AN ASSESSMENT OF FIRE EMERGENCY PREPAREDNESS AMONG PUBLIC UNIVERSITIES IN TANZANIA

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A DISSERTATION SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER OF SOCIAL WORK OF THE OPEN UNIVERSITY OF TANZANIA

2015

CERTIFICATION

The undersigned, certifies that she has read the entire work and hereby recommends for acceptance by The Open University of Tanzania a dissertation titled **"An Assessment of Fire Emergency Preparedness among Public Universities in Tanzania",** in partial fulfillment of the requirements for the degree of Master of Social Work of The Open University of Tanzania.

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Dr. Magreth Bushesha

(Supervisor)

…………………………………

Date

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DECLARATION

I, **Alexander Ndibalema**, do hereby declare that, this Dissertation is my own work and that it has never been submitted anywhere by any person in either a whole or part of it for the Master of Social Work Degree or in any other field or award related to this.

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Signature

………………………………………

Date

DEDICATION

This entire work is dedicated to my family with specific attention to my beloved wife Concepta Kokwesiga Wenceslaus, and my children Karen and Vanessa. I also dedicate this work to all social workers and academicians in other related disciplines who tirelessly work to ensure people, especially the vulnerable populations, realize their social well being.

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This Dissertation is one of the fulfillments of course requirements of Master of Social Work Degree. It has been accomplished through the collaborative work by the facilitators, supervisor, respondents from the selected population and the researcher.

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ABSTRACT

This study assessed the preparedness of fire emergency among public universities in Tanzania a case of the Open University of Tanzania and University of Dar es Salaam as a result of fire occurrences in different public institutions. The main focus was to assess the community awareness on fire outbreaks and safety responses, examine the programmes for fighting against fire outbreaks; examine availability and functioning of fire fighting gears at the study areas. The study adopted a phenomenological qualitative research design which focused on cross-sectional descriptive approach. Both purposive and random sampling techniques were applied whereby 76 respondents were selected from the facility users. Questionnaires, interviews, FGDs and personal observation were used for the collection of data. Data collected were quantitatively and qualitatively analyzed using SPSS and QDA Miner 4 Lite software respectively. It was finally revealed from the study that fire emergency preparedness was low among the selected universities. This comes as a result of inadequacy of trainings for facility users, community unawareness on the uses of fire fighting gears, lack of enlightenments for creating community awareness and cautions on fire incidences and poor fire outbreaks management. The study recommended the improvement of integrative fire management preparedness strategies, Public Fire Disaster Awareness (PFDA); the reviews of the laws governing fire fighting and safety and policy formulation to be put into consideration to fight against fire outbreaks.

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LIST OF ABBREVIATIONS

DA   Disaster Awareness

DMD   Disaster Management Department

FGD   Focus Group Discussion

GDP   Gross Domestic Product

IFRC   International Federation of Red Cross and Red Crescent Societies

ODL   Open and Distance Learning

OUT   The Open University of Tanzania

PFDA   Public Fire Disaster Awareness

SPSS   Statistical Package for the Social Sciences

UDSM   University of Dar es Salaam

UNISDR   United Nations International Strategy Disaster Reduction

URT   United Republic of Tanzania

WHO   World Health Organization

CHAPTER ONE

INTRODUCTION

1.1 Background to the Problem

Human beings always strive to achieve successfully whatever they plan. Meeting of the targets always depends on the levels of preparedness to absorb future shocks and unexpected inconveniences. Being unprepared, however, may result to endangered life and unrecovered damages. The United Nations (2008) defines disaster preparedness as the capacities and knowledge developed by governments, professional response organizations, communities and individuals to anticipate and respond effectively to the impact of likely, imminent or current hazard events or conditions. Natural disasters sometimes occur beyond the levels of preparedness though they can be reduced. Unlike natural disaster, the possibilities of the communities' capabilities to respond to damages caused man-made activities are high. Of all man-made disasters, fire outbreaks are in most cases caused by human activities though they can either be prevented or controlled.

Moreover, fires on buildings as compared to those that erupt as a result of natural phenomena have been causing vast socio-economical destructions to the affected population due to lack of fire emergency preparedness. For instance, the deadly Comayagua prison fire that occurred 14/15 February 2012 at the National Penitentiary in Comayagua, Honduras, killing 360 people as reported by British Broadcasting Company (2012). Reported by CTV (2012) the Bureau for Alcohol, Tobacco, Firearms and Explosives (ATF) statement said crowding, poor safety practice and the presence of flammable materials in and around the tightly packed

bunk beds caused the rapid spread of the flames. This signifies of unpreparedness state to fire emergencies that led to death of prisoners who were burnt locked.

Basing on that incidence, it was acknowledged by Honduras government that the prison system needed reform (*ibid*). Tanzania has also been experiencing a number of fire outbreaks for years having resulted into losses of lives, properties and destruction of environment. The state of unpreparedness has been one among the reasons of increased damages.

For instance, there were fire outbreaks in the Ministry of Home Affairs headquarters building in 1989, the National Insurance Investment building in 2002, Paradise and Oceanic Bay Hotels in Bagamoyo in March 2009, Tanzania Breweries, Dar es Salaam in July 2009, and Dar es Salaam Parastatal Pension Fund (PPF) Towers in 2013. The fire at the Dar es Salaam Brewery on 29th July 2009, led to considerable loss of more than 1.4 million as taken from TBL Report (2010). As reported by the Guardian Newspaper (2012), this was due to poor fire management strategies and facilities.

Moreover, fire outbreaks for the past twenty years have repeatedly caused remarkable damages to public institutions whose occurrence had impact to psycho-socio-economic development of the affected communities. For instance, in 1994, the Shauritanga Secondary School dormitory in Kilimanjaro region was gutted by fire and more than 43 students were reported died. As it was reported by the East African Newspaper (2009), there was no fire emergency preparedness that led to the loss of

lives of innocent students and school assets. In July 2005, Nsumba Secondary School in Mwanza had its dormitories gutted by fire on different days in the same week whereby students lost all their properties.

According to Kahwa (2009) in 2006, fire consumed Kilimani Primary School in Iringa Region destroyed buildings, furniture and learning materials. In 2007, Bigwa Secondary School in Morogoro Region was gutted by fire whereas two dormitories were burnt to ashes. In August 2008, Imalilo Secondary School in Kwimba district, Mwanza was gutted by fire that left great damages. In July 2009, Ole Sokoine Secondary School in Monduli district was gutted by fire, no one was killed but students' properties were destroyed.

In August 23rd 2009, twelve girl students died and twenty four were injured at Idodi Secondary School in Iringa region after the school dormitory was gutted by fire. As per Nyirenda (2012), most of these disasters have been due to poor fire management systems and lack of awareness to responding to fire emergencies. Despite the killings of innocent students which caused irreplaceable damages and psychosocial problems to the victims, fire outbreaks have been occurring repeatedly in different institutions.

This has increased doubt unto the level of fire emergency preparedness of the institutions concerned. It also leave questions of levels of community awareness on issues related to fire outbreak protection. Since those incidences have mostly been happening in secondary schools, are other public institutions, colleges and universities safe and free of fire?

1.2   Statement of the Problem

According to US Federal Emergency Management Agency (2004), Fire emergency preparedness entails the community's readiness to respond to deadly fire outbreaks as determined by material and non-material resources. Inversely, the communities' fire emergency unpreparedness may result into deadly fire disasters. For instance, there have been trend of 22 inconsistent fire incidences and their consequences in schools and institutions in Tanzania between 1999 and 2009 as reported by Kahwa (2009). Moreover, Kachenje *et al* (2010) found that the Dar es Salaam City Council Fire Brigade recorded of 852 fire outbreaks in Dar es Salaam buildings between 2004 and 2008. These resulted into massive physical and emotional destructions.

Subsequently, research findings (Kahwa, 2009) show that, fire incidences in schools and commercial buildings in Tanzania resulted from negligence and lack of communities' awareness on proper use of fire fighting facilities. Other results (Kachenje *et al.,* 2010) indicated that unavailability and malfunctioning of fire fighting gears, poor management of fire incidences and lacking of exit routes on high-rise buildings also caused fire outbreaks. Apart from the studies focusing only on fire incidences on secondary schools and commercial buildings in Tanzania, yet fire incidences are still on the rise.

However, no study attempted to assess disaster readiness with regards to fire outbreaks particularly in universities in Tanzania. By virtue of being universities which accommodate a number of different facility users and the trend of fire outbreaks in buildings, fire incidences are predictable hence increase the state of

vulnerability. Thus, this study is an attempt to assess fire emergency preparedness among public universities in Tanzania.

1.3   Objective of the Study

1.3.1   Main Objective

The main objective of this study was to assess fire emergency preparedness among public universities in Tanzania.

1.3.2   Specific Objectives

The specific objectives of this study include:

(i)   To assess the level of community awareness on fire outbreak and safety at the public universities in Tanzania.

(ii)   To examine the programmes for fire outbreak responses regarding trainings and creation of public awareness on fire safety in public universities.

(iii) To examine the availability and functioning of safety gears towards fire outbreak responses at the public universities in Tanzania.

1.3.3   Research Questions

There are three major questions in this study which include the following;

(i)   Is the community at the public universities in Tanzania aware of fire outbreak and safety?

(ii)   Are there programmes for fire outbreak responses regarding trainings on fire safety and creation of public awareness at the public universities in Tanzania?

(iii) Are there safety gears supporting the responses to fire outbreak and safety?

1.4   Significance of the Study

Fire outbreaks have been occurring inconsistently and without any notifications that have left room for the communities to remain unprepared. The consequence of this fire disaster unpreparedness has resulted to increased unrecovered physical and psychological damages to the affected communities. This study would generate knowledge to all stakeholders on best ways to act upon fire outbreaks through improving holistic mechanisms unto fire safety awareness and practical responses.

The study is expected to provide crucial inputs on increasing stakeholders' participation in fire safety programmes. This in turn would instill community fire outbreaks responses habit chances to reduce fire incidences and their predicted consequences in Tanzania public universities. Consequently, it would add significant contributions to influence policy makers to take into considerations all issues related to fire as hazardous and disastrous incidences in formulating policies which are in favour of community's safety.

CHAPTER TWO

LITERATURE REVIEW

2.1   Introduction

This chapter is all about presenting the review of the related literature that has been drawn from different readings concerning fire emergency preparedness and other fire related issues. It attempts to explore the fire incidences phenomena through theoretical literature review, systematic review and empirical review parts. The theoretical literature part focuses on theories guiding fire incidence management and the concepts regarding preparedness and awareness creation. The systematic review concentrates upon finding the relevant study, assess the study on the basis of defined criteria, synthesize and discuss the summarized findings. The empirical review focuses on giving the review on the findings pertaining to fire incidences in Tanzania and their consequences.

2.1.1   Operational Definitions

2.1.1.1 Disaster

As written by Zakour (2008), social work disaster researchers define disaster primarily through social disruption and collective stress, though physical hazards are an important part of the definition of disaster. Disasters occur due to natural forces or as a result of human activities (man-made or technological). The natural disasters include earthquakes, volcanic activity, landslides, tsunamis, tropical cyclones and other severe storms. Others are tornadoes and high winds, river and coastal flooding, wildfires and associated haze, drought, sand and dust storms, and infestations.

Technological or man-made hazards include environmental degradation, pollution and accidents (transport and industrial; fire). Fires on buildings are the results of man-made activities that prove failure to take necessary measures to combat the situation. The incidences however occur inconstantly that creates room for reluctance hence result to great irreplaceable destructions due to unpreparedness.

2.1.1.2 Vulnerability

Vulnerability in disasters refers to social structural factors leaving populations such as low-income groups, children, and older individuals disproportionately at risk for loss during disaster. Communities are vulnerable because of their demographic, cultural, historical, or ecological characteristics (Zakour, 2008).

2.1.1.3 Emergency Management

Emergency management in the social work perspective is the management and coordination of the disaster social services delivery system so that important resources are redistributed to vulnerable populations heavily impacted by disaster. Social work disaster researchers also focus on the mitigation, preparedness, response and recovery periods of disasters. This definition permits a long-term developmental orientation, such that political, social, economic, and environmental forces work together to undermine a system's ability to cope with new stresses (Zakour, 2008).

Gillespie (1991) added that emergency management focuses on preparedness for disasters, and planning for coordination of community resources during disasters. In the social work perspective, an important goal for emergency managers is inclusion of diverse organizational representatives and community leaders in overall disaster

planning. Participants in the planning process should include representatives of informal community organizations serving vulnerable populations such as children, single-parent families, low-income individuals, and members of ethnic minorities (Harrell & Zakour, 2000).

2.1.1.4 Disaster Preparedness

According to WHO (2007) disaster preparedness is a programme of long-term activities whose goals are to strengthen the overall capacity and capability of a country or a community to manage efficiently all types of emergencies and bring about an orderly transition from relief recovery, and back to sustained development. It requires that emergency plans be developed, personnel at all levels and in all sectors be trained, and communities at risk be educated, and that these measures be monitored and evaluated regularly.

2.1.1.5 Firefighting Gears/Equipments

Taken from Safeopedia (2015), firefighting equipment is used for firefighting by trained firefighters, or a user at the scene of a fire. There are a number of different kinds of firefighting equipment available depending on the methods used, purpose, user and location. They also vary in types, capacity, size, quality, duration of intended use, type of fire risk involved, manual or automated and many other criteria. Firefighting equipment ranges from a fire fighters gear to fitted systems in a building to fire extinguishers and communication equipment of a wide variety. Firefighting gears/equipments comprise of hundreds of different pieces of equipments and technology. Those include; *Extinguishers* - water type, dry chemical powder type, foam type and carbon dioxide type. *Fire fighter's gear* - fire resistant outer suit, inner

lining suit, inner and outer gloves, woolen socks, fire resistant shoes, helmet with or without headlight and communication system, breathing apparatus, water hoses, valves, nozzles and infrared IR camera. *Installed fire fighting system* - fire main water supply network, hydrant, sprinkler automatic or manual, emergency fuel and electric cut off system, fixed fire fighting system such as carbon dioxide, foam and powder type, portable generators and pumps. *Communication equipments* - walkie-talkie, radio, broadcasts, land line telephone, sound powered telephone, cell or mobile phone and voice pipe. *Fire detection and alarm systems* - smoke, frame, spark detectors, local, centralized automatic, semi-automatic and manual fire alarm systems. Other accessories - water and sand bucket, shovel, hammer, fire axe, cutters, hooks, fire beater, hoes, knife, fire blanket, emergency lifesaving apparatus, emergency lights, head lamp etc.

2.2   Theoretical Literature Review

2.2.1   Social Learning Theory

Social learning being the guiding theory into this study explains human behavior in terms of continuous reciprocal interaction between cognitive, behavioral, and environmental influences. The central idea in learning theory is that a person's current behaviour is determined by prior experience. In any given situation, a person learns certain behaviuor that, over time, may become habit (Taylor et al, 2006).

Social psychologist Bandura (1997) viewed by Baumelster & Bushman (2011) theorized that the more powerful learning processes in understanding social behavior involved social learning through observational, imitation and vicarious learning. According to social learning theory, people learn how to behave by observing and

imitating from what they see and internalize. The idea is that people do not just imitate the specific social behaviors they see, but they make cognitive inferences based on their observations, and these inferences lead to generalizations in behavior.

Bandura (1997) as viewed by Delamater & Myers (2011) identified three basic models of observational learning which included live, verbal instructional and symbolic models. A live model involves an actual individual demonstrating or acting out a behavior. A verbal instructional model involves descriptions and explanations of a behavior. A symbolic model involves real or fictional characters displaying behaviors in books, films, television programs, or online media and mental states are important to learning. The ultimate goal upon social learning is the creation of attitude that has been influenced by observing our social environment supported by different models for learning. In connection to social learning, people need to learn on what will be beneficial to them. Learning by seeing as put by Albert Bandura, creates behaviour that influence attitude. A knowledgeable mind builds confidence in responding to circumstances and the contrary of it leads towards vulnerable states.

Basing on Bandura (1997) as shown by Taylor (2006) concerning the theory on social learning, there is a connection between seeing and acting triggered by knowledge and past experiences. In most cases on fire incidences, people have been failing to respond towards stopping fire due to the fact that they lack knowledge. Leaving people without knowledge make them become vulnerable whereby the risks that are created may result into disasters. Besides, giving people knowledge creates self-assurance on them hence complement on their sense of preparedness. Knowledge creation on fire emergency preparedness so far, needs to be channeled

into three models of observational learning. Fire drilling and rescue exercises may act as live models involving an actual individual demonstrating or acting out a behavior.

This may be complemented by verbal instructional models involving descriptions and explanations of a behavior in this case proper fire fighting habits. A symbolic model involving real or fictional characters displaying behaviors in books, films, television programs, or online media and mental states are important to learning on how to fight with fire incidences. It is of the nature that these models need to act as positive reinforces because learning is effective when supported by not only internal but also external reinforces. Reinforcement as it a principle studied by B.F. Skinner states that people perform particular behaviour because it followed by something that is pleasurable or that satisfies a need.

