stream was exposed to many non-point sources of contamination. During the rainy season, for example, running water could be carrying dead animals and plants into the stream water. This running water could also be carrying faecal matter from the nearby bush and shrubs to contaminate water. To this effect, participants were worried that the Sefula stream water could be a source of waterborne diseases. This was because pupils, teachers and the local community were at risk of ingesting waterborne contaminants that could pose immediate threats to their health. This was because this water was used without disinfections. The foregoing concern was also noted by the World Health Organisation (2012) who explained that drinking unsafe water could lead to sickness and death and estimated that 801,000 children under 5 years old died of diarrhea each year that's more than 2,200 deaths a day.

Participants also were concerned that pupils and small children could drown in stream water, especially those that did not know how to swim. Moreover, parents also feared that the pupils at the stream, especially girls, could be vulnerable to attacks from unruly villagers and other intruders.

*(d) Sefula Forest:* Participants interviewed in this study expressed concerns on risks likely to be posed by the Sefula forest to pupils, staff and the entire school community. Participants noted that the Sefula forest could expose pupils and other children in Sefula community to certain risk factors. Some pupils could be hiding in this forest or nearby shrubs for different reasons including smoking, prostitution and mere socialisation. Because of poor state of sanitation infrastructure, some pupils also resorted to using the nearby bush to answer the call of nature (Zambia Watchdog, 2014). Participants were concerned that this scenario could expose pupils to dangers of external attacks. Pupils, staff and the local community could also be exposed to other hazards found in the biophysical environment like snakes, wasps, scorpions and other animals and stinging insects. Pupils who socialised from the bush or nearby shrubs also risked contact with plants and other natural materials, exposing them to risks of poisoning, allergic reactions and or skin irritation, nettle stings, cuts from thorns, pollen and so on. The foregoing explanation is supported by the Consortium of Local Education Authorities for the Provision of Science Services (CLEAPSS) at UCL Institute of Education (IOE, 2012) who noted that animals that are encountered in school environments and shrubs are unlikely to pose significant



risks to people. The risks include possibility of stings from bees and wasps. Caterpillars that are hairy may provoke an allergic reaction if handled. Injured birds and mammals that pupils find and pick up may carry disease or parasites.

(e) *Long distance to school:* Participants interviewed in this study noted that some pupils and teachers covered long distances to and from school. A good number of pupils walked from home to school and back. Some covered a long distance of about 8 kilometres from places like Mutwiwambwa. Due to lack of accommodation, some teachers were also commuting from Mongu town to Sefula secondary, which is distance of about 17 kilometres. Other pupils came from as far as the flood plain area and the forest areas. Participants expressed concern about such pupils and staff because there was a chance of being attacked on the way by criminals. There was also a chance of having accidents on the way in case of teachers commuting from Mongu town every day. The other concern was that such pupils and staff could reach the school tired and therefore fail to concentrate when in class. Long distance from school was also a source of absenteeism and drop out among pupils.

The participants' concern over long distance covered by pupils to school was also noted in a study conducted by Kisambiara (2016) in Rwanda on 'Performance: Why distance to school matters.' In this study, it was noted that long distances to school affect children's concentration. In the same study, Mutazihana, the head teacher of Kigali Parents School expressed concerns over long distances covered by pupils to school as follows:

*The lengthy footing of kids to school disorganises their concentration in class. Some of them arrive at school sweaty, stressed and exhausted both physically and psychologically, which compromises their performance. Minor things can distract children on their way to school. For instance, some will move along with their balls playing, while others can even fail to get to school in time due to unfriendly weather such as heavy rainfall*  
(The New Times, Rwanda, July, 06, 2016).

(f) *Floods:* Floods posed a concern to participants interviewed in this study. Sefula secondary school is located near the flood plains. Some pupils came from villages located in the flood plains. This meant that those settlements could be affected by periodic

flooding. Participants were concerned that the flooding situation could affect pupil's access to education. This was because the pupils had to be crossing rivers and wading in flood water from the plain to school and back home. This scenario posed risks to pupils. The risks included drowning, attacks from animals and contaminated water. Even shallow stream water could be sufficiently deep enough to sweep young children off. Flood waters also hide unseen dangers that could cause bodily injury to pupils. All these issues could threaten pupil's access to school and then affect their progression. These issues could lead to late coming, absenteeism and even drop-outs among pupils. This is in agreement with Mudavanhu (2014) who noted that floods in Muzarabani District of Zimbabwe caused loss of learning hours, outbreak of waterborne diseases, high absenteeism and low syllabus coverage leading to children's poor academic performance. These challenges compromised children's rights and access to quality education.

*(g) Religious Conversion:* Religious conversion is the adoption of a set of beliefs identified with one particular religious denomination to the exclusion of others. Thus "religious conversion" would describe the abandoning of adherence to one denomination and affiliating with another. This might be from one to another denomination within the same religion, for example, from Baptist to Catholic Christianity (Stark and Finke, 2000). Sefula secondary school is under the United Church of Zambia (UCZ). This means that the UCZ doctrine was highly pronounced in the general management of the school. In fact, most of staff in school management was mostly members of the UCZ church. Pupils response to and participation in collective worship is outstanding at Sefula, just like any other mission school. They take part in, lead and prepare prayer and liturgy for school assemblies. These acts of worship enabled pupils to develop their spirituality in a wide variety of ways. To this effect, some participants who were not Sunday worshippers or belonged to other religious denominations had a fear that their children would convert to UCZ at the end of their secondary education.

*(h) Extreme temperatures:* Participants in this study complained of extreme temperatures in Sefula environment. They noted that summers were very hot and winters very cold. This scenario affected some of the pupils and staff without proper physical adjustment mechanisms like blankets and warm clothes. Pupils, particularly very young ones, were likely to suffer most in extreme heat and cold because they could not know how to protect themselves. High temperatures in Sefula secondary school environment could cause

physical discomfort to pupils and staff and reduce their working ability. This is in agreement with National Union Teachers Health and Safety Briefing (2010) who explain that very high temperatures can affect the ability of teachers and pupils to concentrate and to work effectively and can cause physical discomfort and illness. If pupils and staff get too hot, they risk dizziness, fainting or even heat cramps (NUT Health and Safety Briefing, 2010). All these can affect pupils' attention during lessons and other outdoor activities. Some pupils who cross waters from the flood plains are affected even more in winter. During this time, water is also cold. Therefore, some pupils failed or feared to wade in cold waters on their way to school. This led to absenteeism and school drop outs in some cases.

(i) *Insecure dormitories*: Participants in this study expressed concerns over the state of insecurity of the dormitories, especially for boys. They complained that the dormitories for boys were very insecure in the sense that doors were not closing properly and windows were broken (See picture 6 and 7). This meant that pupils' property in dormitories were not safe and secure. Thieves and intruders could easily break into the dormitories and pick whatever they wanted. The lockers were broken and mostly not in use because they had no doors. This scenario forced pupils to carry lockable trunks from their homes to secure their property. In addition to this, the school mattresses and banker beds were in poor condition. The dormitories were also poorly lit, with cracks, decaying walls and sagging roofs. This scenario is in correlation with Mboto (2000) who observed that cracked, decaying walls, sagging roofs, blown-off roofs and bushy surroundings are common phenomenon in schools.

At the dormitories, electric sockets were also poorly secured as seen in picture 5 above. In spite of this, nothing much was done by the school to help the situation. This poor condition of dormitories frustrated pupils in boarding. The pupils worried of the safety and security of their property in dormitories whenever they were at classes or anywhere in and out of school. This scenario had the potential of reducing their attention span during lessons because they would still think of the safety and security of their property kept in insecure dormitories.

The foregoing concerns by participants in this study are in agreement with Jennifer (2011) who noted that student hostel accommodations in Nigeria are not only inadequate but some of the existing ones are dilapidated and constitute danger to the health of the students and

the entire college communities. Ogbonnaya and Ajagbonwu (1997) observed that this situation does not augur well for effective teaching and learning.

*(j) Poor quality of meals:* participants in this study bemoaned the poor quality of meals served to pupils in boarding. Pupils complained that their meals in boarding were not of good quality. The meals were not well prepared. Moreover, the meals lacked variety. They were being fed of same food stuffs. According to pupils interviewed in this study, the meals comprised mostly of beans and cabbage. They also complained that their meals were not even adequate. This meant that pupils had to look for food supplements. Pupils also expressed concerns on the poor state of the dining hall (See picture 8). Pupils explained that the dining hall was not only dirty but also had no chairs and tables. This meant that pupils had to be feeding whilst standing.

Pupils' concern on the quality of meals served to boarders was very genuine. This was because pupils needed a balanced diet at that stage of their physiological growth. Obviously, not having enough food to eat creates health risks for children. Alaimo et al. (2001) demonstrated that food insufficiency had a negative impact on a child's health. According to Alaimo et al. (2001) food insufficiency among children would bring issues that would impact their health through biological means such as reduced food intake, food quality or micronutrient deficiencies and psychological issues through increased stress, worry and feelings of deprivation. Sefula secondary school could significantly improve the amount and variety of healthy food choices for pupils and in turn make their pupils feel healthier and more motivated to learn.

*(k) Mosquito bites:* Sefula area had many mosquitoes according to the participants in this study. As indicted in chapter two of this study, the school is located near Sefula forest on north eastern side and flood plain on the south western part. Moreover, the school is located near Sefula stream with marsh that supported mosquito breeding. The topography of the school is such that there are many low lying places where water can easily be caught and held. This scenario brings about mosquito problems in Sefula area. Mosquitoes are a source of malaria to pupils, staff and Sefula local community. Malaria problems due to mosquitoes can affect pupils and teachers attendance to their school activities. This is because time is spent on treatment and rest other than attending lessons. The observation of reduced school attendance because of Malaria was also borne out from school visits in a

research conducted in Malawi by World Health Organisation (1999). In this study, it was deduced that education is clearly disrupted by pupils' and teachers' frequent absences due to Malaria. WHO (1999) also argue that such absences contribute to repetition and drop-out at Primary level; teacher supply, their knowledge, skills, or teaching methods.