2.2.2 Systemic Approach to Fire Safety

The approach as generated by Beard (n.d) suggests that a system may be considered as 'failed' if there are aspects of the system which are regarded as undesirable by one or more people involved. With this in mind it is possible to think of fire as a failure of a system. Fire safety needs to be managed. In this context management entails preparedness of the system (authority) towards fire control which includes planning, resource mobilization and intervention.

Failure of the system to put into consideration fire emergency preparedness, leads to disasters that result to destructions. However, a systemic approach is to see the 'dynamic wholeness' in a situation by seeing a pattern and inter-relationship within a

complex whole (*ibid*.). This implies of the need of collective measures to be undertaken by different stakeholders in response to fire outbreaks as they always result to complex socio-economical problems.

2.2.3 Systems Approach in the Management of High Rise Building Fires

As generated by Garis (2009) the system approach was considered useful in dealing with management of fires in buildings. This was by focusing on code enforcement in buildings constructions which was about fire protection systems, occupant communications systems, and structural fire protection. Other issues were public education on information related to protective features of their building, necessary actions during a reported or actual fire emergency and an understanding of fire service operations.

It also included and the fire suppression, which encompasses dispatching, response policies, and fire fighting techniques and tactics (ibid). These three elements have been missing towards comprehensively addressing fire outbreaks as per studies carried out in Tanzania's secondary school and commercial buildings. The focus has been directed to put in place fire extinguishers as the quick means towards combating fire outbreaks while lacking ways to getting into use of the facilities when fire erupts. Fire outbreaks result to socioeconomic damages that need psychosocial approaches to restore the lost capacities to the victims.

2.3 Empirical Review

2.3.1 The World's Disasters and the State of Unpreparedness

Disasters have repeatedly been causing vast destructions of materials and people's lives whose magnitude of damages can seldom be recovered. It is unfortunate that of

all these repeatedly occurrences, yet the levels of damages seem to have been the outcomes of unpreparedness unto such disasters. For instance, the 2004 deadly Tsunami in South East Asia was a catastrophe of the record proportions and far-reaching impact whereby more than 330,000 people were reported killed and millions were made homeless in 11 countries Tanzania being among them.

It also snatched people out to sea, drowning others in their homes or on beaches, and demolishing property from Africa to Asia (National Geographical News, 2005; Tsunami, 2004). China Daily (2009) reported that the total damages were estimated to be US$470 million, 62% of GDP of countries in the South East Asia. However, the report by the United Nations Thailand (2013) has pointed out on disaster preparedness that the unprecedented loss of life in the tsunami was attributed to the lack of warning and public awareness on the nature of and response to the hazard. However, this deadly disaster could have been an alarming indicator towards other happening disasters.

Recently, one of the most powerful storms, super typhoon *Haiyan*, ever recorded was reported to have killed at least 10,000 people in the central Philippines, Manilla, with huge waves sweeping away coastal villages and devastating one of the main cities in the region, destroyed about 70 to 80 percent of structures in its path as it tore through Leyte province on Friday, 8th November, 2013. As per Chicago Tribune (2013) the damage of coconut and rice growing region was estimated to be $ 69 million. This was beyond the level of preparedness despite the caution made to public by the authorities. The degree of psychosocial and economic effects was very high; the recovery to the damages might take a number of years hence increase the level of

vulnerability. So far the affected population mostly involved those who are vulnerable and whose capabilities to equip themselves with socio-economic necessities is questionable. These imply the questioned degree of preparedness regardless the repeatedly occurrences of these deadly events.

Consequently, the deadly Comayagua prison fire that occurred between 14th and 15th February, 2012 at the National Penitentiary in Comayagua, Honduras, was reported by BBC News (2012) to have caused deaths of 360 people. The Bureau for Alcohol, Tobacco, Firearms and Explosives (ATF) statement as reported in CTV News (2012) said crowding, poor safety practice and the presence of flammable materials in and around the tightly packed bunk beds caused the rapid spread of the flames. This signifies the unpreparedness state to fire emergencies that led to death of prisoners who were burnt locked. Basing on that incidence, it was acknowledged by Honduras government that the prison system needed reform (*ibid.*).

Figure 2.1: A Ruined Village near the Coast of Sumatra in Indonesia after the 2004 tsunami

Source: Whyfiles (2014)

2.3.2   Disasters and the State of Unpreparedness in Tanzania

Tanzania has been experiencing different disasters that have caused destructions and deaths of people. For instance, back to May 21st, 1996 the *MV Bukoba* marine disaster in Lake Victoria caused a loss of properties worth million of shillings killing nearly 1000 people whose damages have never been recovered; it was reported that the boat was overloaded with very few safety facilities and thus it was recommended of not safe for sailing. In 10th September, 2011, the ferry *Spice Islanders* which was heading to Pemba, Zanzibar, drowned and caused loss of property, lives and psychological stress among relatives and citizens in general as founded out by Nyirenda (2012). This incidence resembles the 1996 *MV Bukoba* tragedy due to negligence and unpreparedness to such marine disasters. At the very end of 2011, we witnessed heavy floods across the country, whereby Dar es Salaam was mostly hit and 40 lives were lost.

The list of deaths could be more, and the destruction of property was immense. The place had been strictly prohibited for settlement as it is prone to floods yet people refuted the cautions. Surprisingly the flood victims are yet to be provided with reliable future settlements hence return back to flood prone areas *(ibid)*. It is clear that damages are irreplaceable hence left the affected become more vulnerable and poorer than ever. These major incidents happened as a result of negligence, ignorance, irresponsibility and lack of preparedness to such phenomena.

Natural disasters sometimes occur beyond the levels of preparedness though they can be reduced. Unlike natural disaster, the possibilities of the communities' capabilities to respond to damages caused by man-made activities are high. Of all man-made

disasters, fire outbreaks are in most cases caused by human activities; hence they can at large be prevented and controlled. Moreover, fires on buildings as compared to those that erupt as a result of natural phenomena have been causing vast socio-economic destructions to the affected population due to lack of fire emergency preparedness. Taken from Rubaratuka (2013), for instance, for the past thirty years a number of fire outbreaks on buildings in Dar es Salaam were experienced.

These include the Ministry of Home Affairs headquarters building in 1989, the Ex-NASACO building in 1995, the National Insurance Investment building in 2002, Sea Cliff Hotel in 2007, the Cooperative building in Dar es Salaam in 2008, Paradise and Oceanic Bay Hotels in Bagamoyo in March 2009, Tanzania Breweries, Dar es Salaam in July 2009, and Dar es Salaam Parastatal Pension Fund (PPF) Towers in 2013. In most cases fire safety measures were not observed and most of the buildings' walls and roofs were non-fire resistant.

Moreover, fire at the Dar es Salaam Brewery on 29th July 2009 according to Tanzania Breweries Company Limited (2010) led to a considerable loss of more than 1.4 million 375 ml returnable green bottles, which delayed that packaging by a few months. Together with interruptions in electricity supply during the year had an impact on production efficiencies and costs. These were at large commercial centers whereby both domestic and national income relied on. The destructions affected a lot on the income generation that contributed much to sustaining social welfare services. It remains a question of poor measures taken to disaster preparedness notwithstanding a number of fire safety equipments that are placed.

As it has been shown in Chapter One, the trends of fire outbreaks at public schools in Tanzania have repeatedly caused remarkable destructions. The reports by Kahwa (2009) and Habari Leo (July 2009), say that, in July 2005, Nsumba Secondary School in Mwanza had its dormitories gutted by fire on different days in the same week whereby students lost all their properties. In 2006, fire gutted Kilimani Primary School in Iringa Region destroyed buildings, furniture and learning materials. In 2007, Bigwa Secondary School in Morogoro Region was gutted by fire whereas two dormitories were burnt to ashes. In august 2008, Imalilo Secondary School in Kwimba District, Mwanza was gutted by fire that left great damages.

In July 2009, Ole Sokoine Secondary School in Monduli District was gutted by fire, no one was killed but students' properties were destroyed. As taken from *Daily News* (2009) in August 23rd 2009, twelve girl students died and twenty four were injured at Idodi Secondary School in Iringa Region after the school dormitory was gutted by fire. Recently fire razed down the Karume Mchikichini Market which is in Ilala Municipality, Dar es Salaam it started at around 10.00 p.m on 12th June, 2014.

It was reported that more than 80% of the market was burnt to ashes (Msonsa, 2014). The fire resulted in the destruction of 84 stalls and left 103 traders shocked as they saw their livelihoods go up in flames (Microensure, 2014). Probing to what could have been the reason for the fire, Special Police Zone Commander Suleiman Kova announced of the intention to embark on investigation. Unfortunately, the task to fight for fire was difficult due to lockups of so close shops and poor setting up of the market that made it impossible for the fire trucks to penetrate (Kimaro and Lwangili, 2014). As per studies made by Kahwa (2009) most of the incidences were the results

of negligence and unpreparedness that had been worsened by lack of resources, poor planning and unrealistic prioritization of the communities, school management and the government at large. The shocking part of these disasters is that they have been occurring repeatedly in different institutions, killing innocent students, causing irreplaceable damages and wounds as well as increasing psychosocial problems to the affected population.

Figure 2.2: A Raging Fire Tore through the Sprawling open-air' Supermarket' at Mchikichini in Ilala District, Dar es Salaam

Source: David, the Guardian Correspondent, 13th June, 2014

2.4   Policy analysis

Effective fire preparedness depends upon the effectiveness of policies and laws. For any situation where laws and policies are weak, given are the rooms for lousy management of fire by the systems. In making sure managing of disasters is strengthened, Tanzania developed a National Disaster Management Policy (2004) which aims to develop adequate capacity for coordination and cooperation for comprehensive disaster management among key players at all levels. The policy as

well intends to promote research, information generation and dissemination as well as mainstreaming disaster management issues into development plans and other sector policies and programmes at all levels. It focuses on the safe livelihood of the people with minimum interruptions to social and economic development issues (URT, 2009). In maintaining the International and National legislative framework for addressing disaster risk management, Fire and Rescue Service Act of 2007, which is under the Ministry of Home Affairs, was developed. The Act is meant to provide legislative power for the better organization, administration, discipline and operation of Fire and Rescue Force in Tanzania Mainland. The law also empowers different agencies of the government to take distinctive action on disasters.

The National Disaster Management Policy (2004) utilizes explicitly the stakeholders' responsibilities concerning disaster preparedness in the area of response. However, the Report of the Scoping Study for Capacity Development in Disaster Management between Tanzania and Sweden (2011), earmarked strength and weaknesses regarding responses to disasters as guided by the policies and laws. Much has been done on the stakeholders' responses to disasters with specific attention to fire outbreaks. Besides, apart from all the guidelines regarding stakeholders' preparedness in response to disasters, yet there is a widespread unawareness regarding various preparedness activities at all administrative levels in mainland Tanzania, except among a few knowledgeable individuals at DMD. There is lack of tools and processes for systematic and comprehensive preparedness planning.

The report also signifies that there are insufficient funds for preparedness activities at all administrative levels in mainland Tanzania. For this case, there is a need of a

systematic strategy for education, training and exercises on various administrative levels (URT, 2011). Subsequently, the report of the Implementation of Hyogo Framework for Action 2007-2013 concluded that;

> "Disasters can be substantially reduced if people are well informed and have a culture of disaster prevention and resilience. This requires collecting, compiling and disseminating relevant knowledge and information about hazards, vulnerabilities and capacities…"

In assessing the progress of HFA 2007-2013 priorities for action as per United Nations Office for Disaster Risk Reduction (2013), especially priority three about the use of knowledge, innovation and education to build a culture of safety and resilience at all levels in the world, there has been a steady increase of average scores on the priority. However, the institutional and policy commitment to achieving the goals for four priority indicators seemed to be lacking. Besides, Tanzania does not seem to feature anywhere in the report to signify the HFA implementation success level of this priority.

This implies that awareness on disasters preparedness is still not vividly significant. The report of the Scoping study for Capacity Development in Disaster Management between Tanzania and Sweden, justifies the weaknesses of the National Disaster Management Policy (2004). These include the antiquated state of the policy as it was developed since 2004 as compared to the Hyogo Framework for Action (2005-2015); Policy not implemented on regional and district level, committees meet as Security Committees and during disasters for immediate responses; Lack of resources for public awareness raising campaigns; There has been no structure for information management; There is weak early warning system, including weak and slow dissemination of information. As long as there are some weak areas in the National

Disaster Management Policy (2004) whereas the policy guides the practices regarding management of disasters, expected are the lousy management of the same by stakeholders. The review of the policy should be focused so as to improve the actions unto disaster management. However, people require to be informed of all issues concerning disasters including fire outbreak so as to reduce the possibilities of disaster occurrences.

2.5   Research Gap

Fire emergence preparedness is looked into the community awareness level on all fire outbreak related issues including causes, identification and usage of fire safety gears, and knowledge on fire safety mechanisms. Two studies which the researcher discusses in this chapter were done focusing on causes of fire incidences and ways to reduce the disasters. Those included one that was on fire emergency preparedness at schools by Kahwa (2009) and the other was on assessment of urban fire risks in central business in Dar es Salaam by Kachenje (2010).

The main objective of the first study was to explore the level of fire emergency preparedness, prevention and mitigation in secondary schools, analyze the factors leading to continuous occurrence of fire emergency in secondary schools, and recommend remedial measures. It was a case study whose population was obtained under stratified sampling amongst selected public and private secondary schools in Moshi Rural District, Kilimanjaro Region, Tanzania as the study area. The researcher conducted an empirical survey to selected population and found out that none of the schools had a high level of preparedness in case of fire emergency. Generally the findings indicated that the fire emergency safety preparedness level in secondary

schools was low. The study observed that negligence and unpreparedness had been worsened by lack of resources, inadequate resources, poor planning and unrealistic prioritization.

The second study by Kachenje (2010) was carried out in the Central Business District of Dar es Salaam City. The main objective was to assess urban fire risk in consideration with the public awareness on the use of fire fighting facilities and preparedness in the event of fire outbreaks. The research indicated that there was limited fire management capacity in public buildings, as far as public awareness and availability of means and facilities were concerned. The study came up with the recommendation that training and public awareness to the users of the facilities had to be done.

Consequently, the studies reviewed looked into the experiences they had on fire incidences that occurred in different places in Tanzania being in Secondary schools, residential and commercial buildings. They based on the trends of occurrences whereby finding out the underlying causing factors for fire incidences were the base of their studies. However, studies of that nature seem to be incidences oriented rather than prospective ones which look into prevention rather than cure which is the core function of social work profession. As the studies show, there are no any inclusive mechanisms to provide training, drills and public awareness on fire protection and safety to all the facility users.

Apart from the explained mechanism in initiating emergency preparedness, none of the reviewed studies showed interest in focus of public universities in Tanzania.

However, as regards to the nature of fire outbreaks, every person is counted of being vulnerable hence needs to be provided with knowledge and skills about fire safety. Looking into this gap, this study attempted to assess fire emergence preparedness among public higher learning institutions in Tanzania. This expected to enhance the fire emergency preparedness of the Tanzania public universities being forecasted of fire incidences to likely happen.
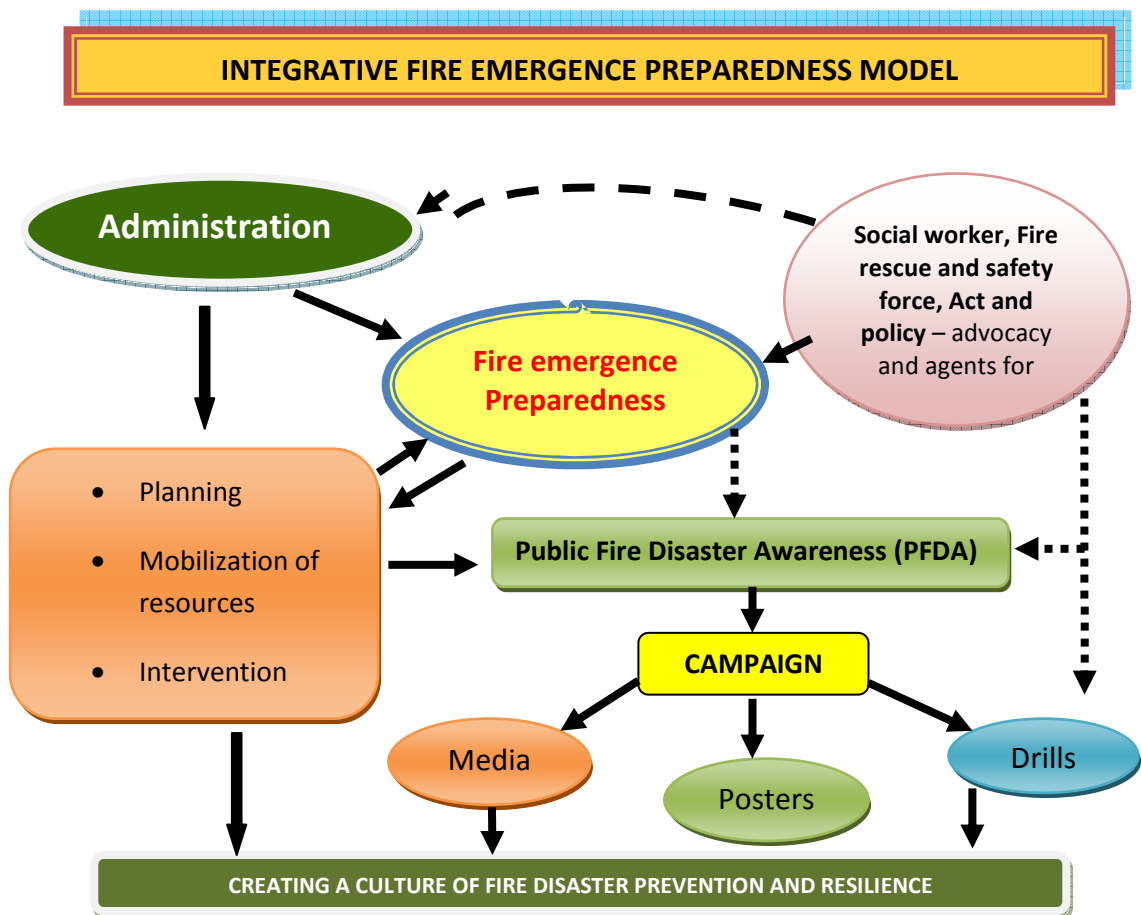
Figure 2.3: Conceptual Framework

Source: Beard & Garis, 2009; Baumelster & Bushman (2011)

The conceptual framework signifies the integrative fire emergence preparedness model that can be useful in dealing with fire outbreaks. The reduction of unnecessary fire accidents can be done through the integrative fire management whereby all

stakeholders need to be involved. As far as this model is concerned administration part is the core component through which the management of fire incidences can be easily attained. Referring to the systemic approach to fire safety by Beards (n.a), it is quoted that, "a system may be considered as 'failed' if there are aspects of the system which are regarded as undesirable."

In this model as it focuses to the institutions where the decision making of issues affecting the institution is done by the management, the administration part should be willing to bear the task to decide on the entire management of the disaster caused by fire outbreak. This should be done through planning of the needed activities, identify and mobilize the required resources (material and non-material) and initiate the intervention process regarding responses to fire outbreak, monitor and evaluate the outcome.

The administration part can never do things that are not in favour of their sides. Needed here for the best interest of the entire population (vulnerable population), is the pressure from other systems including the fire and rescue force units and social workers to advocate for the positive change in saving people's lives. These stakeholders are called upon to perform their responsibilities basing on policies and laws that guide the practice to speak on behalf of the majority poor and vulnerable. The ultimate focus of these two parties, the administration and other stakeholders, is to make sure the fire emergence preparedness goal is fulfilled.

As long as the users of the facilities are the majority who are in most cases unaware of what is needed to be done during fire as well as being ignorant of the uses of fire

safety gears, Public Fire Disaster Awareness (PFDA) approach can be applied. The report of The Hyogo Framework of Action (2013) justifies that disasters can be substantially reduced if people are well informed and have a culture of disaster prevention and resilience. This requires collecting, compiling and disseminating relevant knowledge and information about hazards, vulnerabilities and capacities.

Francis Bacon, in his Meditationes Sacrae (1597; Monticello, 2014) says *'Knowledge is Power'*. Knowledge reduces the possibilities of the individuals to be at risk. Most of the factors that cause fire outbreaks are related to communities' ignorance unto handling and use of fire hazardous facilities (Kachenje *et al*. 2010). What is important is learning by seeing. Albert Bandura (1977) in his Social Learning Theory states that, behavior is learned from the environment through the process of observational learning (McLeod, 2011). Learning is effective when there is a positive reinforcement. In this case, campaigns through media (TV, radio, news papers), posters and drills are the most effective reinforces which can be done. The ultimate goal upon this model is to create a culture of fire disaster prevention and resilience.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1   Introduction

This chapter presents an explanation on how the study was conducted. The chapter describes the methodology applied during fieldwork. The description within this chapter focuses on the research design, study area, study population, sample size and sampling procedure. It also describes data collection methods, data collection procedures, data analysis and ethical consideration.

3.2   Description of the Study Area and justification

The researcher selected the two public universities including The Open University of Tanzania and the University of Dar es Salaam as appropriate study areas due to the fact that they are among public universities that are prone to fire outbreaks. This is because at whatever place that involves people with different activities, containing buildings with different fire hazardous materials, fire accidents are inevitable. Likewise, there has been a quite number of destructive fire outbreaks in areas with the same features as these areas in Tanzania resulted to cost people's lives and other unrecovered damages (Kahwa, 2009; Kachenje *et al*., 2010).

As selected to be one of the study areas, The Open University of Tanzania (OUT) Head Office and Kinondoni Centre are located alongside the Kawawa Road in Kinondoni Municipality. These are academic institutions that call for an influx of different people visiting the place with various needs and purposes. By virtue of using the buildings and other facilities that are hazardous to fire including electrical

and electronic appliances, they are vulnerable of fire incidences. This is why fire fighting gears are placed in the buildings for safety measures.
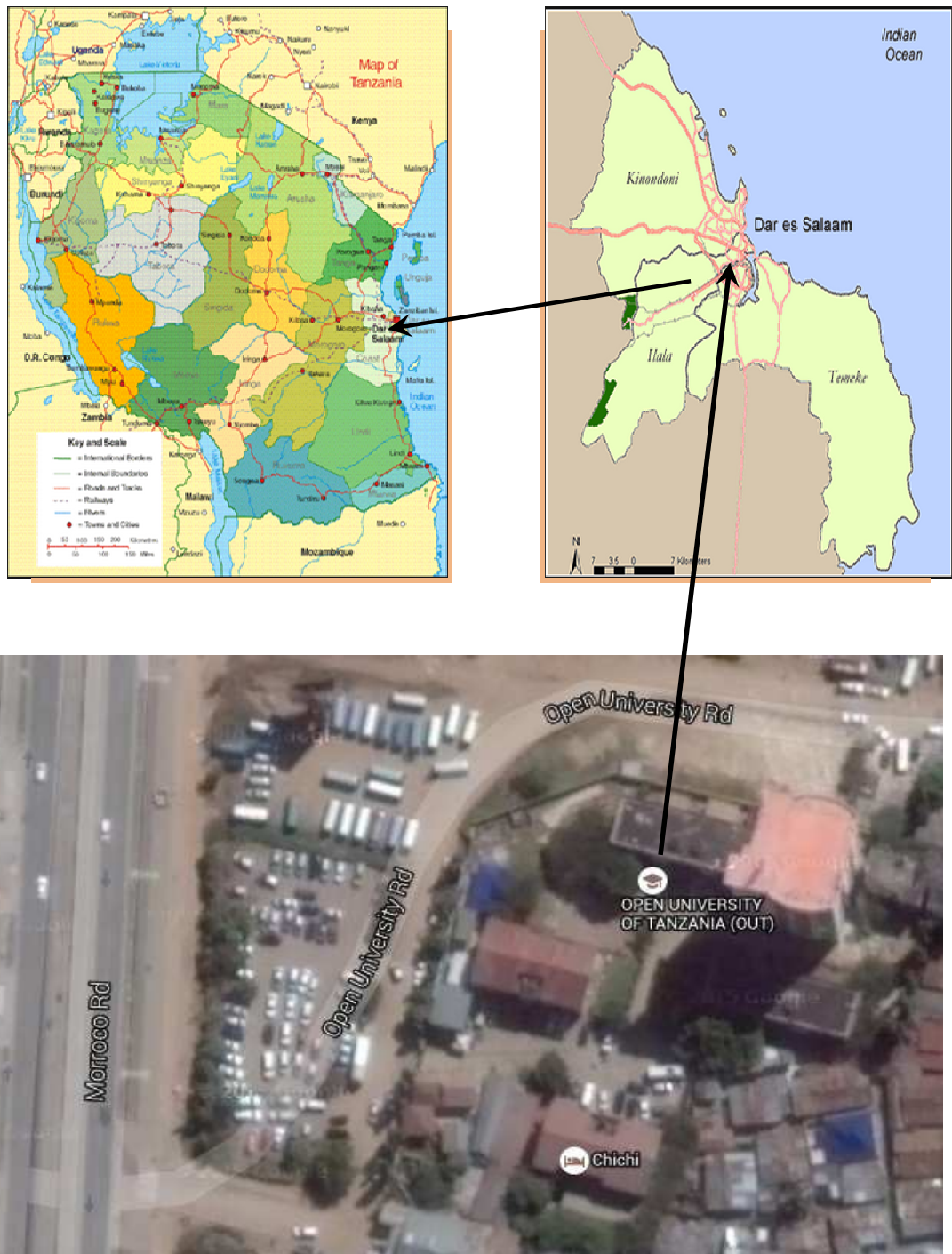
Figure 3.1: Location of the Open University of Tanzania
Source: Google Map (2015)
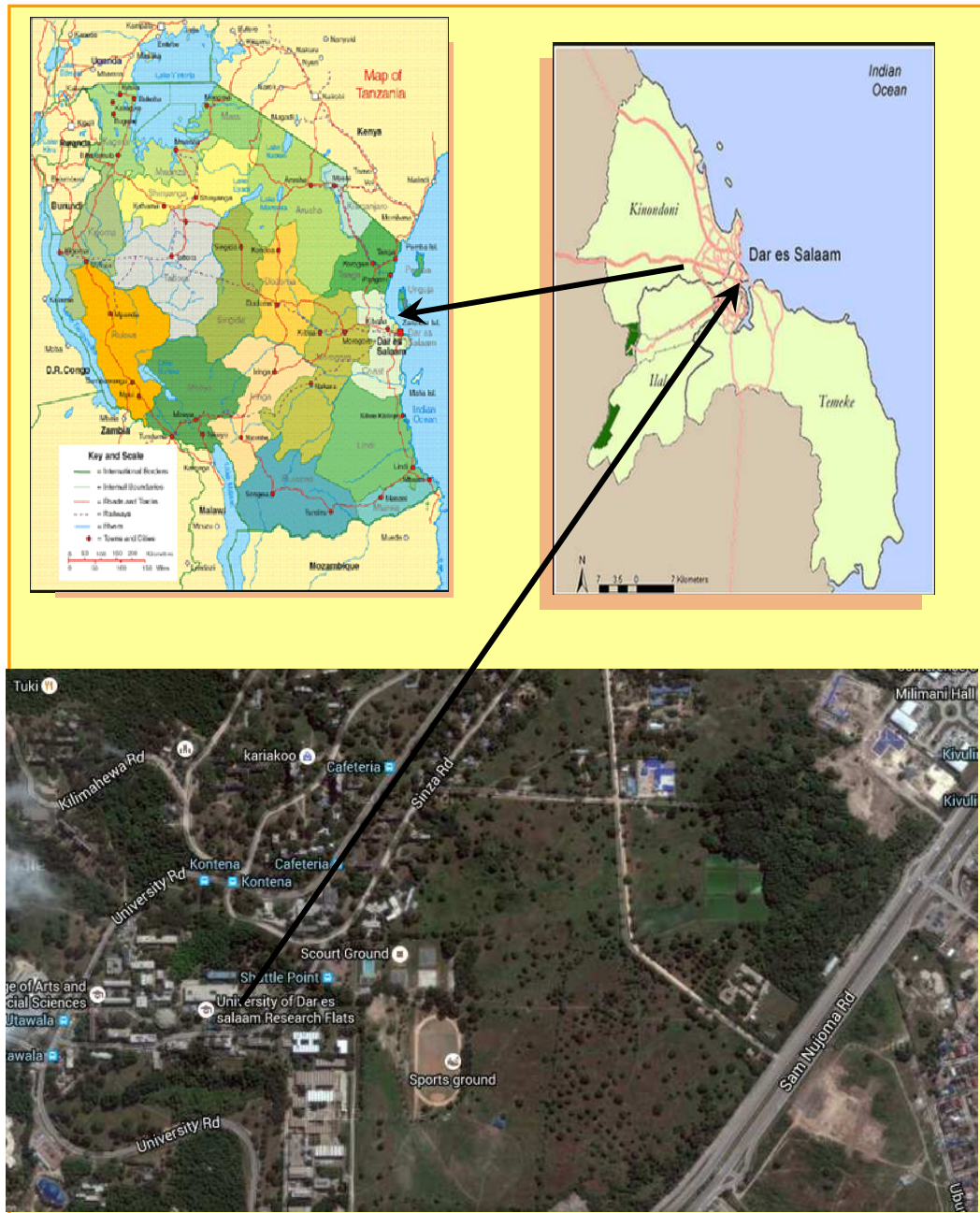
Figure 3.2: Location of the University of Dar es Salaam
Source: Google Map (2015)

The University of Dar es Salaam (UDSM) as illustrated in Figure 3.2 is situated on

the western side of the city of Dar es salaam, alongside Sam Nujoma Road, on the

observation hill in the Kinondoni Municipality. Being an academic institution, there

is also influx of different people visiting the place who in one way or another need to

stay in a safe and fire disaster free zone. Consequently, the nature of daily activities undertaken and services rendered by OUT and UDSM call for the presence of people who use the buildings, congested car parks and other different facilities like electrical appliances that always remain at risk of fire outbreaks.

3.3   Research Design

In this study the researcher adopted a phenomenological qualitative research design which focused on cross-sectional descriptive approach on fire emergency preparedness amongst public institutions. This approach was selected as it is concerned with describing the information of emergence preparedness as a chosen phenomenon in the existing fire outbreaks situation of the public institutions in Tanzania. It is based on gathering the qualitative information as the way towards capturing feelings, perceptions, understandings, and opinions of the respondents concerning fire emergence preparedness of the study areas.

3.4   Study Population

The study population comprised of employees and non-employees from the selected areas being academic and administrative staff as they are the daily users of the premises hence vulnerable of fire disasters; within them are policy makers who have much to inform on fire emergency management due to their positions and authorities. It also involved students who are the victims of fire outbreaks. Additionally the study included the selected staff from Fire and Rescue Unit of the Ministry of Home Affairs who are fire experts (fighters/rescuers) and therefore responsible for all programmes related to fire protection, enforcers of the law pertaining to fire and

rescue exercises. From these study population, primary and secondary data was obtained.

3.5   Sample Size

The sample size accounted of 76 respondents that were obtained from the registers and list of member of staff as a sample frame basing on their roles and functions as representatives of the whole population. Those included the selected respondents from OUT Head Office and Kinondoni Centre as well as those from the University Dar es Salaam. The distribution of the respondents put into consideration academic and administrative staff, fire and rescue team members, non-academic and administrative staff and the students from the selected study areas.

The staff members from the study areas were selected basing on their experiences and knowledge regarding the subject matter in their respective study areas whereby questionnaires were supplied as ways to gather information. Fire rescue team members were also among the important selected respondents whose selection based on their responsibilities regarding emergence responses unto fire incidences. Their inputs were meaningful to the study as far as their experience and knowledge on fire related issues were concerned.

The researcher also gathered information from non-academic and administrative staff members including guards and cleaners who are the daily users of the facilities. This group of respondents provided very useful information for the study as regards to their experience and knowledge on fire outbreaks. Students were among the group that gave useful data for the study. The last group of respondents included staff from

the Fire and Rescue Unit of the Ministry of Home Affairs whose information was much useful in the study.

Table 3.1: Distribution of Respondents

SN	Public Institute	Selected Population	Number
1.	The Open University of Tanzania HQ/Kinondoni Centre	Academic and Administrative staff	10
		Fire and rescue team	5
		Non Academic and administrative staff (guards and cleaners)	7
		Students	15
2.	University of Dar es Salaam	Academic and Administrative staff	10
		Fire and rescue team	5
		Non Academic and administrative staff (guards and cleaners)	7
		Students	15
3.	Ministry of Home Affairs	Fire and Rescue Unit	2
	Total Sample Size		**76**

Source: Field Data, 2014

3.6   Sampling Techniques

This study used both purposive and random sampling techniques. The selection of these two methods considered the different roles and functions of the selected samples; their visibility and geographical locations which enhanced obtaining the desired information appropriate to subject matter. As matter of clarity, purposive sampling was applied on obtaining samples from academic and administrative staff, fire safety experts, guards and cleaners as well as the students. On the other hand, random sampling was applied in getting the elements amongst the clusters that represented the whole population with the related characteristics form the study areas. Random sampling was applied to reduce biases in getting the desired information and give respondents equal chances to be selected.

3.7 Data Collection Techniques

In achieving the set objectives of the study, different methods and tools of collecting data were employed. Those included structured questionnaires, focus group discussions, in depth interviews, observations and documentations. The methods were as outlined below:

3.7.1 Questionnaire

Questionnaire was used with a purpose of gathering information on the different dimensions of situation concerning fire outbreak, safety and rescue knowledge and evaluation of the existing fire safety programmes and facilities. The questionnaires in this study were administered to 14 academic and administrative staff, 4 fire safety experts, 14 security guards and cleaners as well as 20 students from all the study areas. Questionnaire for academic and administrative staff, fire safety experts and students were written in English (Appendices 1,2 and 3) while those for security guards and cleaners were translated in Swahili (Appendix 4) for the matter of understanding the concepts and gathering the required information.

3.7.2 Focus Group Discussion

Information from different focus groups was gathered through discussions on the subject matter. The groups that were included in obtaining information were 6 staff and 10 students from the study areas (Appendix 5). The purpose of applying this method was to gather wide range of information that could not have been featured from other methods including questionnaires, interviews, observations and documents.