*(1) Pupils with Special Educational Needs:* Sefula secondary school included the Visually Impaired (V.I) pupils and other special educational needs pupils in the main stream. According to Goldsmith and Goldsmith (1998), in order to provide children with special needs to feel comfortable, safe and controlled learning, it is important to create continuity in the environment so that they would have equal access to education like other normal students. Deterrent factors should be evaluated and taken into consideration so that pupils with special needs are not marginalised and ranked within education field and job opportunities in the future. According to Gargiulo (2006), a place where a pupil receives the education will actually affect the attitudes, achievement and social development. Thus the basic needs such as barrier-free facilities and a comfortable classroom and safety aspects should be taken into account for purposes of teaching and learning.

In relation to the foregoing, participants interviewed in this study expressed concerns on the plight and welfare of the visually impaired pupils and other disabled pupils and teachers. Their concern was that the school infrastructure was not suitable for the visually impaired pupils and other pupils with special educational needs. The classrooms, sanitation infrastructure, laboratories and dining hall were not very suitable for pupils with special educational needs. For example, the sandy soils in school environment could not be suitable for wheel chairs and the steps were too steep for the visually impaired. This scenario made learning a lot more challenging to the disabled pupils than the normal pupils.

An accessible school environment helps pupils with disabilities take part in school activities alongside their peers. School designs should ensure; a simple, clear layout that is easily understood by all pupils, staff and the community. This is in agreement with the Directorate of Inclusive Education in South Africa (2007) on guidelines to ensure quality education and support in special schools and special school resource centres to support inclusive education. According to the Directorate of Inclusive Education in South Africa (2007:14) "all classrooms should be accessible for the installation and manoeuvring of specialist equipment, material resources and learning support equipment for the highest

level of need possible at the school. Additional therapy rooms should be provided and equipped with the necessary specialised equipment. Safe storage must be provided, preferably close to teaching and learning spaces.” However, this was not the case with Sefula secondary school. The school facilities were not specially designed to help pupils with special needs.

*(n) Perimeter fencing:* Participants bemoaned lack of a fence around the school. The use of fencing to bolster school security often as part of broader safety plans has become a key issue in discussions of school safety. Fencing may be perceived as a critical factor in making Sefula Secondary School a safer place in the sense that it controls entry of people and automobiles in and out of the school. This is supported by the San Diego County Office of Education (2003) which asserts that fencing provides security for pupils and staff and is a great way to create territoriality.

However, Sefula Secondary School was not in fence. As noted by Hoffman (2013) campus school fencing does not only provide adequate protection, but also aesthetically pleasing. A fence would control entry in and out of school campus. A fence would also help watchmen account for people who enter school premises with or without permission. Moreover, a fence would also help control pupils’ within school bounds. Sefula Secondary School had problems in controlling entry in and out of school because of lack of fence.

*(0) Fire safety:* Participants in this study bemoaned lack of fire fighting equipment in school. They noted that the school did not have fire fighting equipment used to extinguish fires in emergencies. The school did not have equipment for fire fighting like fire extinguishers, hose reels, fire buckets, fire blankets and so on. This equipment could be located in the main circulation paths of the school for easy access in times of emergencies. This is in agreement with the Florida Department of Education (FDoE, 1993) who recommend that fire fighting equipment should be located in main circulation paths of the school to help quench fires in case of an emergency. Xaba (2005) also concurs with the FDoE by saying that fire systems must be secured in appropriate locations, out of reach and yet accessible for use in the school environments. However, Sefula Secondary lacked fire fighting equipment. This lack of fire fighting equipment posed a risk to school infrastructure in case of a fire in school. The school also had no fire plan at all. The office,

classrooms and dormitories had no fire fighting equipment. This was noted as a safety concern by participants.

*(p) Poor state of furniture:* Participants bemoaned poor state of furniture in school, especially classrooms. They complained that desks and chairs were broken and not enough for all pupils and staff. Some pupils were sitting three on a single desk. Moreover, the desks and chairs were not suitable for big pupils. This affected their comfort throughout their learning sessions. The pupil and staff explained that they experienced back pains and discomfort because of the poor posture dictated by furniture. The compatibility between school furniture dimensions and students' anthropometric characteristics was also identified as a key factor for improving some students' physical responses in the research conducted by Castellucci, Arezes, Molenbroek, Bruin & Viviani in 2016. This research deduced that design characteristics such as high furniture, sit-stand furniture and tilt tables and seats also presented positive effects. This is supported by Dianat, Karimin, Hashemi and Bahrampour (2013) who note that classroom furniture is an important factor underlying the onset of musculoskeletal pain among school children, given that they remain in the sitting position for some 30% of the day for at least nine years. This scenario could also affect their attention to the teachers during lessons.

*(q) Waste management practices:* Participants in this study expressed concern over poor waste management practices in school. According to participants, the school also had poor housekeeping. Solid waste remained uncollected for a long time in school. Participants noted that the school only relied on rubbish pits to manage waste (See Picture 9). There were few litter bins at classrooms and dormitories to help manage solid waste. This concern was very genuine because waste that is not properly managed could be a serious health hazard to people in school and could lead to the spread of infectious diseases. Waste lying around in school could attract flies, rats and other creatures that in turn spread disease. This could lead to unhygienic conditions in school environment and thereby to a rise in the health problems. This concern is in agreement with Ana *et al.* (2011) who note that inappropriate solid waste management practices in schools in less-developed countries constitute one of the major factors leading to declining environmental health conditions.

*(r) Sports and play grounds:* According to Sharif (2014) play is the key to physical, mental, intellectual and social well being of children. Young children spend a reasonable

amount of time in school and play time is the most active part of their day. Therefore, school playground and school playtime are vitally important to children for their fun and relaxation as well as for their good health and wellbeing. Participants bemoaned poor quality of sports and play grounds in school. According to participants, the school football ground had plenty of stones that made it unfit for football games. The netball and basketball courts were also in poor conditions in the sense that they had cracks and pot holes. Cracks and pot holes could be a source of injuries to pupils, staff and community members (see Picture 10). The play grounds around the school also had tall grass with long tree branches. All this tempered with the much needed quality for pupils' play grounds. The injuries to pupils and staff due to poor sports grounds could lead to poor school attendance. The injured pupils and staff may want to seek medical treatment before they can attend classes. This is in agreement with Klervan (1988) who argue that excessive absence from school is associated with educational failure, particularly when children miss more than 11% of school days.

*(s) Road safety:* There is a road passing through the school from Mongu to Sefula market. According to participants, this road brought concerns with regards to safety and health of people in and around the school. The concern was that motorists, especially taxi and bus drivers were driving at high speed, forgetting that pupils, staff and community members were also using this road. Participants were concerned that these motorists could cause accidents along this road. Moreover, the quality of the road was poor because it was made of dusty gravel. This meant that vehicles and other automobiles raised dust along this road. This dust was also a source of respiratory infections to people around the school.

### **6.3.3 Challenges faced by Sefula Secondary School in safety and health management**

The challenges to effective safety and health management are key issues requiring attention if safety and health issues at Sefula Secondary School were to be effectively implemented and sustain a focus. Stakeholders at this school noted the following challenges to effective safety and health management: poor funding, little time, lack of training and orientation, poor communication, limited stakeholder understanding, differences in safety culture and poor leadership. Each of the components is described independently, but in reality and practice, they seem to be inextricably linked. The challenges to effective safety and health management at Sefula Secondary School as noted by stakeholders were as follows:



(a) *Poor funding*: The stakeholders noted that school received little funding from the government and the church. Therefore, managing safety and health at the school had considerable financial implications. This meant that the school had to make priorities in relation to little amounts of funds available. The school would rather spend money on more tangible things than on safety and security issues. The intangible nature of risk minimization and effective school safety adds to the financial burden and Sefula Secondary School management would often prefer to spend in more visible ways. Due to poor funding, the school opted to spend money on more tangible things like buying desks, chairs, food for pupils and reading materials, unlike spending limited resources on intangible things like security issues. This had affected management of safety and health issues at Sefula Secondary School. Poor funding as a challenge to effective school safety and health management was also noted by Srichai et al (2013) in some research carried out in schools in Thailand.

(b) *Limited time*: The other notable challenge to effective safety and health management at Sefula Secondary School was limited time. Managing safety and health required a significant investment in time by all stakeholders. This was set against a backdrop of existing time constraints faced by school leadership, staff teachers and pupils. Teachers had big workloads such as teaching and extracurricular activities. This big workload meant that pupils and staff were overwhelmed with work and therefore had little time to spend on safety and health issues. This lack or limited time as a constraint to safety and health management in school was also noted in a research conducted by Srichai et al (2013) in Thailand schools.

(c) *Lack of training and orientation*: Stakeholders interviewed indicated that they lacked technical knowhow in management of some of the safety and health issues in school. They noted that training of stakeholders in safety and health management was very important. This would empower stakeholders with the much needed safety skills and knowledge. For example, operating fire fighting equipment needed training and orientation which was lacking among teachers, pupils and other stakeholders. Therefore, this scenario posed a challenge in safety and health management at Sefula secondary school.

(d) *Poor communication*: Communicating safety issues throughout Sefula Secondary School environment and among all stakeholders was an important aspect of creating and managing a safe and healthy school. Such communication requires appropriate man-

agement and strategy to ensure the perception of safety and health is not one of burden, but a realization of its vital importance to all stakeholders. However, poor communication was noted as a barrier to effective safety and health management in the school. This was because information on safety and health issues was not disseminated to all stakeholders.

(e) *Limited stakeholder Understanding*: Effective school safety and health management requires a concerted effort of all school stakeholders. While some stakeholders like parents would be more willing to align themselves with school safety and health policy, others like auxiliary staff may not fully understand the justification for certain safety and health measures in school, or may feel it adds to their workload. This notion acted as a challenge to effective safety and health management at Sefula Secondary School.

(f) *Poor leadership structures*: Developing appropriate safety and health strategies and disseminating these throughout Sefula Secondary School required strong and committed leadership to promote safety and health and motivate all stakeholders in alignment with the safety and health strategy and policy. However, this was not evident at Sefula Secondary School. Stakeholders bemoaned lack of strong and committed leadership to handle safety and health issues in school.