3.7.3   In-depth interviews

In-depth interviews were also conducted with key informants including 8 Fire and Rescue Unit officials and fire and rescue team members from the study areas. Interview questions were based on the interview guide (Appendix 6) with the focus to explore issues related to fire emergence preparedness among the chosen study areas including OUT and UDSM.

3.7.4   Observations

Observation was one of the methods used to gather information regarding fire emergence preparedness among the public higher learning institutions selected as study areas including OUT and UDSM. The aim was to observe presence of facilities important for fire rescue and safety; their availability and usage and all risk factors regarding fire outbreaks (Appendix 7).

3.7.5   Documents

A thorough desk review method was employed so as to gather documents that synthesize relevant information for the study. The review was done by gathering information from fire inspection reports, fire outbreak incidences and researches on the subject matter.

3.8   Data Analysis and Presentation

The application of both qualitative and quantitative data analysis techniques encompassing descriptions, graphs, charts and statistics was considered so as to support the exploration, presentation, description, identification and examination of collected data. The data collected were analyzed using Statistical Package for the

Social Sciences (SPSS) and QDA Miner 4 Lite software tools for quantitative and qualitative data respectively. The selection of these packages put into consideration their wider range of application domains such as survey analysis focusing on the qualitative and quantitative data analysis.

3.8 Validity and Reliability of the Tools

To ensure the validity and reliability of the data collection tools, pre-testing was conducted among the small sample of respondents from the research area. Test-retest reliability type was administered to ensure the stability of the tools. Formative validity type was also administered to test the outcome.

3.9 Ethical Issues and Confidentiality

All ethical issues were observed in a strict manner. Confidentiality and secrecy was maintained and that any used data and information obtained in the course of this research was only to be utilized for the purpose of academic endeavors. Questions asked were non-offensive to any respondent or any institution. The official permission to collect data was obtained after the approval of the authorities (Appendix 8).

CHAPTER FOUR

FINDINGS AND DISCUSSION

4.1   Introduction

This chapter presents and discusses the findings of the study on assessing the fire emergence preparedness among public universities in Tanzania, a case of The Open University of Tanzania and the University of Dar es Salaam. The assessment was done through gathering of information from the selected respondents (users of the facilities) whereby questionnaires, discussions, interviews and observations were applied. In achieving the objectives, 76 respondents were selected to be the representatives of the whole population from the study areas. Among the selected 76 respondents, fifty two (52) of them were provided with questionnaires, whereas 16 were engaged in FGD and the remained 8 were interviewed. Observation was conducted to the study areas focusing on the actual situation as regards to fire safety gears. Consequently, age, sex, educational status and working experiences of the respondents were considered in gathering the needed information.

4.2   Demographic Characteristics of the Respondents

This included the age, sex and educational level of the respondents who were provided with questionnaires and engaged in interviews and focus group discussion as well.

4.2.1   Age of Respondents

Figure 4.1 indicates the varying categories of age between nineteen to thirty five years, thirty six to fifty years, fifty one to sixty years and above sixty years. The

groups contributed of academic and administrative staff, security guards and cleaners, fire and rescue team as well as the students.
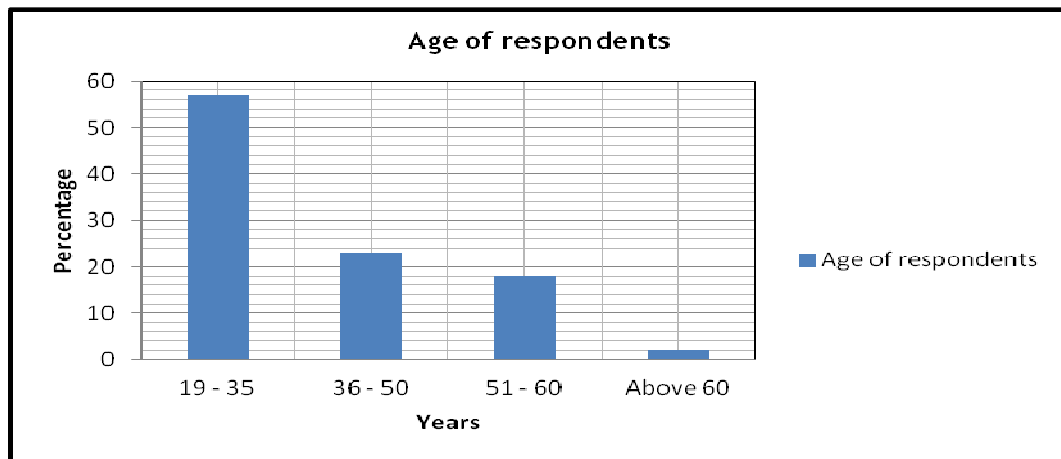
Figure 4.1: Age of respondents

Source: Field Data, 2014

4.2.2 Sex of respondents

Figure 4.2 shows that male respondents constituted of 63.1% while female respondents constituted of 36.86% of the whole population. The male group appears to be high due to the fact that it included fire and rescue team and units that were composed of men only. Women in this case seemed to not be included in the issues related to fire and rescue exercises.
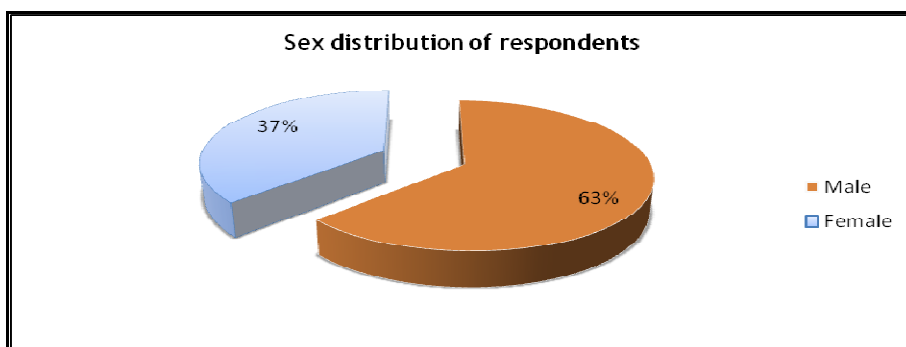
Figure 4.2: Sex Distributions of Respondents

Source: Field Data (2014)

4.2.2   Education Levels of Respondents

Figure 4.3 distributes the respondents' level of education that were provided with questionnaires, interviewed and engaged in focus group discussions. As it is shown in the figure, most of the respondents were included in a bachelor degree category. This is because most of the students engaged in either filling questionnaires or in focus group discussions were students under different undergraduate programmes.
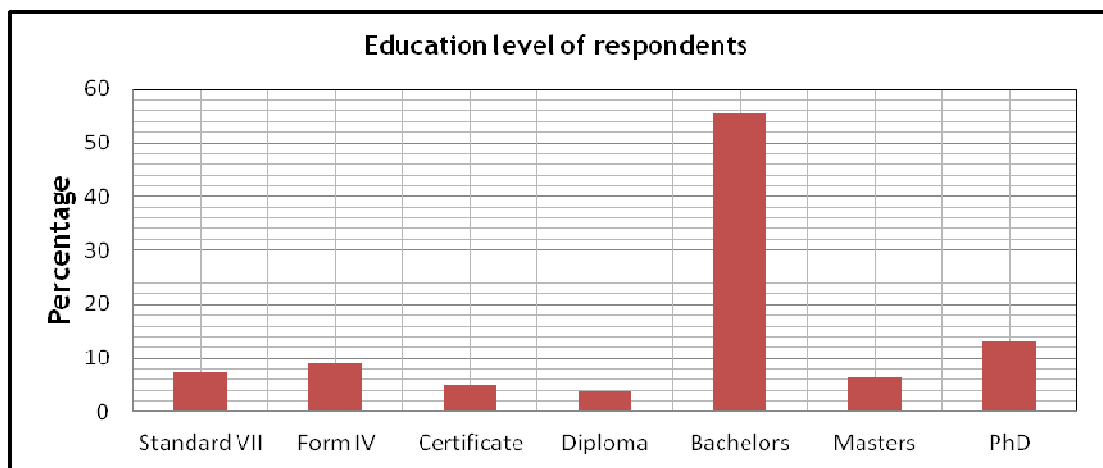
Figure 4.3: Education Levels of Respondents
Source: Field Data (2014)

4.3   Community Awareness on Fire Incidences and Safety Measures

4.3.1   Awareness on the Causes of Fire Incidence

Knowing the causes of fire incidences can somehow increase the level of cautions to be taken unto reducing fire outbreaks. But one may be aware of some reasons for fire outbreaks but yet be ignorant of what to do when fire erupts. Figure 4.4 presents the responses on causes of fire incidences from all data collection tools used. Of all the reasons that were identified, ignorance on the use of fire hazardous materials took the lead in causing fire outbreaks by 82.8%. Other factors included negligence (78.6%), poor installation of electrical appliances (74.4%), which the respondents believed to

be causes of fire outbreaks. Fewer responses (43.3%) were on sabotage and 26.7% were on other unknown factors. Besides, 78.6% of respondents suggested ignorance, negligence and poor installation of electrical appliances to be the major factors contributing to fire outbreaks. This entails that poor investments have been put to increase community awareness on fire accidents and the safety measures to be taken during such accidents. However, any other factor mentioned also seemed to have contributed to fire outbreaks in one way or another though they were slightly mentioned.
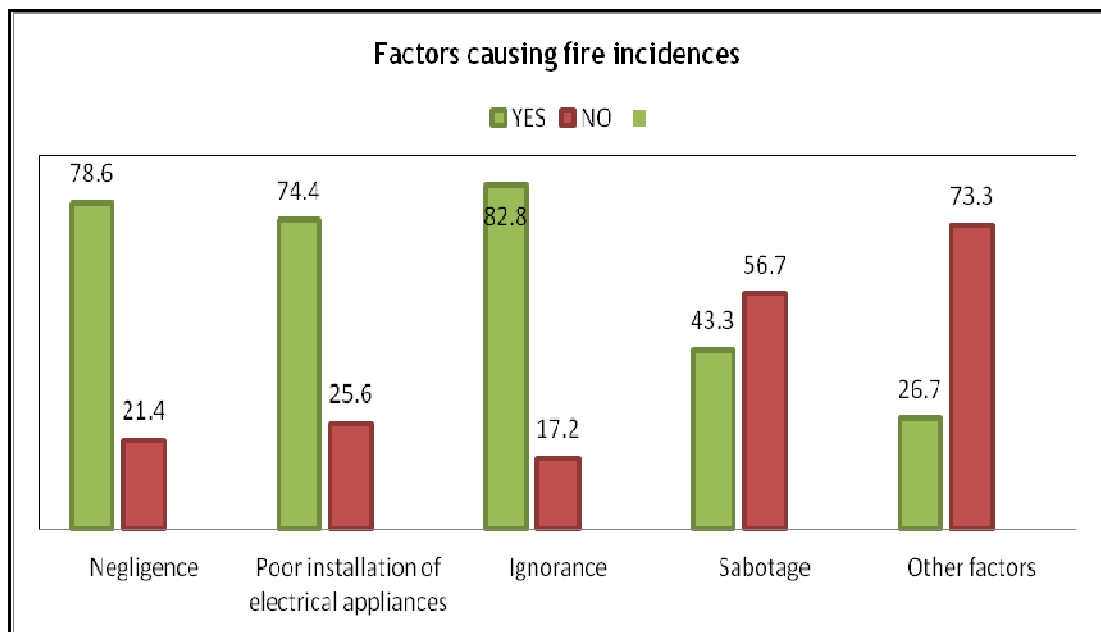
Figure 4.4: Factors Causing Fire Incidences (N=74)
Source: Field Data (2014)

4.3.2 Awareness of Respondents on Witnessing Fire Incidences

The study intended to assess whether the community in the selected public universities was aware of the occurrences of fire outbreaks. Findings from the questionnaires are presented in Figure 4.5. As seen from Figure 4.5, seventy seven

percent of all respondents were aware of fire incidences while 21% had never witnessed fire incidences and the rest 2% did not show any response. Subsequently, twenty two respondents who were asked through interview and FGDs regarding their awareness on fire incidences appeared to have at least once witnessed fire outbreaks. These responses imply that witnessing of fire incidences by the majority of community members was not a new thing.
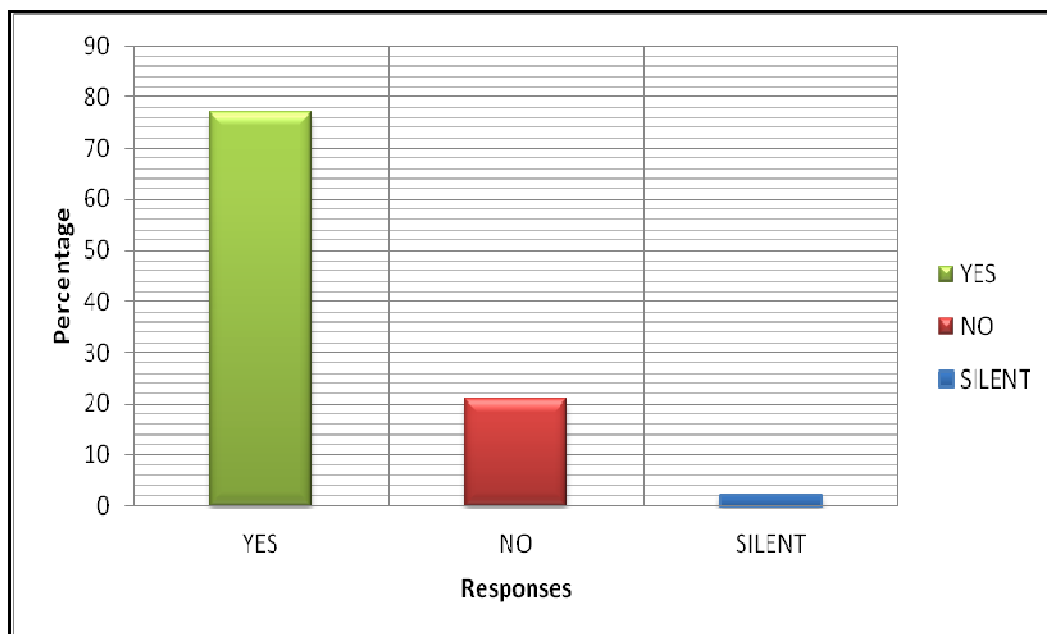
Figure 4.5: Awareness of Respondents on Witnessing Fire Incidences
Source: Field Data, 2014

4.3.3 Awareness of Respondents on Essential Facilities for Fire Fighting and Safety

The study intended to assess the respondents' awareness on fire fighting facilities and safety. As per this study the focus was on fire extinguishers, sacks of sand, water storage, and assembly points, exit/escape roots, First Aid Kits and fire detectors/alarms in the buildings.
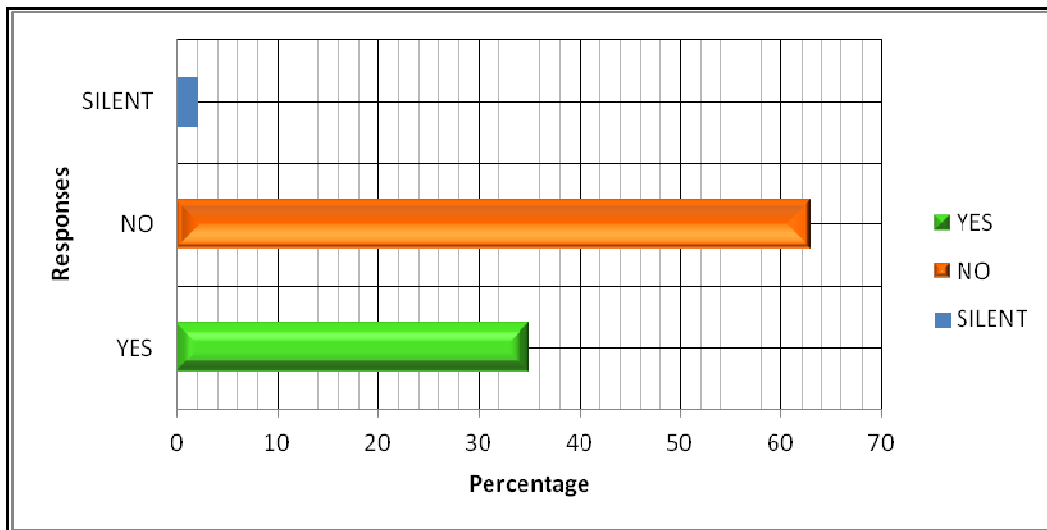
Figure 4.6: Awareness on Essential Facilities for Fire Fighting and Safety as from the Questionnaires' Responses

Source: Field Data (2014)
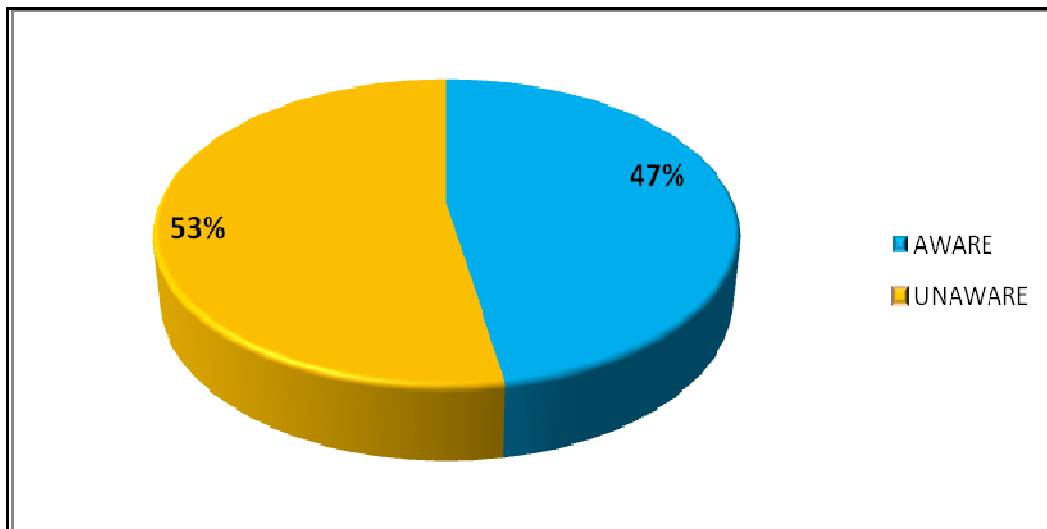
Figure 4.7: Awareness on Essential Facilities for Fire Fighting and Safety from all the Respondents

Source: Field Data, (2014)

When the same question was asked to 6 respondents during interviews, they all gave the impression of being aware of the fire fighting facilities mentioned. Wherefore during FGD session, nine respondents out of 16 seemed to be aware of the facilities for fire fighting and safety. Thereupon, the overall responses from all the groups as

per Figure 4.9 indicate that 53% were unaware of the fire fighting and safety facilities as opposed to 47% of those who seemed to be aware notwithstanding the slight difference between them. This gives an indication that the level of awareness on facilities for firefighting and safety is slightly low. This calls for something to be done to increase community's knowledge on important facilities to be used during fire outbreak.

4.3.4 Awareness of Respondents on Fighting Against Fire Incidences using Local and Relevant Fire Fighting Gears Available in their Private Premises
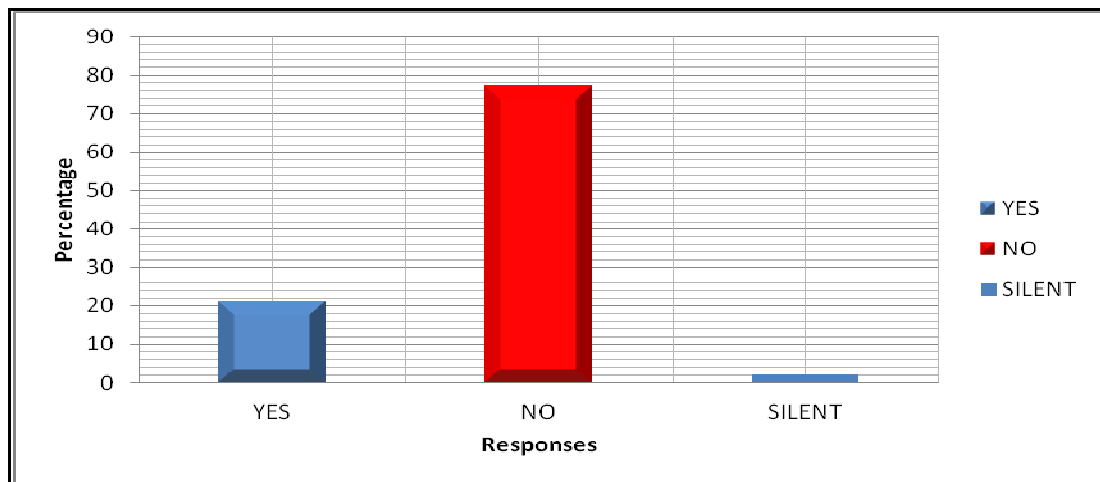
Figure 4.8: Awareness of Respondents who Responded to Questionnaires on Fighting Against Fire Incidences using Local Fire Fighting Gears (N=52)
Source: Field Data, (2014)

Awareness of respondents on fighting against fire incidences using local and relevant fire fighting gears available in their private premises was also figured out in this study. The local fire fighting gears referred to in this section include water and sand. Findings from the questionnaires are presented in Figure 4.8. As per findings in Figure 4.8, the majority of the respondents, about 79%, appeared to lack knowledge

on how to fight and stop fire incidences using local fire fighting gears. As taken from the FGD with the identified 16 respondents, ten of them also lacked knowledge on how to stop fire using fire fighting gears. The same question was asked to 6 respondents out of 8 who were proposed for the interview session. They all appeared to be aware of what to do in fighting against fire outbreaks using the relevant gears. Figure 4.9 presents the overall responses regarding the respondents' awareness on fighting against fire incidences using relevant gears. What is interpreted from the findings in Figure 4.9, inform of the community's low awareness level on how to fight against fire outbreaks using relevant fire fighting gears.
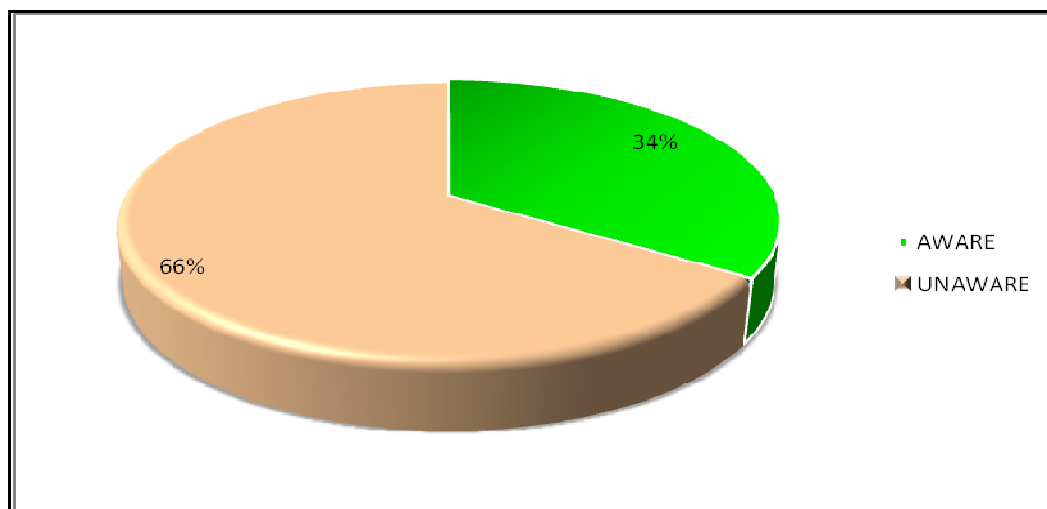
Figure 4.9: Awareness of all the Respondents on Fighting Against Fire
Incidences Using Local Fire Fighting Gears (N=74)
Source: Field Data (2014)

4.3.5   Awareness of Respondents on the use of Special and Modernized Fire

Fighting and Safety Facilities

Apart from the respondents' knowledge on the facilities for fire fighting and safety, the study sought to find out the respondents' awareness on their uses. The responses as shown in Figure 4.10 indicate the level of awareness by 60% of 52 respondents for

those who were unaware and 40% for the rest who appeared to be aware on the use of fire fighting facilities and safety.
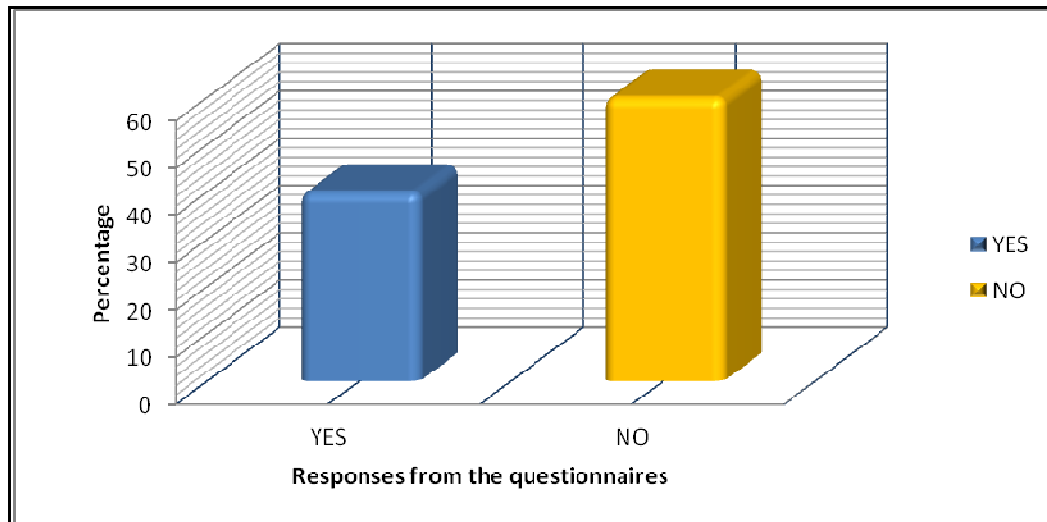
Figure 4.10: Awareness of Respondents on the use of Special and Modernized Fire Fighting and Safety Facilities

Source: Field Data (2014)

Likewise the 6 respondents who were interviewed on whether they had knowledge on the use of fire fighting and safety gears, seventy percent (70%) were positive with the question and the rest 30% showed a negative response. The similar observation was raised out during FGD where 69% of 16 participants who lacked knowledge on the same, blamed the fire and rescue units as well as the institutes for not putting this into priority.

So far, Figure 4.11 illustrates responses given by 74 respondents regarding their knowledge on the uses of fire fighting and safety gears. As it can be seen in Figure 4.11, sixty six percent (66%) of 74 respondents had no any know how of the uses of fire fighting and safety gears. It intimates of the danger ahead on life and properties if at all fire erupt. This is because; more than half of total number of respondents can't use the facilities for protection and safety.
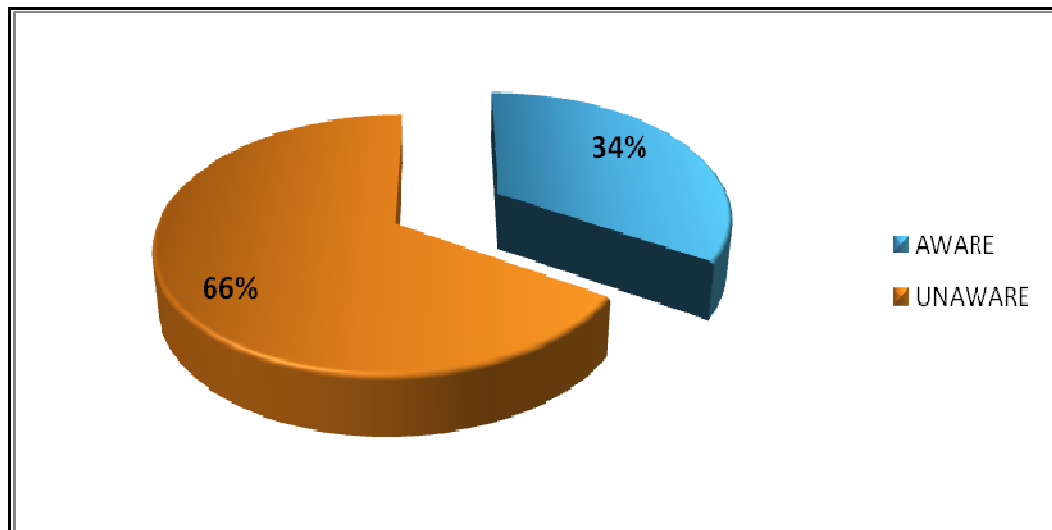
Figure 4.11: Respondents' Awareness on the uses of Modern Fire Fighting and Safety Facilities

Source: Field Data (2014)

4.3.6   Awareness of Respondents on Safety Measures to be taken During Fire Incidences

Knowing what to do when a disaster strikes is essential for all workers. This will ensure that there is no stampede and confusion when a disaster strikes (Ahenkorah-Marfo and Borteye, 2010). Thus, knowing what to do during and after fire outbreaks implies of readiness and preparedness for such disaster. In this regard, all the facility users should know the procedures to be taken during the emergency. This entails the detection of fire and its strength, identify the alerts from the alarms, getting out of the building using the identified escape routes to the assembly point, help others who may be in need of such assistance and check out your number of those in the building (CFPA, 2011).

In an attempt to find out the facts about the respondents' awareness on what to do during fire outbreaks, the responses from the distributed questionnaires gave the

indication of the situation as presented in Figure 4.12. Again 54% of 52 respondents

showed being unaware of safety measures to be taken during fire outbreaks.
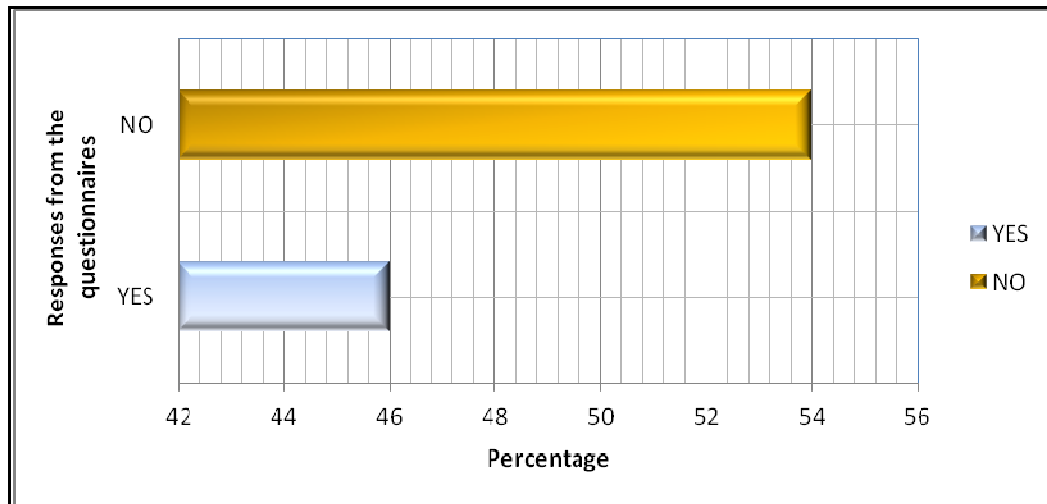
Figure 4.12: Awareness of Respondents on Safety Measures to be taken During

Fire Incidence (Responses From the Questionnaires)

Source: Field Data (2014)

The responses from the FGD and interview sessions regarding the respondents'

awareness on safety measures to be taken during fire outbreaks came up with

different views on the same. Apart from 80% of 6 respondents who were interviewed

to be aware of the safety measures during fire outbreaks, they on the other hand

showed their doubts regarding their different experience on what to do during fire

outbreaks. They actually claimed of not being updated with the new techniques on

how to go about saving life and properties during fire incidences. As regards to the

discussions, six (40%) respondents appeared to be unaware of the safety measures to

be taken during fire incidences. The discussion here so far was on what right

measures were meant concerning safety. As observed, the respondents thought of

just running out of the building without taking into consideration other factors as

aforementioned.
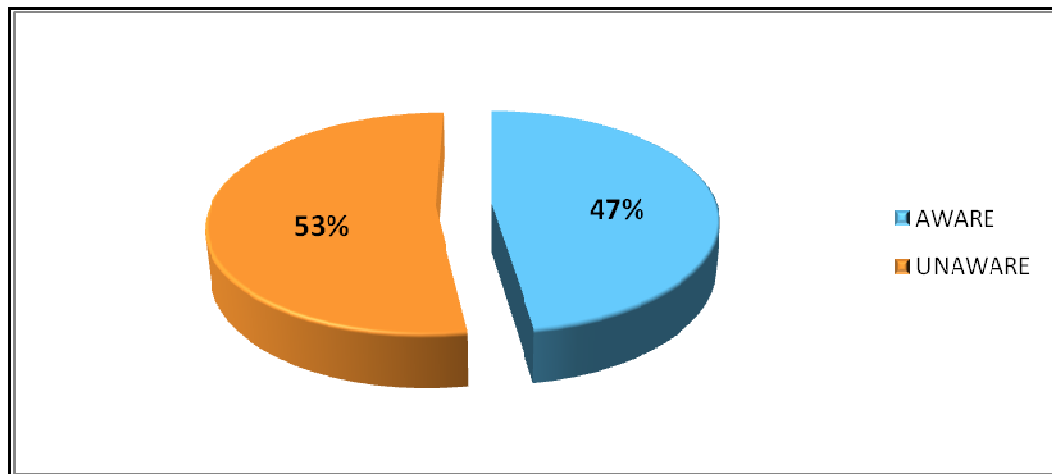
Figure 4.13: Awareness of all Respondents on Safety Measures to be taken During Fire Incidence

Source: Field Data (2014)

However, the level of respondents' awareness regarding the right safety measures to be taken during fire incidences as per Figure 4.13 is slightly not bad although much of their knowledge is basing on their personal experiences and natural skills. This has connections to low level of preparedness by the institution on creating awareness on very important issues for its people to deal with fire outbreaks.