#### **6.3.4 Participants' advice of Safety and Health issue at Sefula secondary school**

The Second objective of this study was “*to establish ideas and practices of safety and health held by participants of Sefula Secondary School*”. Participants at Sefula Secondary School were asked about the advice they would give to other stakeholders regarding safety, health and welfare associated with the school environment. This was because advice plays a major role in regulating safety behaviour of stakeholders at any workplace. Safety and health advices help stakeholders avoid certain injuries, near-misses and accidents in school environment. A well advised person will also avoid certain bad vices in school environment that may affect his or her life. The *Lozi* adage *Njimwetwa ka tafa, a fa in kateyu pwa* (the one advised does not die) and *kelezo ki mulyani* (Advice is medicine) summarise the importance of advice in keeping safe and health in *Lozi* societies. As participants gave their advice on school safety and health, their ideas and practices of safety and health were also highlighted. The participants' advice on safety and health issues at Sefula secondary school were as follows:

(a) *Poor sanitary conditions:* Participants acknowledged that the school had poor water supply. Therefore, they advised that pupils and staff could be storing enough water in drums and other containers for later use. They also advised that pupils and staff could use chlorine or boil water before drinking. Pupils and staff were also advised not to consume water from the Sefula stream without boiling it or treating it. With regards to erratic supply of water in sanitation infrastructure, teachers advised that the school could consider building pit latrines to be used as an alternative to water closets. This would help improve levels of hygiene in school because water supply was very poor. Moreover, participants advised that the school could provide health and hygiene education at Sefula secondary school in order to encourage habits of good hygiene. This was also observed by UNICEF (2008) who noted that the major challenge to reach the Millennium Development Goal for improved sanitation (MDG 7) was not merely technical or economic, but lied in raising awareness on preventable sanitation-related diseases, changing traditional views and encouraging habits for good hygiene. Education on health and hygiene at Sefula secondary school was vital to improving conditions of people's lives from childhood to adulthood. The importance of hygiene and sanitation education is also supported by Practical Action (2016) who put it as follows:

*Educating school Children on basic hygiene and sanitation is very important because most children are eager to learn and can therefore instil and promote positive behavioural change in other children. These children also have important roles in household chores related to hygiene and can therefore instil change within their families and communities. These children are also future parents who will pass on the good hygiene practices that they learn in school to their children.*

(b) *Bad company:* Participants interviewed in this study acknowledged that Sefula secondary school had a potential of socialising pupils in a wrong way. They had fears that their children would be involved in bad companies with other pupils, staff and members of local community. A popular adage says; *bad company corrupts good manners*. This means that keeping bad company in general can never bear any good fruit. It is even more devastating in a school environment. The Bible also teaches something about bad company. It says "Do not be misled: 'Bad company corrupts good character.'"1 Corinthians 15:33. The dangers inherent in this practice can assume a quite alarming

magnitude. The book of Proverbs, especially, describes a number of foolish behaviours to be avoided when seen in others: gossip and division (16:28), anger and violence (16:29), lying (12:22), greed (15:27), and lack of compassion (29:7). All these point to dangers of bad morals among people.

Parents interviewed advised their children to beware of bad company whilst at school. They advised children to choose friends carefully whilst at school because bad companies could lead to smoking, drugs, sexual activities and other bad vices. Bad companies could even affect educational attainment in children. This worry about bad company among pupils could be true in the sense that some parents claimed to have had noted some changes in behaviour in their children. This behaviour change could have been caused by bad companies in school. Ulene (2011) also noted something about the influence of friends at school. She noted that the influence that friends exert over one another as teenagers is clearly powerful and, far too often, undesirable. According to Ulene (2011) unhealthy behaviours can be almost contagious among children. Pupils whose friends are truants, smoke, drink or are drug addicts, for example, are more likely to indulge in these behaviours themselves. Aggressive, illegal or self-injurious behaviours also have a tendency to cluster among friend groups, as do concerns about body image and eating (Ulene, 2011).

Participants advised that pupils could carefully choose friends with good and acceptable morals according to society. They advised that the school rules could be used to control bad behaviours and conduct among pupils. More so, parents were encouraged to give advice on morality to their children before coming to school. The school was also advised to strengthen guidance and counselling among pupils in order to shape and bring about good morals.

*(c) Sefula Stream:* Participants in this study had concerns about potential threats posed by Sefula stream to pupils, staff and the local community. They noted that pupils could stray to Sefula stream in search of water during times of water scarcity. This practice could expose them to some unhealthy problems associated with contaminated water in Sefula stream. This stream also contained physical objects that could injure children. The water was also contaminated with other foreign particles washed by rain water from the shrubs and Sefula forest. This included faecal matter and other decomposed and solid waste.

Therefore, parents advised that the school could strengthen school rules to prohibit pupils from going to the stream. They also advised that pupils and staff could be boiling water from the stream before consuming it as it was a potential source of bacteria and some parasites. They also advised pupils not to swim in the stream because they could be injured by unseen physical objects in water or risk drowning, especially those with poor swimming orientation. Pupils were also advised to be in company of friends when going to the stream to avoid being attacked by criminals.

*(d) Sefula forest:* Participants in this study had concerns over the potential threats that could be posed by the shrubs and forest near the school. They noted that the forest and shrubs were a source of many biophysical hazards to pupils, staff and others in school environment. They explained that pupils were likely to use Sefula forest for socialisation and answering the call of nature, especially when there was no water in school. This practise could expose them to risks associated with wild animals and insects. These could include stings from bees, mosquitoes, scorpions and wasps among others. Caterpillars with hairy bodies could also provoke an allergic reaction if handled by the children in their socialization processes. Moreover, injured birds and mammals that pupils found and picked up could carry diseases or parasites. The parents also noted that the Sefula bush could be a hiding place for thieves and other criminals who could easily attack their children.

With these outlined threats, participants advised that the school administration could strengthen and enforce school rules that could keep pupils out of bounds if found in the shrubs and forest areas. They advised that pupils who were found in these areas could be punished by school authorities accordingly. They also suggested that the school authorities could be conducting roll call regularly to find out pupils who could have sneaked in the shrubs and forest.

*(e) Floods:* The study noted the threats posed by floods to the education ambition of pupils at Sefula secondary school. Some pupils at Sefula secondary school come from villages located in the flood plains. This meant that those pupils had to be crossing and wading in streams of water on their way to school and back home. This also meant that such pupils could be exposed to dangers associated with floods waters. The threats included drowning, delays in crossing and other health related risks of flood water. Therefore, participants interviewed advised that affected pupils should *omboka* (come out of water) to the villages

on the plateau. In case of pupils who could not *omboka* due to various reasons, participants advised that spacious dugout canoes be placed at strategic crossing points to help pupils. Those parents who were financially stable were advised to put their children in boarding as opposed to crossing and wading in flood waters every school day. Moreover, the participants also advised that bridges be built across the Sefula stream to help pupils, staff and the community cross with ease. The participants also advised that pupils, staff and the local community be provided with health related information, especially on water borne diseases caused by flood water. Subject experts could also be invited to school and hold seminars. Pupils, staff and the community were also advised to select the route not much affected by flood.

*(f) Religious Conversion:* Sefula secondary school was a grand aided school run by the United Church of Zambia (UCZ). Therefore, UCZ principles were highly pronounced in school. Some pupils and staff who were not members of the UCZ church were likely to be converted through socialisation. Therefore, some parents who were not UCZ had the fear that their children would convert to UCZ at the end of their secondary school education. In view of the foregoing, participants interviewed in this study advised that the school administration could allow pupils to exercise freedom of worship as opposed to exposing every pupil and staff to UCZ principles. This is in agreement with article 18 of the Universal Declaration of Human Rights which states that “Everyone has the right to freedom of thought, conscience and religion.” However, some parents noted that the school was not forcing pupils and staff to follow UCZ church doctrines and principles.

*(g) Extreme temperatures:* The indepth interviews in this study revealed that sefula seconadry school was exposed to extreme temperatures. Participants explained that summers were very hot and winters very cold. Therefore, they advised that pupils and staff could have more blankets and warm clothes in winter. They also suggested that the school could introduce T-shirts as part of uniform in summer and autumn instead of long sleeved shirts and neck tie. This could help pupils reduce sweating and increase their comfort in summer and autumn. Pupils also suggested that the school could improve ventilation in classrooms. Windows could be opened for free air circulation, for example. This is in agreement with the Health, Safety Executive’s approved Code of Practice (ACoP) on the 1992 Regulations which requires employers to take all reasonable steps to achieve a reasonably comfortable temperature for workplaces to be ventilated by a sufficient quantity

of fresh or purified air.

(h) *Insecure dormitories:* Participants expressed worry on insecurity of dormitories, especially for boys. The doors and windows were not closing properly. There were cracks on the walls and floors. Therefore, they suggested that the school administration could renovate the dormitories. The pupils suggested that the school could also buy lockers for pupils to put their property. They advised that the school could buy new beds and mattresses for pupils in boarding. The poor state of dormitories was also reported at Kenneth Kaunda Boarding school in Chinsali district of Muchinga province of Zambia (Lusaka Times, April 10, 2015). In this school, some of the classroom blocks turned into hostels had no bedding facilities such as bunkers and mattresses forcing pupils to sleep on the floor. Participants also advised that some pupils could be left to guard their property in dormitories during evening studies. Participants also suggested that the boys' dormitories could also be fenced, just like for the girls.

(i) *Poor quality of meals:* Pupils of Sefula secondary school had concerns on poor quality of food in boarding. Their worry was that the food provided to them was not adequate and also lacked the much needed nutritional value. This is in agreement with Luzindana, a consultant nutritionist at Amazon Nutrition and Reflexology Therapy, who said that students needed fatty foods capable of producing enough fatty acids vital in the process of brain growth and stability. Luzindana (2013) also argues that it is crucial to educate students, parents and school authorities about the values of nutritious foods to the growth and development of children in school.

The pupils interviewed suggested that the boarding master and teachers on duty could taste the food before it was served to pupils to ascertain the quality. Moreover, the food could be inspected for quality by health personnel. Food sold in streets and at Sefula market could also be inspected by health officers to make sure that it was clean and in good condition. The pupils also added that the dining hall, the kitchen and food storerooms should be kept clean and tidy, unlike the scenario then.

(j) *Mosquito bites:* Participants complained of mosquitoes in Sefula area. At Sefula secondary school, mosquito breeding mainly occurred in places with accumulations of water. These include surface drainage channels surrounding buildings and open playgrounds, gardens with potted plants and offices where flowers or plants are kept. To

avoid mosquitoes, participants advised that stagnant water found in school campus could be eliminated. This suggestion is in agreement with Anderson (2016) who argues that an essential component of mosquito management is the elimination of breeding sites. All mosquitoes need water on which to lay their eggs. Removing the stagnant water sources identified in school would diminish the mosquitoes. To this effect, participants advised that people in Sefula community could be sleeping under treated mosquito nets. They also recommended residual spraying of insecticides to prevent mosquitoes. Participants also advised that the school could plant more citrus trees to help repel mosquitoes.

*(k) Pupils with Special Educational needs:* The pupils interviewed expressed concerns on poor learning spaces for the visually impaired and other disabled children. To this effect, they suggested that the school could equip the Resource Room for the Visually Impaired pupils with special facilities to enable them learn properly. Pupils also suggested that the pupils with visual impairments needed glasses and magnifiers to improve their vision. They also needed voice activated computers. This was also suggested by Gavin (2016) who noted that students with visual impairments needed the following:

- Seating accommodations to help them see you or whiteboards, blackboards, overhead displays.
- glasses, magnifiers, or use extra lighting for class work
- require large printed handout materials or audio books for reading
- need voice-activated computers or other assistive technology

Participants also suggested that the disabled pupils should be shown love, care, trust and respect so that they feel accepted in society. It was also suggested that such pupils could be regularly counseled and guided to help them in career choice and suit in society.

*(l) Perimeter fencing:* Participants bemoaned lack of a fence around the school. Therefore, they advised that the school be fenced to control entry in and out. Fencing could also help the administration to keep pupils and staff within school bounds for safety reasons. As noted by Hoffman (2013) campus school fencing does not only provide adequate protection, but also aesthetically pleasing. Properly selected fencing presents several safety advantages. In particular; appropriate fencing supports the security enhancing principles of



the crime prevention through Environmental Design framework (Hoffman, 2013). Fencing Sefula secondary school also could help in defining land ownership.

*(m) Fire safety:* Fire safety in school refers to a set of practices intended to reduce the destruction caused by fire. Fire safety measures include those that are intended to prevent ignition of an uncontrolled fire, and those that are used to limit the development and effects of a fire after it starts. Threats to fire safety are commonly referred to as fire hazards. A fire hazard may include a situation that increases the likelihood of a fire or may impede escape in the event a fire occurs.

In-depth interviews with participants at Sefula secondary school brought out the fact that the school was ill prepared in terms of fire risks. According to teachers, Sefula secondary school could be vulnerable to fire risks because of poor housekeeping, faulty electrical installations and even Arson. The participants also observed that the school did not have fire fighting equipment in place. Therefore, they advised that the school administration could consider installing fire fighting equipment in classrooms, officers, kitchen and dormitories. This is in agreement with The Kenya Red Cross Society (KRCS) who observe that secondary schools are vulnerable to disasters because of lack of specialized training such as fire drills, lack of appropriate fire fighting equipment, lack of adequate resources, lack of systematic disaster mitigation and response mechanisms (Government of Kenya, 2008).

Participants interviewed in this study also advised that staff and pupils be trained and oriented on fire safety issues in and around the school. This could help impart fire safety awareness among stakeholders. According to Shibutse, China and Omuterema (2011) lack of knowledge and awareness of the risk factors reduce the level of fire disaster preparedness in institutions. This is in agreement with Omuterema (2009) study on 'Mega stores fire preparedness, response and mitigation' who found that ignorance and lack of appropriate training for staff on fire safety and response was a major contribution to fire tragedies. Participants also suggested that grass and tree branches around the school could be trimmed.

*(n) Poor state of furniture:* According to School Planning & Management/College Planning & Management Magazine (2012), the proper selection of school furniture and

equipment plays an important role in creating an effective, high performance learning environment. However, according to participants, the school had poor furniture, especially in classrooms, offices, dining hall and dormitories. They complained that desks, tables and chairs were broken and not enough for all pupils. They also complained that the desks and chairs were not suitable for big pupils. This affected their comfort throughout their learning sessions. Therefore, pupils advised that the school could buy more desks for classrooms. The pupils also suggested that the school could also repair the already available furniture using industrial arts section of the school. They also suggested that the school could buy tables and chairs for the dining hall as they were feeding whilst standing.

*(o) Waste management:* According to participants interviewed in this study, Sefula secondary school had poor waste management practices. The school mainly used rubbish pits to manage waste. Therefore, teachers advised that the school could buy litter bins to be installed around the school. This could help in solid waste management. Teachers also advised that the school could enforce school rules on litter bugs and punish would be offenders. Moreover, participants advised that pupils, staff and local community be educated on dangers of poor waste management in school. This would help raise awareness among stakeholders and be responsive to the health and safety needs of the school. This is in agreement with the study conducted by Liyanage, Gurusinghe, Herat and Tateda (2015) in Sri Lanka. In this study, it was concluded that raising people's awareness would play an important role in the reduction of solid waste.

Participants also advised that the school could get in agreement with the Mongu Municipal Council, Waste Management Unit, for collection of solid waste in school. This would reduce on the heaps and piles of solid waste in and around the school. Teachers also suggested that issues of waste management should involve all stakeholders in school, unlike leaving it in the hands of pupils and support staff. They advised that the school could develop a waste management programme that was sustainable from year to year by engaging all proximate stakeholders.

*(p) Sports and play grounds:* According to participants, the quality of school sports grounds and play grounds was poor. They noted that the sports grounds were of poor quality. The football ground had a lot of stones, the netball and basketball coats had cracks and pot holes. To this effect, advised that the school could renovate the basket ball coat,

netball ball court and other play grounds to avoid injuries and near misses among pupils using those facilities. The pupils advised that grass on playgrounds could also be trimmed and stones picked to avoid injuries to pupils and staff. This correlates with the Physical Education Department of the Hong Kong (2014:7) who suggests the following about sports grounds:

*Many sports injuries occur on playing fields. Regular maintenance helps keep them safe for use. Outdoor grass pitches, for example, should be mowed, watered and cleared of all foreign substances such as rocks, tin cans, etc. The surrounding of the playing field should not in any way heighten the possibility of an injury.*

The pupils interviewed in this study also advised that the school could trim the trees in and around the school to improve the quality of playgrounds and other interaction spaces in school.

(q) *Road safety*: According to Gopalakrishnan (2012) road traffic accidents have emerged as a major public health issue. Children are most at risk, especially in the morning and afternoon when they are walking and cycling to and from school. Participants also noted that people at Sefula secondary school were exposed to dangers of over speeding cars. This was because the road from Mongu to Sefula market was passing through the school. Therefore, they advised that the school in liaison with Road Development Agency could consider putting road humps along strategic portions of the road. They also advised that there could be road safety signs and speed limits in and around the school. These road safety signs could warn motorists about the visually impaired pupils at Sefula secondary school who could be crossing the road. They also agreed that the road could be watered to reduce dust. These pieces of advice were correlating with *Guidelines for Road Safety around schools* by Northern Territory Government (2011) who advised that children should always be taught to select safer places to cross the road, use designated crossings points, be supervised by adults whenever possible or use alternative footpath when available.

## **6.4 Summary**

In line with research objectives, the chapter discussed local safety and health issues surrounding Sefula Secondary School. The discussion was guided by the objectives, literature review, conceptual and theoretical frameworks. The study found that Sefula Secondary School faced safety and health challenges. Overall, results suggested that safety and health issues were a big concern at Sefula Secondary School. This poor safety and health status of the school required concerted effort from school stakeholders to address them. The next chapter addresses the conclusion and lessons that other schools can use to devise their own individualised safety and health manual. The next chapter also has suggestions for future research.

## **CHAPTER SEVEN: CONCLUSION AND RECOMMENDATIONS**

### **7.1. Overview**

This chapter presents the conclusion and recommendations drawn from the findings of the study. It also attempts to show that the questions raised in this research were adequately addressed and recommendations presented. The chapter endeavours to fill the gap that has been explicitly exposed regarding safety and health issues at Sefula Secondary School. It begins with a conclusion followed by the recommendations. This is followed by some suggestions on areas for future research and interventions. This is because some safety and health dilemmas revealed by this study might require further research and more academic debates.

### **7.2. Conclusion**

In line with the objectives of the study, the researcher concludes as follows: The findings of the study noted that different internal stakeholders of Sefula Secondary School held different meanings to the concepts of school safety and health. These variations attached to the meaning of school safety and health meant that each person could have been managing safety and health issues in a different way. This is because the understanding or definition of safety and health held by a person is critical in influencing practice.

This study also established that Sefula Secondary School had many safety and health hazards unique to the school. The study categorized the noted hazards into biological hazards, chemical hazards, mechanical hazards, ergonomical hazards, physical hazards and psychosocial hazards. All these hazards were noted to have influence in the general management of the school.

The study established that the school had been managing safety and health issues in some ways. For example, installation of security lighting, wearing of school uniform by pupils, employment of watchmen and use of school log book were among safety practices that the school put in place. The study also noted that the school lacked some notable safety and health measures in place. For example; lack of fencing, rough sports and playgrounds, poor sanitation and so on as noted in the study. The study also noted that the school faced challenges in safety and health management. These challenges were poor funding to the

school, time, poor safety culture and stakeholder misunderstanding among other challenges.

The study concluded that a school like Sefula secondary could benefit more from a localised safety and health manual because it is more responsive to the needs of that individual school as opposed to a generic manual prepared at national, provincial or district level. This is because a localised school safety manual dealt with specific safety and health issues inherent in at Sefula secondary school.

### **7.3. Recommendations**

This study recommends that school safety and health planning and management should be done by proximate stakeholders of individual schools by as opposed to receiving a plan from national, provincial or district levels. School safety and health should be locally planned by such stakeholders and locally practised by them in order to respond adequately to local school needs. This recommendation is based on the research finding that localised safety and health planning and management proves to be more responsive to the local needs of an individual school. When designing a localised school safety and health manual, this study recommends the following learnable principles or steps:

*(a) develop a school profile:* schools need to develop a school profile which should include a description of the school and the community covering the biophysical, social, economic as well as the political environment. All these dimensions of the environment need to be used in hazard identification.

*(b) identify hazards:* After developing and analysing the school profile, hazard identification is carried out in the school environment. The process of hazard identification should involve the proximate stakeholders of the school as opposed to outlying stakeholders located far from the school (e.g. those at district, provincial or national levels). Outlying stakeholders may, however, be consulted for ideas and input. These may include pupils, teachers, auxiliary staff, parents, education standard officers and health personnel. Depending on the location of the school, other stakeholders can be also involved. The process of hazard identification could be led by the school administration or any person appointed by the school. Identification of hazards should involve the following steps:

- Walk around the school to take note of hazards observable
- Find out from pupils, teachers, auxiliary staff, parents, Education Standard Officers and health personnel about potential sources of danger in the school environment.
- Read through school documents such as disciplinary minute book, log book, school rules and regulations and any other documents that can help in identifying potential sources of danger in school environment.