4.4 Programmes for Fire Outbreak Responses Regarding Training on Fire Safety and Creation of Public Awareness in Public Universities

In examining the presence of the programmes for fire outbreak responses regarding training on fire safety and creation of public awareness in public institutions, the respondents were directed to respond to the questions from the questionnaires and interview guide. The questions were concerned with whether there were presence of fire safety training programmes, respondents' attendance on fire safety training and fire safety parades sessions. The other question was concerned with the community awareness sessions on fire safety.

4.4.1   Fire safety training

Training is a critical component of disaster planning which can take several forms including awareness talks, briefing sessions, hands-on practice, simulation exercises and video presentations (Corrall and Brewerton, 1999; Ahenkorah-Marfo and Borteye, 2010). Training is a vital way of increasing awareness and knowledge on any important issue affecting peoples' well being that without which may cause damages. As seen from Figure 4.14, sixty one percent (61%) of all the respondents showed that fire safety training had never been conducted in their study areas while 37% experienced the difference. The percentages as per all the tools applied, suggest that the majority community members from the study areas are currently not very prepared and equipped adequately to deal with any potential fire disaster that may occur. This puts the institutions at a risk situation.
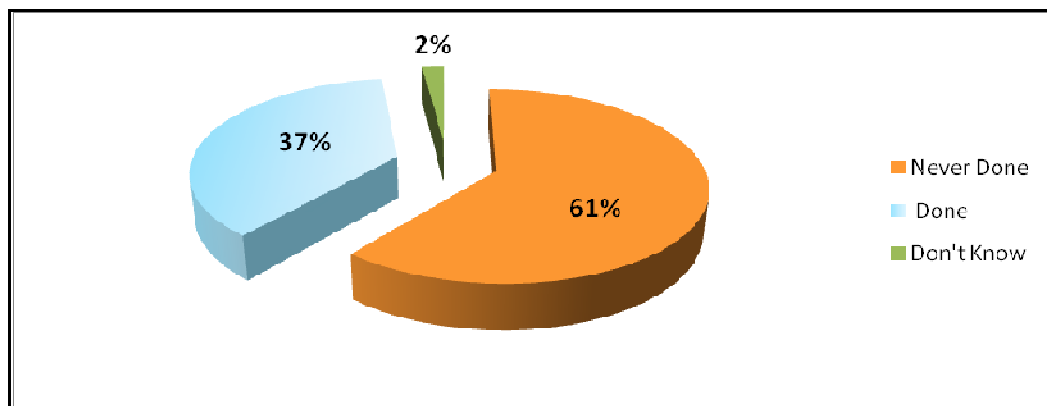
Figure 4.14: Fire Safety Training
Source: Field Data (2014)

4.4.2   Respondents' Attendance on Fire Safety Training

The level of preparedness on fire emergencies is also complemented by the trainings on fire protection and safety regularly being conducted for raising community awareness. As per UN, the context of public awareness and education related to

disaster risk reduction, changing of attitudes and behaviour contribute to promoting a 'culture of prevention' (UN, 2008). It is quite important to conduct training and community awareness as shown by the International Strategy for Disaster Reduction of the UN (2008);

> *'Preparedness action … includes contingency planning, stockpiling of equipment and supplies, emergency services and stand-by arrangements, communications, information management and coordination arrangements, personnel training, community drills and exercises, and public education. It must be supported by formal institutional, legal and budgetary capacities.'*

The study in this case, wanted to know the respondents who ever attended the fire safety trainings as the crucial step in fire emergency preparedness. The findings in Figure 4.15 illustrate 65% being the number of respondents who never attended trainings as compared to 31% who got trainings. This still indicates the risk situation and vulnerability state of the majority once fire erupts. The image that comes out of these findings infer of the poor fire emergence preparedness which calls for immediate response actions.
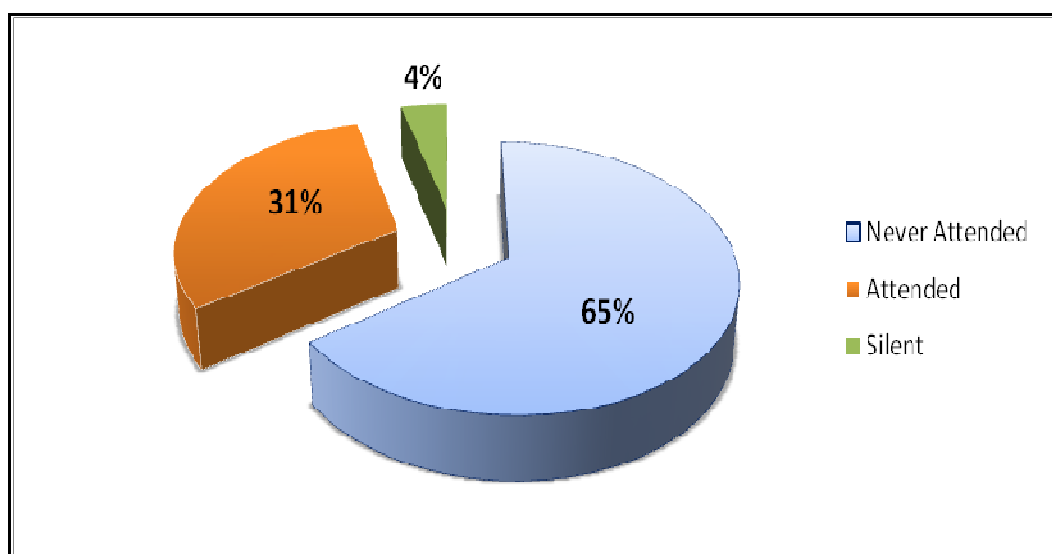
Figure 4.15: Respondents' Attendance on Fire Safety Training
Source: Field Data, 2014

4.4.3 Fire Safety Parade Sessions

Fire safety parades are always meant to make the community aware of fire outbreaks and how to prevent the occurrences. The focus of the parades is to create wide understanding as well as alerting the community of the dangers they cause in misusing fire hazardous materials. Protecting people from fire and explosions is the primary goal of Iowa State University's Fire Protection Plan. Awareness of the proper fire safety procedures can maximize this effort (Iowa State University, 2014). Protecting people with fire and making them aware of the hazards, remains a vital role of any institution. This reveals the state of institutions' preparedness.

This study attempted to find out whether the study areas conducted fire safety parades to members of staff. Looking into Figure 4.16, fifty-nine percent (44 out 74) of the respondents as per questionnaires, interviews and FGD responses, indicated that fire safety parades had never been done. Thirty eight percent (38%) of the respondents revealed their experience that the parades sessions were done while 3% had nothing to say.
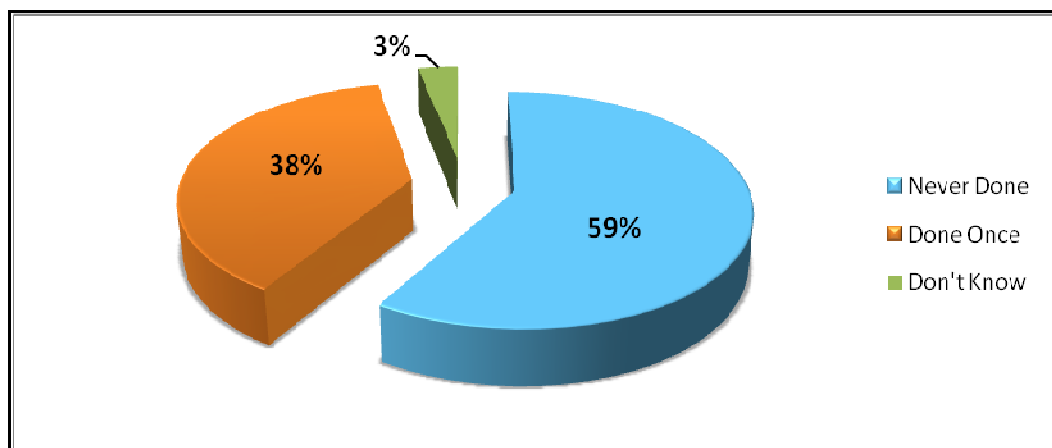
Figure 4.16: Fire Safety Parade Sessions
Source: Field Data (2014)

As per these findings, it can be inferred that potentially more than half of the respondents will not be able to adequately deal with any fire disaster that may crop up. Thus, the need for fire safety parades is crucial for prevention of disasters caused by fire.

4.4.4 Public Awareness Sessions on Fire Safety

International Federation of Red Cross and Red Crescent Societies (2000) states that, 'Community awareness can reduce a population's vulnerability to specific hazards.' When the public is aware of fire incidences, it is safe from disasters that cause irreplaceable damages. As for this study the question was directed to find out the presence of public awareness sessions on fire safety through trainings and enlightenments.
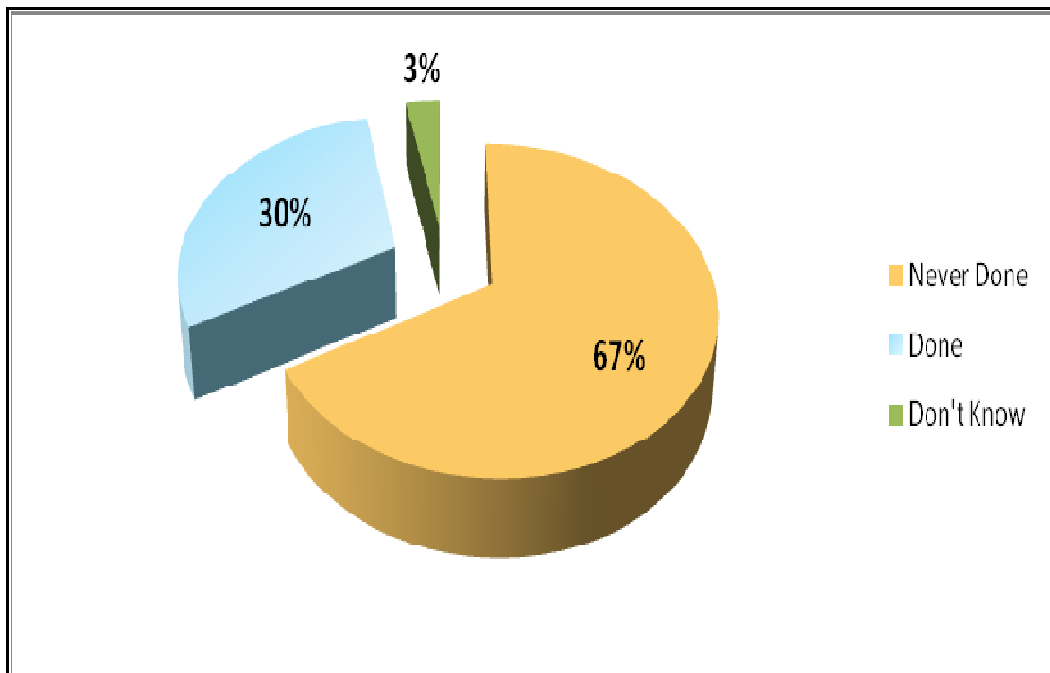
Figure 4.17: Public Awareness Sessions on Fire Safety

Source: Field Data (2014)

The findings from the questionnaires, interviews and FGD presented in Figure 4.17 illustrate that 67% of the respondents (49 out of 74) never witnessed any session conducted for public awareness regarding fire outbreaks. Thirty percent (30%) of the respondents indicate that there have been public awareness sessions at the institutions while there was a non-response of only 3%. The findings imply of the danger facing the community if at all fire erupts. This suggests that public awareness sessions are still needed for the reduction of community's vulnerability and increase of safety.

4.5 Availability and Functioning of Safety Gears Towards Fire Outbreak Responses

The justification of fire emergency preparedness among public institutions is not only the availability of safety gears but also their functioning towards fire outbreak responses. In this section the respondents provided information regarding the availability and functioning of fire safety gears in their respective institutions. The information was obtained through questionnaires, interviews, observation and in FGDs whose questions focused on availability of fire safety gears and their functioning state.

The investigated safety gears included fire extinguishers in buildings, sprinkler system and hose reels, assembly point during fire outbreak, emergence exits/escape routes in buildings, fire boots, suits, helmets, hoods, gloves and breathing apparatus. Others are sacks of sands in buildings and First Aid Kits. The information as per safety gears availability and functioning in study areas is presented in sections 4.5.1 and 4.5.2 respectively.

4.5.1 Availability of Safety Gears Towards Fire Outbreak Responses

Table 4.1: Availability of Safety Gears Towards Fire Outbreak Responses (N=74)

ITEMS	RESPONSES IN %				Total %
	Available	Not Available	Don't Know	Silent	
• Fire extinguishers in buildings	79	6	12	3	100
• Fire detector/alarm systems in buildings	33	35	27	5	100
• Sprinkler systems and hose reels in buildings	45	25	30	0	100
• Assembly point during fire outbreak	37	23	39	1	100
• Emergence exits/escape routes in buildings	28	49	23	0	100
• Fire boots, suits, helmets, hoods, gloves and breathing apparatus	25	75	0	0	100
• Sacks of sands in buildings	25	75	0	0	100
• First Aid Kits	50	50	0	0	100

Source: Field Data, 2014

The necessity of the work places to have fire safety gears is stipulated in the Fire and Rescue Act, (2008) and Tanzania OSHA (2003). The availability of fire safety appliances in the work places intimate the sense of fire emergency readiness. In this study, the focus was to find out the level of fire emergency preparedness by looking into the availability of fire prevention and safety gears.

As presented in Table 4.1 however, the findings on the availability of safety gears in the study areas varied from one item to another. For instance, every building has to be installed with fire extinguishers, automatic fire sprinklers, fire detectors and alarms of which every facility user need to be aware of (The Fire and Rescue Act, 2008; Tanzania OSHA, 2003). The availability of fire extinguishers at OUT premises

as per Head of Estate Management Department, counted of 53 pieces which up to October, 2013 they were still not serviced. Consequently, the administration block with 4 floors at UDSM had only one fire extinguisher as per observation. Looking into Table 4.1, the availability of fire extinguishers in buildings as one of the initiative towards fire safety and protection shows 79% of 52 respondents confirmed of the availability of fire extinguishers in the study areas. The rest 21 percent either didn't know or were silent on this matter.

However, this implies that the institutions at least tried to respond to regulations by putting in place fire extinguishers. The findings in regards with this regulation show that 67% of respondents were not aware of the availability of fire detectors and alarms in the buildings. Only 33% of the respondents were aware of the alarm and fire detector systems to be availability in the buildings. This situation tells that awareness of the facility users on the availability of alarms and fire detectors is still low.

Figure 4.18: Fire Extinguishers in ODL Tower and Block C at OUT
Source: Field Data (2015)

The Tanzania Fire and Rescue Act (2008), states that 'Every building which has a storey the floor of which is more than twenty four meters above the level of the street or ground surface shall be provided in every room, office and hall with automatic fire sprinklers'. According to Eng. Said Juma the Head of Estate Management Department and through observation, *automatic fire sprinklers systems* and *hose reels* were only placed in the New ODL Tower at OUT Head Offices as seen in Figure 4.19. This, as he pointed out, was to comply with safety rules and regulations. However, it was hard to find hose reels in high-rise at UDSM Administration building. Besides, the findings on this item show that 55% of the respondents were still not aware of the availability of fire sprinklers and what it meant with hose reels, hence concluded of the unavailability of the said facilities in the buildings. Forty-five percent (45%) of the respondents agreed of being aware of fire sprinkler and hose reels and that the facilities are available in the buildings. This implies that the facilities were installed in some of the buildings although the facility users' knowledge on their presence and uses was still low.

Figure 4.19: An Automatic Fire Sprinklers System at OUT ODL Tower
Source: Field Data, (2015)

Assembly points and *emergence exits/escape* routes in buildings are essential places prepared for the safety of the facility users during fire outbreaks. As per observation, the assembly points were located in the study areas as shown in Figure 4.20. At OUT only one building (ODL Tower) had signs directing the exit/escape routes (Figure 4.20) whereby every high-rise building in UDSM had emergency/escape routes. Taking from Table 4.1, sixty seven percent of all respondents were not cognizant of the availability of assembly points and emergence exits/escape routes in buildings. Just 33% of the respondents were aware of the facilities for escape and assembling during fire outbreaks. The percentage of unawareness indicates of poor public awareness on availability of fire safety and rescue gears.

Figure 4.20: Fire Exit Sign (in ODL Tower), Assembly Point at OUT and the Emergency Exit (stairs) on the Staff Residents Building at UDSM

Source: Field Data (2015)

Fire boots, suits, helmets, hoods, gloves and *breathing apparatus* are very crucial for fire men during fire fighting. When the respondents were asked on the availability of the fire protection apparatus through questionnaires, interviews and discussions, the responses were 75% 'NO' and 25% 'YES'. This informs of less availability of the afore-mentioned items in the institutions' fire protection units. On the other hand sand can alternatively be used to stop fire outbreak. Thus, buildings need to have sacks of sands for the same purposes.