*(c) manage the identified hazards:* After identifying hazards in school environment, the proximate stakeholders can assess the risks or threats for each of the hazards identified. This can be done in a reflective sessions or focus group discussion. This process should also involve identification of people in school environment that may be at risk or threat due to safety and health concerns identified. The proximate stakeholders can come up with solutions to safety and health concerns (hazards) identified in their school environment.

*(d) develop a school safety and health manual:* The school safety and health manual is then devised. This safety and health manual may include the following components as shown in Appendix A:

- Safety and health concerns (hazards) raised by stakeholders
- Risks or threats that could be caused by safety and health concerns raised by stakeholders
- Stakeholders at risk of the safety and health concerns indentified in school environment
- Proposed solutions to safety and health concerns in school environment
- The stakeholders could also propose some roles or duties that each one could perform in order to keep their school safe and health.

#### **7.4. Reflections on the Proposed Manual**

The following main points were made by evaluators of the Manual:

- (a) The document is a true reflection of safety and health concerns at Sefula secondary school. It can help solve some of the problems faced by the school. However, sanitation issues at Sefula secondary school should be addressed separately.

- (b) The proposed manual will improve the standards of living for teachers, pupils and Sefula community at large. However, there is need to address the plight of Visually Impaired pupils more.
- (c) The suggested solutions need to be implemented with urgency as they are practical and achievable

Arising from the above comments, future researchers may consider the following:

- Safety and health issues for learners with Special Educational Needs at Sefula secondary school
- The role of Inclusive Approach in management of School Sanitation and Hygiene Education at Sefula secondary school

### **7.5. Reflections on the Research Process**

After my doctoral research topic was approved, I began researching on it through the reading of literature related to school safety and health, as well as the school safety manual development processes. Literature review became more exciting as I learned about details of school safety and health management from various perspectives. From the literature reviewed, I discovered a gap of information with regards to the previous research on school safety and health management. I realised that most of the previous effort at keeping schools safe and health did not address the concept of localisation. In that regard, I picked it up from there and proposed a more localised concept of school safety and health management that was going to be responsive to the needs of a particular school. I enjoyed doing this research and conducting interviews since I felt that, with this research, I was able to make a practical contribution to the new knowledge on school safety and health.

During the research process, I learnt certain things related to research methodology. This was because reality on the ground was different from some contents of my research proposal. For example, I made a relatively big sample size for my study. However, realities on the ground made me reach the saturation point earlier than I thought. The sample size changed from 60 to actually 30. This has taught me that saturation point is key in the determination of study sample for a case study. I also learned a lot of ethical issues since my study made me interact with people from different backgrounds. Additionally, working under this particular supervisor has given me the opportunity to develop a mentor/mentee relationship that will be very useful in my future academic duties.



This research process also exposed me to some challenges. For example, textbook knowledge on school safety and health sometimes interfered with realities I found in the real world of Sefula secondary school. This astrayed me somehow, but I finally came to realise that research is actually about realities on the ground as opposed to speculations. Overall, I feel that this has been both a valuable and enjoyable experience. It was a journey worthy taking and I now feel prepared and excited to undertake similar research projects in future.

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## **APPENDICES**

### **Appendix A: Proposed Safety and Health Manual for Sefula secondary school**

#### **UNIT ONE: INTRODUCTION**

School environments are not completely free from hazards although they are not comparable to mining and construction sites in terms of their hazardous nature. Sefula secondary school, in this case, was found to have a range of risks and hazards that needed proper management in order to make the school safe and healthy and to minimise the chances of staff, pupils and visitors being injured or harmed. But many schools leave safety and health issues to chance, a situation which this proposed manual sought to address. One of the ways of helping in safety and health management of Sefula secondary school environment is through the use of a Localized Safety and Health Manual. This proposed manual is both a guidance document and a toolkit to assist Sefula Secondary School in managing safety, health and the welfare of pupils, teachers, auxiliary staff, visitors and the local community. This resource could help guide Sefula secondary school in planning, organizing and managing a safe and healthy school environment.

The manual could also assist in defining safety and health problems persistent at Sefula Secondary School and what the most effective measures for securing school and making it a safer learning environment might be. Moreover, this proposed localized safety and health manual may help Sefula secondary school to:

- (a) re-orient local safety, health and welfare services currently provided by the school
- (b) improve stakeholder's personal and individual safety, health and security skills
- (c) develop supportive safety and health initiatives at Sefula secondary school
- (d) promote school-stakeholder relations in safety, health and welfare management

This proposed localized safety and health manual for Sefula secondary school is structured as follows:

**Unit One:** Introduction

**Unit Two:** Participants' safety and health concerns and proposed solutions

**Unit Three:** Roles and responsibilities of Sefula secondary school stakeholders



**Unit Four:** Evaluative comments from sampled participants at Sefula secondary school

## UNIT TWO: PARTICIPANTS' SAFETY AND HEALTH CONCERNS AND PROPOSED SOLUTIONS

This unit presents participants' safety and health concerns as well as those drawn from documents noted at Sefula secondary school or applied to it. The risks or threats as a result of the noted hazards are also accounted for. Stakeholders at risk are outlined. In order to heighten its acceptance in the area, some of the manual key terms have been translated into Lozi language which is the local language of Sefula. The participants' safety and health concerns are classified to suit a broad definition of 'Environment' as consisting of the natural (Bio-physical), economic as well as the social and political dimensions.

### Section A: Concerns in the Natural (Biophysical) Environment

This section presents participants' concerns in relation to threats and risks in the biophysical or natural environment of Sefula secondary school. This section also has proposed solutions to safety and health concerns raised by participants.

#### *Concerns in the Natural (Biophysical) Environment and proposed solutions*

Serial No.	Safety and health concerns	Risks or threats	Stakeholders at risk	Proposed solutions
1.	Poor sanitary conditions ( <i>Busafa, bunoi</i> )	<ul style="list-style-type: none"> <li>▪ Disease outbreaks</li> <li>▪ Deaths</li> </ul>	<ul style="list-style-type: none"> <li>▪ Pupils</li> <li>▪ Teachers</li> <li>▪ Visitors</li> <li>▪ Sefula community</li> </ul>	<ul style="list-style-type: none"> <li>▪ Use of chlorine to treat water</li> <li>▪ Boil water before consumption</li> <li>▪ Build pit latrines</li> <li>▪ Sink boreholes to ensure steady flow of water</li> <li>▪ Health and hygiene education</li> <li>▪ Improve the existing sanitation infrastructure</li> <li>▪ Carry out risk assessments on sanitation infrastructure</li> <li>▪ Introduce washing hands policy after using toilets</li> <li>▪ Use of personal protective equipment when cleaning sanitation infrastructure</li> </ul>
2.	Sefula stream ( <i>Liabwa la Sefula</i> )	<ul style="list-style-type: none"> <li>▪ Snake bites</li> <li>▪ Mosquito bites</li> <li>▪ Water snails</li> <li>▪ Drowning</li> <li>▪ Injury from</li> </ul>	<ul style="list-style-type: none"> <li>▪ Pupils</li> <li>▪ Teachers</li> <li>▪ Sefula community</li> <li>▪ Visitors</li> </ul>	<ul style="list-style-type: none"> <li>▪ Enforce school rules on out of bounds</li> <li>▪ Treat stream water with chlorine before consumption</li> <li>▪ Boil water before consumption</li> <li>▪ Sink bore holes to ensure steady flow of water</li> <li>▪ Sleeping under mosquito nets</li> </ul>

Serial No.	Safety and health concerns	Risks or threats	Stakeholders at risk	Proposed solutions
		<ul style="list-style-type: none"> <li>physical objects</li> <li>▪ Waterborne diseases</li> <li>▪ Attacks or disturbance from intruders</li> </ul>		<ul style="list-style-type: none"> <li>▪ Going to stream in company of friends</li> <li>▪ Good supervision of pupils to ensure sensible behaviour</li> </ul>
3.	Sefula forest ( <i>Mushitu wa Sefula</i> )	<ul style="list-style-type: none"> <li>▪ Snake bites</li> <li>▪ Caterpillars</li> <li>▪ Insect bites e.g. mosquitoes, wasps</li> <li>▪ Scorpions</li> <li>▪ Criminals attacks</li> <li>▪ Falling trees</li> <li>▪ Animals attacks</li> </ul>	<ul style="list-style-type: none"> <li>▪ Pupils</li> <li>▪ Teachers</li> <li>▪ Sefula community</li> </ul>	<ul style="list-style-type: none"> <li>▪ Enforce school rules on out of bounds</li> <li>▪ Guidance and counselling</li> <li>▪ Cutting and clearing shrubs in school premises</li> <li>▪ Sleeping under mosquito nets</li> <li>▪ Good supervision of pupils to ensure sensible behaviour</li> </ul>
4.	Floods ( <i>Muunda</i> )	<ul style="list-style-type: none"> <li>▪ Drowning</li> <li>▪ Waterborne diseases</li> <li>▪ Injury from physical objects</li> <li>▪ Falls from unstable bridges</li> <li>▪ Late coming</li> <li>▪ Absenteeism</li> <li>▪ Water animals attacks</li> <li>▪ Insect bites</li> <li>▪ Psychosocial disturbance</li> </ul>	<ul style="list-style-type: none"> <li>▪ Pupils</li> <li>▪ Teachers</li> <li>▪ Sefula community</li> </ul>	<ul style="list-style-type: none"> <li>▪ <i>Kuomboka</i> (come out of water) or relocating to the plateau or higher ground</li> <li>▪ Placement of dugout canoes at strategic ferry points</li> <li>▪ Sleeping under mosquito nets</li> <li>▪ Starting off early from homes to avoid delays</li> <li>▪ Walking in company of friends</li> <li>▪ Good supervision of pupils to ensure sensible behaviour</li> <li>▪ Construct bridges across the stream</li> </ul>
6.	Road safety ( <i>Silelezo ya fa mikwakwa</i> )	<ul style="list-style-type: none"> <li>▪ Injury</li> <li>▪ Death</li> <li>▪ Respiratory infections</li> <li>▪ Noise pollution</li> </ul>	<ul style="list-style-type: none"> <li>▪ Pupils</li> <li>▪ Teachers</li> <li>▪ Auxiliary</li> <li>▪ Visitors</li> <li>▪ Members of Sefula</li> </ul>	<ul style="list-style-type: none"> <li>▪ Put up road safety signs along the road in school</li> <li>▪ Put road humps on strategic places along the road</li> <li>▪ Road safety education to stakeholders</li> <li>▪ Improve road standards from gravel to bituminous</li> <li>▪ Guidance and counselling to pupils and staff</li> <li>▪ Divert the road away from school</li> </ul>

Serial No.	Safety and health concerns	Risks or threats	Stakeholders at risk	Proposed solutions
			community	<ul style="list-style-type: none"> <li>▪ Risk assess loading and offloading points in school</li> </ul>
7.	Fire safety ( <i>silelezo ya mulilo</i> )	<ul style="list-style-type: none"> <li>▪ Injury</li> <li>▪ Death</li> <li>▪ Loss of property</li> <li>▪ Loss of jobs</li> <li>▪ Loss of important documents</li> </ul>	<ul style="list-style-type: none"> <li>▪ Pupils</li> <li>▪ Teachers</li> <li>▪ Auxiliary staff</li> <li>▪ Visitors</li> <li>▪ Members of Sefula community</li> </ul>	<ul style="list-style-type: none"> <li>▪ First aider trained in burn treatment</li> <li>▪ Flammable fuel and equipment only used by trained competent staff</li> <li>▪ Teach fire drills to stakeholders</li> <li>▪ Training pupils and staff in fire safety management</li> <li>▪ Use signage to communicate fire hazards to people in school</li> <li>▪ Install fire fighting equipment in school, for example, fire extinguishers, fire hose reels, fire buckets, fire blankets etc</li> <li>▪ Coordinate with the local fire brigade</li> <li>▪ Improve the school house keeping</li> <li>▪ Make a periodic clean up of the school surroundings and keep grass and weeds under control</li> <li>▪ Use only approved containers for handling, storage and transport of flammable liquids within the school</li> <li>▪ Handle combustible and flammable materials properly</li> <li>▪ Manage sources of heat properly</li> <li>▪ Obtain a fire certificate for the school</li> <li>▪ Conduct fire risk assessments in school environments</li> </ul>
8.	Waste management ( <i>kamaiso ya manyalala, masila</i> )	<ul style="list-style-type: none"> <li>▪ Disease outbreaks</li> <li>▪ Injuries</li> <li>▪ Death</li> </ul>	<ul style="list-style-type: none"> <li>▪ Pupils</li> <li>▪ Teachers</li> <li>▪ Auxiliary staff</li> <li>▪ Visitors</li> <li>▪ Members of Sefula community</li> </ul>	<ul style="list-style-type: none"> <li>▪ Install litter bins in all strategic points in the school</li> <li>▪ All stakeholders be involved in waste management</li> <li>▪ Partner with Mongu Municipal Council in waste management</li> <li>▪ Sensitise stakeholders on waste management</li> <li>▪ Good supervision of pupils to ensure sensible behaviour</li> <li>▪ Carry out a school waste audit</li> <li>▪ Develop an action plan on how to tackle waste in school</li> </ul>

Serial No.	Safety and health concerns	Risks or threats	Stakeholders at risk	Proposed solutions
9.	Extreme Temperatures ( <i>Ku cisa ni ku bata hahulu</i> )	<ul style="list-style-type: none"> <li>Heat stroke</li> <li>Cold</li> <li>Sweating</li> <li>Tiredness</li> <li>Fatigue</li> <li>Loss of concentration</li> </ul>	<ul style="list-style-type: none"> <li>Pupils</li> <li>Teachers</li> <li>Auxiliary staff</li> <li>Visitors</li> <li>Members of Sefula community</li> </ul>	<ul style="list-style-type: none"> <li>Sleep in warm blankets at night in winter</li> <li>Have enough rest when it is hot</li> <li>Put on warm clothing in winter and lighter clothing in hot season</li> <li>Be indoors when it is cold</li> <li>Air condition the rooms</li> <li>Take hot beverages when it is cold</li> <li>Take cool drinks when it is hot</li> <li>Take temperature measurements daily and educate stakeholders on the dangers of extreme temperatures</li> <li>Liaise with the local meteorological station on weather forecasts so as to be informed all the time</li> <li>Pupils to use t-shirts in hot weather as part of uniform</li> </ul>
10.	Mosquito bites ( <i>ku lumwa kiMinang'i</i> )	<ul style="list-style-type: none"> <li>Malaria</li> <li>Inconveniences</li> <li>Death</li> <li>Absenteeism</li> </ul>		<ul style="list-style-type: none"> <li>Sleep under treated mosquito nets</li> <li>Malaria education</li> <li>Disinfecting stagnant water</li> <li>Proper waste management</li> <li>Keeping grass short</li> <li>Plant citrus trees</li> </ul>

(Source: Field data, 2018)

## Section B: Concerns in the Social Environment

This section presents participants concerns in social environment of the school and associated threats or risks to stakeholders. Solutions to concerns in social environment are also proposed.

### *Concerns in the Social Environment and proposed solutions*

Serial No.	Safety and health concerns	Risks or threats	Stakeholders at risk	Proposed solutions
1.	Bad company ( <i>saango sesi maswe</i> )	<ul style="list-style-type: none"> <li>▪ Beer drinking</li> <li>▪ Prostitution</li> <li>▪ Absenteeism</li> <li>▪ Drug abuse</li> <li>▪ Smoking</li> </ul>	<ul style="list-style-type: none"> <li>▪ Pupils</li> <li>▪ Teachers</li> </ul>	<ul style="list-style-type: none"> <li>▪ Enforcing school rules</li> <li>▪ Conduct roll call at regular intervals</li> <li>▪ Provide guidance and counselling to pupils and teachers</li> <li>▪ Use of breathalyzer</li> </ul>
2.	Loss of cultural identity ( <i>Nyaulu</i> )	<ul style="list-style-type: none"> <li>▪ Lack of social (cultural) identity</li> </ul>	<ul style="list-style-type: none"> <li>▪ Pupils</li> <li>▪ Teachers</li> <li>▪ Sefula community</li> </ul>	<ul style="list-style-type: none"> <li>▪ Culture education</li> <li>▪ Guidance and counselling</li> <li>▪ Use of local language in teaching and learning where possible</li> </ul>
3.	Religious Conversion ( <i>Ku cinca keleke</i> )	<ul style="list-style-type: none"> <li>▪ Change from other religious beliefs to UCZ</li> </ul>	<ul style="list-style-type: none"> <li>▪ Pupils</li> <li>▪ Teachers</li> <li>▪ Sefula community</li> </ul>	<ul style="list-style-type: none"> <li>▪ Allow freedom of worship</li> </ul>
4.	Child abuse and neglect ( <i>Ku sinya ni ku siloka banana</i> )	<ul style="list-style-type: none"> <li>▪ Mental disturbance</li> <li>▪ Neglect</li> <li>▪ Physical disorders</li> <li>▪ Absenteeism</li> <li>▪ Psychosocial disturbance</li> <li>▪</li> </ul>	<ul style="list-style-type: none"> <li>▪ Pupils</li> </ul>	<ul style="list-style-type: none"> <li>▪ Report cases of abuse to teachers, parents, school administration</li> <li>▪ Guidance and counselling</li> <li>▪ Enforce school rules and punish abusers</li> <li>▪ Child abuse education</li> <li>▪ Avoid discrimination and stigmatization</li> <li>▪ Love and respect for all stakeholders</li> </ul>
5.	Poor sports and play grounds ( <i>Mabapalelo ni lipatelo ze maswe</i> )	<ul style="list-style-type: none"> <li>▪ Injuries</li> <li>▪ Death</li> <li>▪ Respiratory infections</li> </ul>	<ul style="list-style-type: none"> <li>▪ Pupils</li> <li>▪ Teachers</li> <li>▪ Sefula Community</li> <li>▪ Visitors</li> </ul>	<ul style="list-style-type: none"> <li>▪ Risk assess sports grounds for potential hazards that may injure pupils, staff and visitors</li> <li>▪ Keep an eye on unsafe behaviour whilst pupils are playing</li> <li>▪ Renovate basket ball and netball courts</li> </ul>

Serial No.	Safety and health concerns	Risks or threats	Stakeholders at risk	Proposed solutions
				<ul style="list-style-type: none"> <li>▪ Choose age-appropriate play equipment for pupils</li> <li>▪ Dress appropriately for sports activities</li> <li>▪ Secure first aid kit in case of emergency</li> <li>▪ Pupils in sports grounds should be supervised all times</li> <li>▪ Renovate the floor in school hall for indoor games</li> <li>▪ Trim grass and tree branches in areas around sports and playgrounds</li> <li>▪ Plant grass in football ground which had small stones at the time of study</li> <li>▪ Uproot shrubs in the running track that may injure people</li> </ul>
6.	Long distance to school ( <i>Sikolo bu hule</i> )	<ul style="list-style-type: none"> <li>▪ Late coming</li> <li>▪ Attacks or disturbance from intruders</li> <li>▪ Attacks from animals</li> <li>▪ Absenteeism</li> <li>▪ Drop outs</li> </ul>	<ul style="list-style-type: none"> <li>▪ Pupils</li> <li>▪ Teachers</li> </ul>	<ul style="list-style-type: none"> <li>▪ Relocate to settlements near the school</li> <li>▪ Walking in company of friends</li> <li>▪ Starting off early to school and back home</li> <li>▪ Putting children in boarding for parents who can afford</li> <li>▪ Guidance and counselling</li> <li>▪ Be 'street wise'</li> <li>▪ Building houses for teachers</li> </ul>
7.	Poor quality meals ( <i>lico ze si ka apehiwa hande</i> )	<ul style="list-style-type: none"> <li>▪ Diseases outbreaks</li> <li>▪ Hunger</li> <li>▪ Poor nutritive value</li> </ul>	<ul style="list-style-type: none"> <li>▪ Pupils</li> <li>▪ Teachers</li> <li>▪ Cooks</li> </ul>	<ul style="list-style-type: none"> <li>▪ Provide a balanced diet to pupils</li> <li>▪ Health personnel to inspect food quality in boarding, streets and Sefula market</li> <li>▪ Employ qualified staff as cooks</li> <li>▪ Giving pupils enough food</li> <li>▪ Pupils to observe etiquette rules in dining</li> </ul>
8.	Special Educational Needs (SEN) ( <i>Litukelo za</i>	<ul style="list-style-type: none"> <li>▪ Neglect</li> <li>▪ Stigmatization</li> <li>▪ Discrimination</li> <li>▪ Absenteeism</li> <li>▪ Drop outs</li> </ul>	<ul style="list-style-type: none"> <li>▪ Pupils with SEN</li> <li>▪ Teachers with SEN</li> </ul>	<ul style="list-style-type: none"> <li>▪ Show love and respect to all pupils</li> <li>▪ Avoid stigma and discrimination</li> <li>▪ Install special facilities for Visually Impaired Pupils</li> <li>▪ Ensure a least restrictive environment for SEN pupils and staff</li> </ul>