In verifying the institutions' responses on this matter through the answers of the respondents, it was found that 75% had never come across sacks of sands in the buildings while only 25% agreed on the presence of the facilities. For the case of First Aid Kits availability in the institutions, the responses were equal (50%) of both 'YES' and 'NO'.
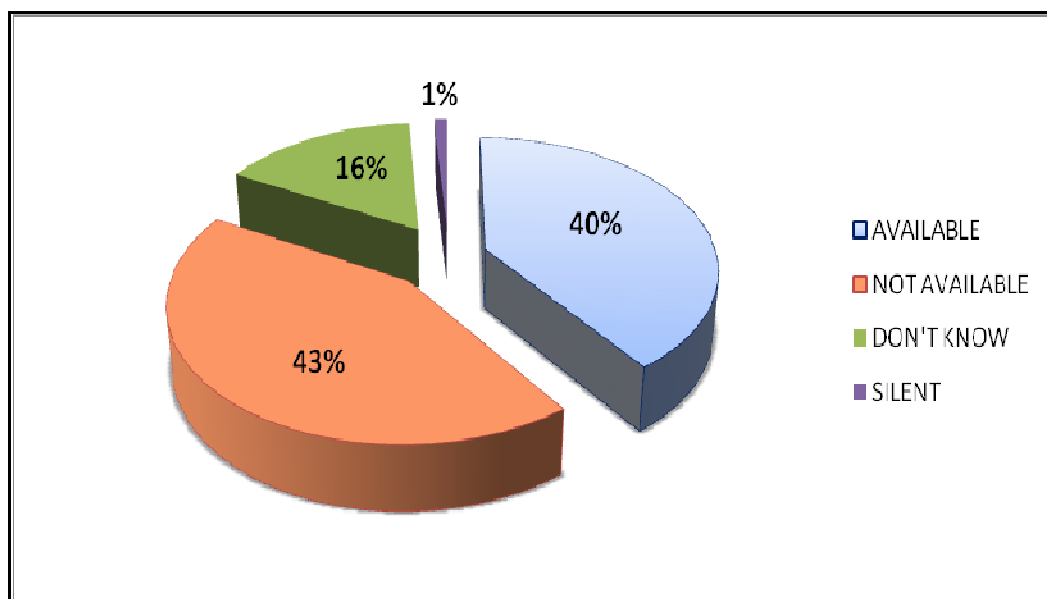
Figure 4.21: Availability of Safety Gears Towards Fire Outbreak Responses
Source: Field Data, 2014

However, the overall responses as presented in Figure 4.21 show that 60% of the respondents appeared to be unaware of the availability of safety gears towards fire outbreak while only 40% seemed to be informed. Since the majority population appears incognizant of the fire safety gears availability, it tells of the danger once fire outbreaks hence increase vulnerability of the selected study areas unto disaster.

4.5.2 Functioning of Safety Gears Towards Fire Outbreak Responses

Fire safety gears may seem to be available in a reasonable number as per findings taken from the respondents although their availability might or might not guarantee their functioning states. Besides, the Fire and Rescue Act (2008) insists of the safety gears inspections to be undertaken by the Fire Force Unit to ensure their functioning states. As per this study, the functioning of the identified safety gears however, based on both the experience of the users having at least witnessed the fire safety gears operating and the facts from the fire men. In finding out whether the respondents were aware of the functioning of the safety gears or not, the researcher collected information from the questionnaires as shown in Table 4.3 and Figure 4.19.

Table 4.2: Functioning of Safety Gears Towards Fire Outbreak Responses (N=52)

ITEMS	RESPONSES IN %				Total %
	Functioning	Not Functioning	Don't Know	Silent	
• Fire extinguishers in buildings	31	15	51	3	100
• Fire detector/alarm systems in buildings	36	18	43	3	100
• Sprinkler systems and hose reels in buildings	42	14	39	5	100
• Assembly point during fire outbreak	20	23	57	0	100
• Emergence exits/escape routes in buildings	36	31	33	0	100
• Fire boots, suits, helmets, hoods, gloves and breathing apparatus	28	22	50	0	100
• Sacks of sands in buildings	25	25	50	0	100
• First Aid Kits	20	45	35	0	100

Source: Field Data (2014)

Apart from the fire extinguishers being available in the buildings of the study areas, the information about their functionality shows that 51% of respondents were unaware of their functionality, fifteen percent justified of their inactivity while 3% were silent on the matter. Collectively, sixty nine percent of the respondents were unaware of the functionality of the fire extinguishers.

Only 31% of the respondents showed that the facilities were fully operating. Looking into the findings, it gives a picture that fire extinguishers in the study areas were dormant. Subsequently, sacks of sand also have to serve the same purposes like fire extinguishers in stopping fire. Apart from being easily found, still the owners do not see their importance in serving the fire safety purposes. This is justified by the findings in Table 4.2 where only 25% of the respondents were aware of their functionality.

Besides, fire detector/alarm systems are very crucial in buildings for the safety of the facility users during fire outbreak. As taken from the observation, most of the buildings in the study area had no fire detector/alarm systems. In view of the findings, forty three percent of the respondents were not informed of the functioning of fire detector/alarms in their respective buildings. Thirty-six percent showed to be aware of the functionality of fire detectors/alarms in the buildings while 18% were sure the systems were not functioning and 3% of the respondents were silent on the subject.

However, the percentage of unawareness on the functionality of fire detector/alarm systems in buildings is still low as coinciding with status of their availability in Table

4.2. Apart from the aforementioned fire detectors/alarms systems, sprinkler systems and hose reels should also be available in buildings to support in stopping fire which may erupt in buildings. As per Tanzania Fire and Rescue Act, (2008) sprinkler systems and hose reels should be placed in buildings in order to discharge water when fire has been detected.

In finding out whether the sprinkler systems placed in the buildings of the study areas were functioning, forty two percent of respondents said the systems were functioning, while 39% showed to be unaware of the systems' functionality, fourteen percent pointed out that the systems were not operating and the rest 5% remained silent.

On the side of assembly points during fire outbreaks, 57% of the respondents were not cognizant with the presence of the said safety facility. Twenty-three percent of 52 respondents were sure that there were no assembly points prepared for fire safety. Likewise, emergency exits and escape routes must be considered and operational in the buildings for the safety exiting during fire outbreaks. When this was ascertained through the responses of the selected respondents, the findings came out with 36% saying that the facilities were functioning, 33% did not know of their functionalities whereby 31% responded showed that the facilities were not functioning.

Fire boots, suits, helmets, hoods, gloves and breathing apparatus are items essentially meant to be used by firemen during fire outbreaks. The researcher found out that 50% of the respondents were unaware of the functionality of the safety apparatus,

28% were sure that the mentioned apparatus were functioning while 22% said that the apparatus were not functioning. Furthermore, for the matter of safety measures and immediate responses after injuries, First Aid Kits with up-to-date medicines and functional apparatus must be in place. In finding out whether the kits were in day-to-day uses, the researcher collected information from the respondents whereas 45% said there were no any kit in use, 35% were unaware of the kits' functioning state while 20% showed that the First Aid Kits were in usable states.
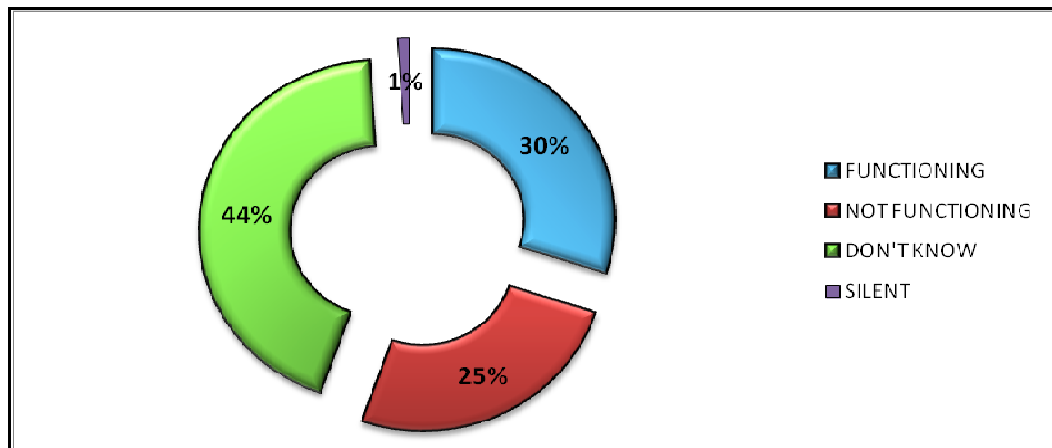
Figure 4.22: Functioning of Safety Gears towards Fire Outbreak Responses

Source: Field Data (2014)

As per Figure 4.22, the overall responses concerning the functioning state of safety gears shows that 70% of the respondents were unaware, silent or sure of the safety gears being not functioning. Besides, the percentage of awareness on the functionality of safety gears amongst the facility users is still quite low notwithstanding the availability of the same gears in the study areas. This also creates doubts on their preparedness regarding fire emergencies and so does the universities.

4.6   Summary of the Key Findings
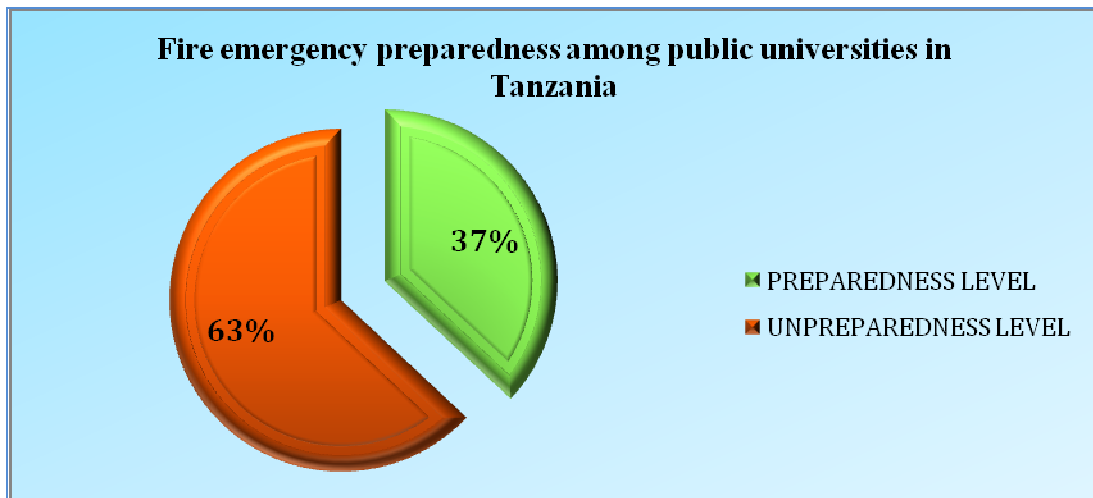
Figure 4.23: Fire Emergence Preparedness among the Public Universities in Tanzania

Source: Field Data (2014)

The study was on assessing the fire emergence preparedness among the public universities in Tanzania. The main concern was on the awareness level of the facility users on all matters related to fire outbreak protection and safety. The assessment was done through gathering of information from 74 respondents (users of the facilities) whereby questionnaires, discussions, interviews and observations were applied. The key questions in responding to the objectives of the study were on examining the community awareness level on fire incidences and safety measures; programmes on fire safety, training and public awareness and the availability and functioning of safety gears towards fire outbreak responses in public universities.

The overall findings as per Figure 4.23 show that 37% is the preparedness level of fire emergence among public universities in terms of awareness on fire outbreaks and taking of safety measures. This intimates that the level of community awareness in terms of knowledge and uses of fire safety gears, cognizance of safety measures to

be taken during fire and the general institutional preparedness on fire outbreaks is relatively low by 63%. This gives the picture of the danger facing the institutions if at all fire erupts. In this regard, the majority of the community members are still vulnerable of the fire incidences likely to happen in their respective areas.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATION

5.1   Introduction

This chapter presents summary, conclusion and recommendations of this study for the betterment of the community's life. It gives the experienced situation as regards to people's readiness unto fire incidences in terms of their awareness on safety and protection. It also suggests ways to follow in increasing community awareness on fire incidences and how to be prepared to prevent the occurrences as well as ways to respond to fire incidences.

5.2   Summary

In most cases natural disasters occur beyond expectations and in many reported incidences people are found unprepared or else unable to resist the occurrences. Unlike natural disasters, human-caused disasters including fire outbreaks though mostly result to damages; rooms for prevention and control are possible to reduce their causes and consequences.

However, fires on buildings as contrasted with those of natural phenomena have been causing enormous socio-economical destructions to people due to lack of fire emergency preparedness. Besides, the call upon all stakeholders to involve themselves in saving both lives and properties of the people is actually the call for social work profession. Consequently, Zakour (1996) comments on disaster practice as it is arguably a reflection of the mission of social work. Moreover, fire outbreaks have repeatedly been causing remarkable damages for many past years whose

occurrences had impact to psycho-socio-economic development of the affected communities. Most of those occurrences were due to poor fire management systems and lacking of awareness to responding to fire emergencies (Nyirenda, 2012). Despite the losses of people's lives, causing of irreplaceable damages and increasing of psychosocial problems, fire outbreaks have been recurring in different places. This has increased doubt on the level of fire emergency preparedness of the affected communities and other vulnerable communities in Tanzania.

Lack of community awareness and the whole preparedness on fire occurrences by different institutions featured much in the reviewed literatures. Their underlying discussions were on causes, current situations for the protection of fire outbreaks and ways to take during and after disasters. However, the focuses of the reviewed literatures were not on making the entire communities who were the facility users from outside to deal with fire safety and protection.

It was pointed out that laws and regulations governing fire safety and protection were not comprehensive enough to deal with fire emergency responses (Kahwa, 2009). The post-disaster management strategies have not yet been given weight so as to reduce occurrences regarding fire outbreaks. What is seen to be worked upon by different institutions is what is called reactive approach.

Something important which was not put into consideration was on how to involve the whole community into the awareness strategies concerning fire safety because it is vulnerable of the consequences. Looking into the said scenario, the researcher came up with this study just to assess the fire emergency preparedness among public

higher learning institutions in Tanzania taking The Open University of Tanzania and the University of Dar es Salaam as sample areas. The basic concerns were on assessing the community awareness on matters related to fire safety and readiness towards fire outbreak responses. These were together with focusing on the preparedness of the institutions regarding the availability and functioning of fire fighting gears. Expected of the study's findings were to improve a sense of readiness unto fire outbreak by the public higher learning institutions and the entire community through the improved awareness strategies for the reduction of vulnerability unto fire incidences.

The outcome of the findings as per chapter four, show that 37% is the preparedness level of fire emergence among public institutions. This intimates that the level of institutional preparedness on fire emergencies was a bit low. This was due to community awareness on the knowledge and uses of fire safety gears, cognizance of safety measures to be taken during fire and the general institutional preparedness on fire outbreaks to be relatively low by 63%. This implies of the danger facing the institutions in case of fire eruption hence increase the degree of vulnerability to the entire community.

5.3   Conclusion

Fire emergencies, as it has been revealed in this study, are potential events that can occur in any institution. This is due to lack of awareness and preparedness of the universities and the community as well to fight and manage fire disasters which featured out in this study. Even though buildings in the selected institutions were fitted with some fire fighting gears that could not make the facility users become

aware of their usability. Expected were the trainings, drills on fire safety and some enlightenment on the same which could seldom be done by the universities. Bacon as supported by Monticello (2014) emphasized on importance of being knowledgeable by saying, 'Knowledge is Power.' Knowledge reduces the risk possibilities. Leaving the community without right knowledge on fire safety and protection forecast dangers and increase the state of vulnerability.

Social learning theory emphasizes that a person's current behaviour is determined by prior experience. In any given situation, a person learns certain behaviuor that, over time, may become habit (Taylor et al, 2006). Social psychologist Albert Bandura theorized that social learning through observational, imitation and vicarious learning make the learning processes to be more powerful in understanding social behavior involved hence strengthen the habit obtained.

The study also revealed that not all essential fire safety facilities, including sacks of sands, enlightenments, fire boots, suits, helmets, hoods, and gloves and breathing apparatus, were present in the study areas. Only a number of fire extinguishers were at least placed in the buildings, and some of the sprinkler systems.

As taken from observation, all car parks in the study areas had no fire safety gears which prognosticate a disaster in case of fire as vehicles are termed among fire hazardous materials. Fire emergency preparedness is still low as compared to the fire protection measures that are currently being taken by the institutions. It is time now for the universities to put in place the right measures aimed at forestalling fire occurrences.

5.4   Recommendations

5.4.1   Integrative Fire Management Preparedness

The reduction of unnecessary fire accidents can be done through the integrative fire management whereby all stakeholders need to be involved. As far as the decision making of all the activities in the institution is done by the management, the administration part should be willing to bear the task to involve other systems on the entire management of the disaster caused by fire outbreak. Referred to here are the institutional disaster committees, fire and rescue force units and social workers to advocate for the positive change in saving people's lives. The ultimate focus of these two parties, the administration and other stakeholders, is to make sure the fire emergence preparedness goal is fulfilled.

As taken from the Myer (2006), Integrated Fire Management approach focuses on both ecologically and socially fire management systems. Integral to the concept is that fires can be both beneficial and detrimental depending on how, where, when and why they are burning. Any single fire can have both beneficial and damaging aspects. Decisions made while managing a fire can take advantage of the potential benefits while striving to minimize potential damages.

Myer advocates for the management to take their mandatory part to decide on the strategies to save the peoples' lives. Management of fire needs both material and non-material resources of which without the authority's right decisions, nothing can be successful. Readiness by the university management to incorporate other systems as aforementioned is vital in fire control. Let it be given priority for the safer and better life of the community.