Serial No.	Safety and health concerns	Risks or threats	Stakeholders at risk	Proposed solutions
	<i>bana ba sikolo ba lianga)</i>			<ul style="list-style-type: none"> <li>▪ Improve structural design to suit the visually impaired pupils</li> <li>▪ Guidance and counselling</li> </ul>
8.	Insecure dormitories ( <i>Malobalo a sina hande silelezo</i> )	<ul style="list-style-type: none"> <li>▪ Theft</li> <li>▪ Crime</li> <li>▪ Injuries</li> <li>▪ Respiratory infections</li> <li>▪ Insect bites</li> <li>▪ Animal attacks</li> </ul>	<ul style="list-style-type: none"> <li>▪ Pupils</li> </ul>	<ul style="list-style-type: none"> <li>▪ Renovate cracks and leaking roofs</li> <li>▪ Secure doors and windows</li> <li>▪ Buy new bunker beds and mattresses</li> <li>▪ Build a wall fence for boys dormitories</li> <li>▪ Improve housekeeping in dormitories</li> <li>▪ Night watchmen to patrol areas around dormitories</li> <li>▪ Install fire fighting equipment at dormitories</li> </ul>
9.	Poor state of furniture ( <i>Lipula ni litafule ze sinyehile</i> )	<ul style="list-style-type: none"> <li>▪ Injuries</li> <li>▪ Fatigue</li> </ul>	<ul style="list-style-type: none"> <li>▪ Pupils</li> <li>▪ Teachers</li> <li>▪ Auxiliary staff</li> <li>▪ Sefula community</li> <li>▪ Visitors</li> </ul>	<ul style="list-style-type: none"> <li>▪ Buy more furniture to cater for all pupils and staff</li> <li>▪ Repair broken chairs, desks and tables lying around the school</li> </ul>
10.	Lack of Perimeter fencing ( <i>Ku tokwa lukwakwa</i> )	<ul style="list-style-type: none"> <li>▪ Theft</li> <li>▪ Intrusion</li> <li>▪ Trespassing</li> <li>▪ Animal attacks</li> </ul>	<ul style="list-style-type: none"> <li>▪ Pupils</li> <li>▪ Teachers</li> <li>▪ Auxiliary staff</li> <li>▪ Sefula community</li> <li>▪ Visitors</li> </ul>	<ul style="list-style-type: none"> <li>▪ Build a fence to control entry in and out of school</li> </ul>
11.	Poor quality infrastructure ( <i>Miyaho ye sinyehile</i> )	<ul style="list-style-type: none"> <li>▪ Injuries</li> <li>▪ Death through collapse</li> <li>▪ Infections</li> </ul>	<ul style="list-style-type: none"> <li>▪ Pupils</li> <li>▪ Teachers</li> <li>▪ Auxiliary staff</li> <li>▪ Visitors</li> </ul>	<ul style="list-style-type: none"> <li>▪ Renovate dilapidated infrastructure in school</li> <li>▪ Clean classrooms, offices, dormitories and other school infrastructure</li> <li>▪ Build more classrooms and offices for pupils and staff</li> </ul>

(Source: Filed data, 2018)



### Section C: Concerns in the Economic Environment

This section presents participants concerns in relation to threats and risks experienced in the economic environment of Sefula secondary school. This section also has proposed solutions to safety and health concerns raised by participants in this study.

#### *Concerns in the Economic Environment and proposed solutions*

Serial No.	Safety and health concerns	Risks or threats	Stakeholders at risk	Proposed solutions
1.	Lack of sponsorship ( <i>ku tokwa mali a kulifa kwa sikolo</i> )	<ul style="list-style-type: none"> <li>▪ Neglect</li> <li>▪ Stigmatization</li> <li>▪ Discrimination</li> <li>▪ Absenteeism</li> <li>▪ Drop outs</li> <li>▪ Unsettled mind</li> </ul>	<ul style="list-style-type: none"> <li>▪ Pupils</li> <li>▪ Parents</li> </ul>	<ul style="list-style-type: none"> <li>▪ Introduce social welfare schemes to sponsor the underprivileged pupils</li> <li>▪ Introduce free education</li> <li>▪ Allow pupils to pay fees in instalments</li> <li>▪ Introduce bursary schemes to support underprivileged pupils</li> <li>▪ Introduce educational loans</li> <li>▪ Guidance and counselling</li> </ul>
2.	Illegal business in school ( <i>Litekiso ze sa lumelezwi</i> )	<ul style="list-style-type: none"> <li>▪ Loss of concentration in academics</li> <li>▪ Theft</li> <li>▪ Intrusion</li> <li>▪ Absenteeism</li> </ul>	<ul style="list-style-type: none"> <li>▪ Pupils</li> <li>▪ Teachers</li> <li>▪ Parents</li> </ul>	<ul style="list-style-type: none"> <li>▪ Strengthen school rules and regulations to prohibit illegal business in school</li> </ul>

(Source: Field data, 2018)

## Section D: Concerns in the Political Environment

This section presents participants concerns in relation to threats and risks in the political environment of Sefula secondary school. This section has also proposed solutions to safety and health concerns raised by participants in this study.

### *Concerns in the Political Environment and proposed solutions*

Serial No.	Safety and health concern	Risks or threats	Stakeholders at risk	Proposed solutions
1.	Bullying ( <i>Toliso</i> )	<ul style="list-style-type: none"> <li>▪ Violence</li> <li>▪ Humiliation</li> <li>▪ Suicide</li> <li>▪ Absenteeism</li> <li>▪ Drop outs</li> <li>▪ Positive development</li> </ul>	<ul style="list-style-type: none"> <li>▪ Pupils</li> <li>▪ Teachers</li> <li>▪ Sefula community</li> </ul>	<ul style="list-style-type: none"> <li>▪ Educate pupils, teachers, parents and the community about taking bullying seriously and how to recognize it.</li> <li>▪ Create opportunities for open dialogue with pupils, staff and the community about bullying.</li> <li>▪ Identify safe, secure and welcoming environments in school that promote inclusion and acceptance</li> <li>▪ Partner with others to take joint action in educating pupils, teachers, parents and community about bullying in school.</li> <li>▪ Identify and monitor places in school where most bullying happens</li> </ul>
2.	Conflict led by pupils (Ring-leaders) ( <i>Mifilifili ye zamaiswa ki bana ba sikolo</i> )	<ul style="list-style-type: none"> <li>▪ Violence</li> <li>▪ Suicide</li> <li>▪ Absenteeism</li> <li>▪ Drop outs</li> <li>▪ Suspension</li> <li>▪ Humiliation</li> <li>▪ Vandalism</li> </ul>	<ul style="list-style-type: none"> <li>▪ Pupils</li> <li>▪ Teachers</li> <li>▪ Sefula community</li> <li>▪ Parents</li> </ul>	<ul style="list-style-type: none"> <li>▪ Guidance and counselling</li> <li>▪ Strengthen school rules and regulations</li> <li>▪ Create opportunities for open dialogue with pupils, staff and the community about bullying.</li> <li>▪ Identify problems in school that lead to conflict</li> <li>▪ Teach pupils and staff skills in peace and conflict resolution</li> </ul>
3.	Influence from political parties on pupils ( <i>kususueza litaba za naha kwa bana ba sikolo</i> )	<ul style="list-style-type: none"> <li>▪ Violence, suicide</li> <li>▪ Absenteeism</li> <li>▪ Drop outs,</li> <li>▪ Suspension</li> <li>▪ Humiliation</li> <li>▪ Vandalism</li> </ul>	<ul style="list-style-type: none"> <li>▪ Pupils</li> <li>▪ Teachers</li> <li>▪ Sefula community</li> <li>▪ Parents</li> </ul>	<ul style="list-style-type: none"> <li>▪ Guidance and counselling</li> <li>▪ Strengthen school rules and regulations</li> <li>▪ Create a non-partisan school atmosphere</li> </ul>

(Source: Field data, 2018)

## **UNIT THREE: ROLES AND RESPONSIBILITIES OF STAKEHOLDERS AT SEFULA SECONDARY SCHOOL**

### **3.1 Introduction**

In order to successfully manage safety and health issues at Sefula secondary school, there is need for stakeholders to work together. All stakeholders have to contribute what they can for the smooth management of safety and health issues at Sefula secondary school. However, outlying stakeholders (e.g. former Sefula pupils, donors, concerned citizens etc) have not been included in this report. Local stakeholders at Sefula secondary school who are very cardinal in safety and health management of the school are the school head, teachers, auxiliary staff, pupils, parents, Education Standards Officers and the Environmental Health Technologists. Their proposed roles and responsibilities are outlined as follows:

### **3.2 Head Teachers' roles and responsibilities**

- Ensure internal organisation and management of the school in terms of day to day responsibility for safety and health matters
- Enforce health and safety rules and regulations
- Ensure adequate resources for health and safety are made available in school.
- Consult and advise staff, pupils, local community and visitors regarding health and safety requirements and arrangements for the school.
- Periodically conduct risk assessments and safety audits in school environment
- Help develop a school safety and health policy
- Maintain effective communications with all stakeholders and give clear information to teachers, pupils and visitors regarding the significant risks and threats in Sefula secondary school environment.
- Promote discussion and integration of health and safety considerations into the planning of all tasks and activities undertaken.
- Ensure that the pupils, teachers and auxiliary staff have appropriate training and orientation to deal with risks and threats in their areas of responsibility.

- Make sure that staff understand their responsibilities and know how to access support and advice to help them manage risks and threats in school environment responsibly

### **3.3 Teachers' roles**

- Take care of their own health and safety and that of others who may be affected by their practices in school and community.
- Monitor safety and health practices in school
- Teach pupils on recommended safety and health practices
- Observe and enforce school rules
- Carry out risk assessments and safety audits in school
- Report all observed risks and hazards to school administration
- Put on relevant Personal Protective Equipment (PPE) for certain tasks performed in school

### **3.4 Pupils' roles**

- Follow school rules and regulations
- Take reasonable care for their own health and safety and that of others who may be affected by their actions
- Keep school environment clean and tidy
- Seek guidance from teachers when doing unfamiliar work and activities
- Report all noted hazards and accidents to the teachers and school administration
- Participate in discussions on the management of work health and safety risks in school
- Wear appropriate personal protective equipment for the work being done

### **3.5 Parents' roles (Community roles)**

- Work hand in hand with other stakeholders in school safety and health planning and management
- Advise their children on best safety and health practices in school environment
- Report hazards noted in their community that may affect school safety and health
- Take care of their own health and safety and that of others in their community who may be affected by their actions

- Cooperate with the school by following laid down safety and health measures
- Stimulate the school-community safety culture by promoting discussion and integration of health and safety considerations into the planning of all tasks and activities undertaken.

### **3.6 Education Standards Officers' roles**

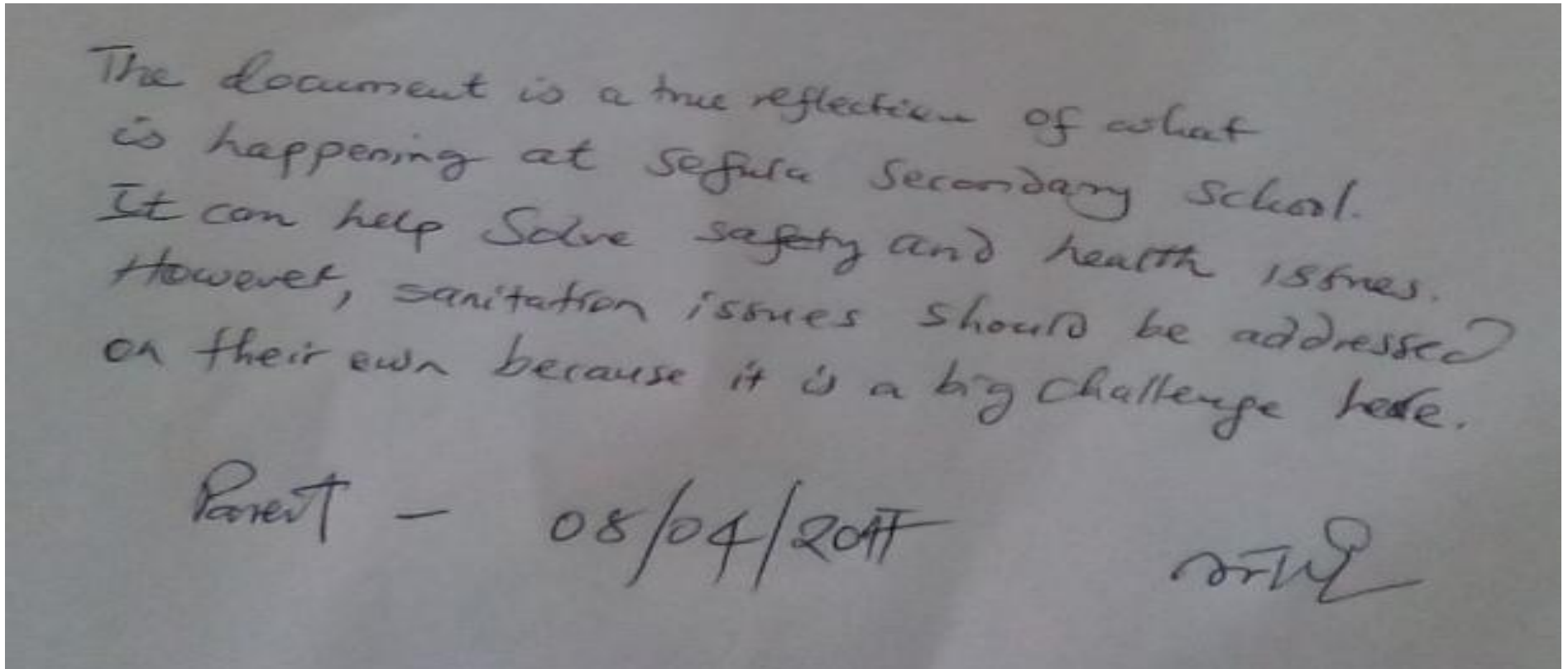
- To help the school develop safety and health policy by interpreting the Education Policy
- To carry out safety and health inspections in the school
- To monitor school safety and health activities
- To monitor and evaluate safety and health activities in the school
- To arrange for formal safety and health inspections to be carried out in school with the production of a written report
- To enforce school safety and health action plan

### **3.7 Environmental Health Technologists' (EHT) roles**

- To give technical advice to the school on status of school health
- To monitor local health practices in school
- To carry out health inspections in school
- To advise the school on best health and hygiene practices
- To educate stakeholders on best health practices

#### UNIT FOUR: EVALUATIVE COMMENTS FROM SOME PARTICIPANTS

After devising the manual, the researcher had a reflective session with some selected participants. This was meant to evaluate its applicability to Sefula secondary school environment, to collect more data on the topic as well as to authenticate the document. Convenient sampling was used to select participants who evaluated the manual. This was because other participants were not easily accessible during the time of such reflective sessions. The comments of selected participants are presented below.



The proposed manual will improve the standards of living for people at Sepulch Secondary School. The community will also benefit however, there is need to address the plight of the visually impaired more

Tee

10<sup>th</sup> April, 2017



#### Comments

The proposed localized safety and healthy manual for Sepulch Secondary School is a well thought proposal and the risk and threats are what is obtaining on the ground. The solutions given or suggest are practical and achievable.

Designation: Teacher

Date:

10-04-2017

Signature:



- Overall the safety and health manual is applicable and suitable for the school. If the proposed plans are implemented, regular secondary school will be a healthier and safer environment for both academic and non-academic activities.

Designation:

Date 18-05-17

Signature  
R.K.

The proposed model significantly addresses the health and safety issues and ~~now~~ it would be helpful if the proposed solutions must be implemented with urgency.

Teacher

17

20/03/17





Comments

It is an excellent proposal that will improve the standards of living for teachers, pupils and the Setula Community at large.

Designation: ~~By~~ Pupil

Date: 10<sup>th</sup> March, 17 Signature: *[Signature]*

## **Appendix B: Focus Group Interview Guide-Interview Schedule**

### **Section A: State of safety and health at Sefula secondary school**

1. Meaning of school safety

*Q. In your view, what do you understand by a safe school?*

2. Meaning of a healthy school

*Q. In your view, what do you understand by a healthy school?*

3. Importance of a safe and healthy school environment

*Q. Explain the importance of safety and health in school*

4. Dangers of an insecure and unhealthy school environment

*Q. What are the dangers of an insecure and unhealthy school?*

5. Safety and health hazards at Sefula Secondary School.

*Q. Mention and explain safety and health hazards inherent in Sefula Secondary School environment*

### **Section B: Ideas and practices of safety and health held by participants**

6. Safety and health measures used at Sefula Secondary School

*Q. What are the safety and health measures put in place at Sefula Secondary School?*

7. Safety and health concerns at Sefula Secondary School

*Q. What are the safety and health concerns/challenges faced at Sefula Secondary School?*

8. Challenges to effective safety and health management at Sefula Secondary School

*Q. What are the challenges to effective safety and health management at Sefula Secondary School?*

9. Participants' advise on management of Safety and Health issues at Sefula secondary school

*Q. What advise can you give to other stakeholders of Sefula Secondary School on how to manage safety and health?*

## Appendix C: School Health and Safety Observation Guide

Section 1: Building infrastructure				
		Yes	No	Comments
1.1	Are floors and walls in good condition?			
1.2	Are the classrooms and dormitories adequate for pupils?			
1.3	Is office space adequate for staff?			
1.4	Are doors and windows in good working order?			
1.5	Are facilities for pupils and teachers with disabilities appropriate?			
1.6	Do roofs appear secure?			
1.7	Are security systems appropriate?			

Section 2: Play grounds and sports grounds				
		Yes	No	Comments
2.1	Are play grounds in good condition?			
2.2	Do trees/branches appear safe?			
2.3	Are grass areas reasonably maintained?			
2.4	Are paths and playgrounds free from foreseeable hazards?			
2.5	Is there any perimeter fencing around the school?			

Section 3: Road Safety				
		Yes	No	Comments
3.1	Is there designated parking?			

3.2	Are there road safety signs?			
3.3	Are there loading/unloading bays?			
3.4	Is road quality appropriate?			
3.5	Are there road humps?			

Section 4: Temperature, Lighting & Ventilation				
		Yes	No	Comments
4.1	Can room temperature be maintained appropriately?			
4.2	Are there mechanisms for temperature regulation?			
4.3	Is ventilation adequate?			
4.4	Is lighting adequate?			
4.5	Is internal lighting adequate?			

Section 5: Food				
		Yes	No	Comments
5.1	Is food for pupils in boarding adequate?			
5.2	Is food of a balanced diet?			
5.3	Is food well stored and carefully prepared?			

Section 6: Welfare facilities				
		Yes	No	Comments
6.1	Are toilet facilities adequate?			
6.2	Are washing facilities available and adequate?			
6.3	Are the facilities adequately inspected, cleaned, ventilated and lit?			
6.4	Is water reticulation adequate?			
6.5	Are there appropriate facilities for pupils and teachers with disabilities?			

Section 7: Other Areas				
		Yes	No	Comments
7.1	Is furniture in good condition?			
7.2	Do office staffs have enough working space?			
7.3	Are all parts of the school maintained in a clean and tidy condition?			
7.4	Are there adequate facilities for the safe storage and disposal of waste?			
7.5	Is the Sefula stream posing any threats or risks to people in school and the community?			
7.6	Is the Sefula forest posing any threats or risks to people in school and the community?			
7.7	Are floods a hindrance to teaching and learning?			