5.4.2 Public Fire Disaster Awareness (PFDA)

Disasters can be substantially reduced if people are well informed and have a culture of disaster prevention and resilience. This requires collecting, compiling and disseminating relevant knowledge and information about hazards, vulnerabilities and capacities as advised by United Nations Disaster Risk Reduction (2013). What is important is learning by seeing. Social Learning Theory by Bandura in McLeod (2011), states that, behavior is learned from the environment through the process of observational learning. Learning is effective when there is a positive reinforcement.

In this case, campaigns through media (TV, radio, news papers), posters and drills are the most effective reinforces which people can see, learn and practice. As long as the majority users of the facilities in the study areas were in most cases unaware of what needed to be done during fire, Public Fire Disaster Awareness (PFDA) approach could be applied. The ultimate goal upon this model is to create a culture of fire disaster prevention and resilience.

In making this culture of fire disaster prevention and resilience possible, the institutions through PFDA campaign can follow the initiatives plan as adopted from the International Federation of Red Cross and Red Crescent Societies (2000). This may include a comprehensive DA campaign which may be implemented during a disaster awareness week. The activities may involve the media in publicizing fire disaster messages on the radio, T.V. and in newspapers. The institutions may conduct poster contests and perform fire safety drills as well as displaying fire safety posters in different community centres. Each event may hold its own theme so as to create

more awareness and sense of community fire response ownership. This also may require a strong partnership with other stakeholders who are involved in fire safety and prevention activities including fire safety unit staff and social workers.

5.4.3 Review of the Laws and Policy Formulation by the Government

The Government through its bodies has the mandate to formulate and enforce the laws and regulations pertaining to disaster management. The weaknesses which featured out in this study concerning the management of fire outbreaks give the picture of something wrong on their laws and regulations. What is stated in the Fire and Rescue Act, Cap 427 of 2008 regarding the management of fire, do not satisfy the enforcement requirements of the law to the community. That left the loop hole of the community to take little consideration on all issues related to fire safety and protection notwithstanding the damages that have been experienced.

It is recommended of the reviews and reforms of the laws and regulations regarding fire control and safety to be given priority so as to create the disaster response habit to save people's life. The Disaster Management Unit in the Prime Minister's Office, the Ministry of Home Affairs as well as the Fire and Rescue Unit in central and local authorities should ensure the enforcement of the laws and regulations concerning fire outbreaks management among institutions.

Programmes for the training of fire safety to members of staff from the public universities should be prioritized so as to adequately deal with any potential fire outbreak that may occur. The sufficient fund to cater for all the activities concerning

fire outbreak management should be prepared and provided. This is because in most cases insufficiency of fund always hinders the disaster management.

5.4.3   Improvement of Fire Preparedness by the Public Universities

It was observed in this study that fire preparedness in the public universities was low. It was concluded that not all issues related to fire safety and control were given the required attention; those included trainings, fire safety drills, and awareness to the community, availability of fire safety gears and establishment of fire management committees. It is then recommended that activities that engender the spirit of preparedness especially emergency education and awareness programmes; regular training and simulation exercises are given the needed attention so that facility users can adequately deal with any potential disaster that may occur.

In particular all staff should be trained to know the uses of fire fighting gears which are available in their respective places. A disaster management team should be strengthened formed comprising of all categories of staff. The committee should be meeting as scheduled, but also at any time as per needs. As it has been discussed earlier, public fire safety awareness through Public Fire Disaster Awareness should highly be considered. This is because awareness rising on issues related to fire protection and safety creates a protective behaviour.

In this case enlightenments through posters that may have information on fire as a disaster, safety and protection may in the high position to serve the purpose. Fire safety campaigns as explained in Public Fire Disaster Awareness need to be emphasized. This will serve the need to create community awareness on fire safety

and protection who are the facility users and vulnerable of fire incidences forecasted. Updating the fire safety information on enlightenments in regular basis may also reduce the usual reluctance as fire incidences seldom occurred in the study areas.

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APPENDICES

Appendix I: Questionnaire

**THE OPEN UNIVERSITY OF TANZANIA
AN ASSESSMENT OF FIRE EMERGENCY PREPAREDNESS
AMONG PUBLIC UNIVERSITIES IN TANZANIA
ACADEMIC, ADMINISTRATIVE STAFF AND
TECHNICIANS QUESTIONNAIRE**

(Kindly   tick

Under 18	19 - 35	36 - 50	51 - 60	Above 60

1) a) Age

b) Sex: Male [   ]   Female [   ]

c) Education level:

Form IV	Form VI	Diploma	Bachelor	Masters	PhD

d) Employed as:

Academic staff	Administrative staff	Technician

e) Work place:

OUT	UDSM

OUT = The Open University of Tanzania
UDSM = University of Dar es Salaam

f) Working experience:

1 - 5	6 - 10	11 - 15	16 - 20	Above 20

Section B: Awareness on fire incidences

2) **Do you think fire outbreaks in buildings are the results of…?**

(Tick if appropriate)

a) Negligence in the use of fire hazardous materials   [   ]

b) Poor installation of electrical appliances causing faults   [   ]

c) Ignorance in handling fire hazardous materials   [   ]

d) Sabotage   [   ]

e) Others …………………………………………………………………………,

(Please circle the relevant number whereas 2=YES and 1=NO)

3) a) Have you ever witnessed any fire incidence in your lifetime? 2 1

   b) Do you know the facilities essential for firefighting? 2 1

   c) Are you aware of what should be done to stop fire? 2 1

   d) Can you use any of the facilities you know in your locality for firefighting?

                                                                   2 1

   e) Are you aware of the uses of modern fire fighting gears? 2 1

   f) Are you aware of the safety measure to be taken during fire? 2 1

Section C: Programmes on fire safety

(Circle the number under initials that apply: ND= Never Done, O = Once, F = Frequently)

4) **Indicate your experience on the following aspects concerning fire management programmes at your university**

	ND	O	F
a) Training programmes on the use of fire safety facilities	1	2	3
b) Attended training on fire safety	1	2	3
c) Fire safety parade sessions	1	2	3
d) Community awareness sessions on fire safety	1	2	3

Section D: Fire safety gears

(Circle the number under initials that apply: DK = Don't Know, NA = Not Available, A = Available)

5) **Availability of fire safety, fighting and rescue facilities indicates level of preparedness. Identify facilities available in your university regarding fire emergency preparedness**

	DK	NA	A
a) Fire extinguishers in buildings	1	2	3
b) Fire detectors/Alarm systems	1	2	3
c) Sprinkler system and hose reels	1	2	3
d) Assembly point during fire outbreak	1	2	3
e) Emergence exits/escape routes in buildings	1	2	3

(Circle the number under initials that apply: DK=Don't Know, NF=Not Functioning, F = Functioning)

6) Functioning of fire safety gears portrays the level of preparedness. Examine the functioning of available fire safety gears in your university regarding fire emergency preparedness

	DK	NF	F
a) Fire extinguishers in buildings	1	2	3
b) Fire detectors/Alarm systems	1	2	3
c) Sprinkler system and hose reels	1	2	3
d) Assembly point during fire outbreak	1	2	3
e) Emergence exits/escape routes in buildings	1	2	3

7) Management of fire needs collective efforts and commitment. What do you recommend on the improvement of fire emergency preparedness measures at your university?

a) ………………………………………………………………………………………

b) ………………………………………………………………………………………

c) ………………………………………………………………………………………

d) ………………………………………………………………………………………

e) ………………………………………………………………………………………

Appendix II: Fire Management Team - Questionnaire

	THE OPEN UNIVERSITY OF TANZANIA AN ASSESSMENT OF FIRE EMERGENCY PREPAREDNESS AMONG PUBLIC UNIVERSITIES IN TANZANIA FIRE MANAGEMENT TEAM - QUESTIONNAIRE

(Kindly   tick

Under 18	19 - 35	36 - 50	51 - 60	Above 60

1) a) Age

b) Sex: Male ☐   Female ☐

c) Education level:

Form IV	Form VI	Diploma	Bachelor	Masters	PhD

d) Employed as:

Academic staff	Administrative staff	Technician

e) Work place:

OUT	UDSM

OUT = The Open University of Tanzania

UDSM = University of Dar es Salaam

f) Working experience:

1 - 5	6 - 10	11 - 15	16 - 20	Above 20

Section B: Awareness on fire incidences

2) **Do you think fire outbreaks in buildings are the results of…?**

(Tick if appropriate)

a) Negligence in the use of fire hazardous materials   ☐

b) Poor installation of electrical appliances causing faults   ☐

c) Ignorance in handling fire hazardous materials   ☐

d) Sabotage   ☐

e) Others …………………………………………………………………………

*(Please circle the relevant number whereas **2=YES** and **1=NO**)*

3) a) Have you ever witnessed any fire incidence in your lifetime?   2   1

   b) Do you know the facilities essential for firefighting?   2   1

   c) Are you aware of what should be done to stop fire?   2   1

   d) Can you use any of the facilities you know in your locality for firefighting?

      2   1

   e) Are you aware of the uses of modern fire fighting gears?   2   1

   f) Are you aware of the safety measure to be taken during fire?   2   1

Section C: Programmes on fire safety	*(Circle the number under initials that applies:* **F** *= Frequently,* **O** *= Once,* **ND***= Never Done)*

4) **Indicate your experience on the following aspects concerning programmes on fire management at your university**

	F	O	ND
a) Training programmes on the use of fire safety facilities	3	2	1
b) Community awareness sessions on fire safety	3	2	1
c) Fire safety parade sessions	3	2	1
d) Inspection of fire safety gears	3	2	1
e) Regular updates of fire safety enlightenments	3	2	1
f) Attended training on fire safety and use of safety gears	3	2	1

Section D: Fire safety gears	*(Circle the number under initials that applies:* **A** *= Available,* **NA** *= Not Available,* **DK** *= Don't Know)*

5) **Availability of fire safety, fighting and rescue facilities indicates level of preparedness. Identify facilities available in your university regarding fire emergency preparedness**

	A	NA	DK
a) Fire extinguishers in buildings	3	2	1
b) Fire detectors/Alarm systems	3	2	1
c) Sprinkler system and hose reels	3	2	1
d) Assembly point during fire outbreak	3	2	1
e) Emergence exits/escape routes in buildings	3	2	1

f) Fire boots, suits, helmets, hoods, gloves and breathing apparatus

                                                      3   2   1

g) Sacks of sands in buildings   3   2   1

h) First Aid Kits   3   2   1

i) Funds   3   2   1

(Circle the number under initials that apply: DK=Don't Know,   NF=Not Functioning, F = Functioning)

6) Functioning of fire safety gears portrays the level of preparedness. Examine the functioning of available fire safety gears in your institution regarding fire emergency preparedness

	F	NF	DK
a) Fire extinguishers in buildings	3	2	1
b) Fire detectors/Alarm systems	3	2	1
c) Sprinkler system and hose reels	3	2	1
d) Assembly point during fire outbreak	3	2	1
e) Emergence exits/escape routes in buildings	3	2	1
f) Fire boots, suits, helmets, hoods, gloves and breathing apparatus	3	2	1
g) First Aid Kits	3	2	1

7) Management of fire needs collective efforts and commitment. What do you recommend on the improvement of fire emergency preparedness measures at your university?

a) …………………………………………………………………………

b) …………………………………………………………………………

c) …………………………………………………………………………

d) …………………………………………………………………………

e) ………………………………………………………………………

Appendix III: **Students - Questionnaire**
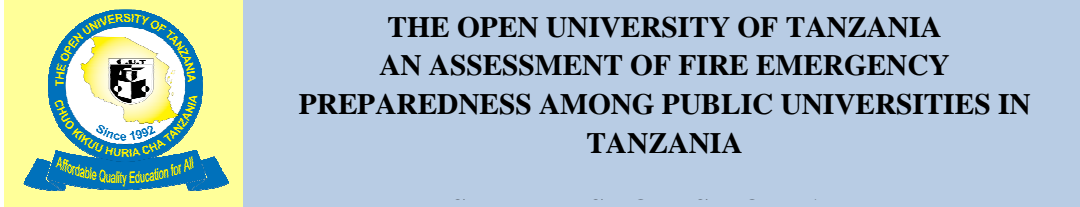
**THE OPEN UNIVERSITY OF TANZANIA
AN ASSESSMENT OF FIRE EMERGENCY
PREPAREDNESS AMONG PUBLIC UNIVERSITIES IN
TANZANIA**

Section A: Demographic information

(Kindly   tick

Under 18	19 - 35	36 - 50	51 - 60	Above 60

1) a) Age

   b) Sex: Male   Female

   c) Programme:

Programme	Level

   d) Duration:

1 year	2 years	3 years	4 years	Above 4

   e) Institution:

OUT	UDSM

   OUT = The Open University of Tanzania
   UDSM = University of Dar es Salaam

Section B: Awareness on fire incidences

*(Please circle the relevant number whereas 2=**YES** and 1=**NO**)*

2) a) Have you ever witnessed any fire incidence in your lifetime?   2   1

   b) Are you aware of what should be done to stop fire?   2   1

   c) Do you know the facilities essential for firefighting?   2   1

   d) Can you use the facilities for firefighting   2   1

   e) Are you aware of the safety measure to be taken during fire?   2   1

3) **Do you think fire outbreaks in buildings are the results of…?**

(Tick if appropriate)

a) Negligence in the use of fire hazardous materials

b) Poor installation of electrical appliances causing faults

c) Ignorance in handling fire hazardous materials

d) Sabotage

e) Others

…………………………………………………………………………..,

Section C: Programmes on fire safety

*(Circle the number under initials that applies: **O** = Once, **F** = Frequently, **ND**= Never Done)*

4) Indicate your experience on the following aspects concerning fire management programmes at your university

	F	O	ND
a) Training programmes on the use of fire safety facilities	3	2	1
b) Community awareness sessions on fire safety	3	2	1
c) Fire safety parade sessions	3	2	1
d) Inspection of fire safety gears	3	2	1
e) Regular updates of fire safety enlightenments	3	2	1
f) Attended training on fire safety and use of safety gears	3	2	1

Section D: Fire safety gears

*(Circle the number under initials that applies: **A** = Available, **NA** = Not Available, **DK** = Don't Know)*

5) Availability of fire safety, fighting and rescue facilities indicates level of preparedness. Identify facilities available in your university regarding fire emergency preparedness

	A	NA	DK
a) Fire extinguishers in buildings	3	2	1
b) Fire detectors/Alarm systems	3	2	1
c) Sprinkler system and hose reels	3	2	1
d) Assembly point during fire outbreak	3	2	1

e) Emergence exits/escape routes in buildings   3   2   1

*(Circle the number under initials that applies: **F** = Functioning, **NF**=Not Functioning **DK**=Don't Know)*

6) Functioning of fire safety gears portrays the level of preparedness. Examine the functioning of available fire safety gears in your university regarding fire emergency preparedness

	F	NF	DK
a) Fire extinguishers in buildings	3	2	1
b) Fire detectors/Alarm systems	3	2	1
c) Sprinkler system and hose reels	3	2	1
d) Assembly point during fire outbreak	3	2	1
e) Emergence exits/escape routes in buildings	3	2	1

7) Management of fire needs collective efforts and commitment. What do you recommend on the improvement of fire emergency preparedness measures at your university?

a) ……………………………………………………………………………

b) ……………………………………………………………………………

c) ……………………………………………………………………………

d) ……………………………………………………………………………

e) ……………………………………………………………………………

Appendix IV: Questionnaire/Dodoso

	THE OPEN UNIVERSITY OF TANZANIA
	AN ASSESSMENT OF FIRE EMERGENCY PREPAREDNESS AMONG PUBLIC UNIVERSITIES IN TANZANIA SECURITY GUARDS AND CLEANERS – QUESTIONNAIRE/DODOSO

Sehemu A: Taarifa binafsi

(Weka   alam   ya   '√'

Miaka	Chini ya 18	19 - 35	36 - 50	51 - 60	Zaidi ya 60

1) a) Umri:

   b) Jinsi: Mwanaume   Mwanamke

   c) Kiwango cha elimu:

Msingi	Sekondari	Chuo

   d) Eneo la ajira:

Mhudumu	Ulinzi	Usafi

   e) Taasisi:

OUT	UDSM

OUT= Chuo Kikuu Huria cha Tanzania
UDSM= Chuo Kikuu cha Dar es Salaam

   f) Muda wa ajira:

Miaka	1	2	3	4	Zaidi ya 4

Sehemu B: Ufahamu juu ya moto

*(Tafadhali zungushia namba yenye jibu stahiki   ambapo   2=**NDIYO**   na 1=**HAPANA**)*

2) a) Je, ulishawahi kushuhudia ajali ya moto maishani mwako? 2   1

   b) Unafahamu ni nini kifanyike kuzuia ajali ya moto?   2   1

   c) Je, unavifahamu vifaa muhimu vya kuzima moto?   2   1

   d) Je, unaweza kuvitumia vifaa vya kuzima moto?   2   1

   e) Je, unafahamu hatua zozote za uokozi wakati wa ajali ya moto?2   1

3) **Unadhani ajali nyingi za moto zinasababishwa na…**

   (Weka alama ya '√' panapostahili)

   a) Uzembe katika kutumia vifaa hatarishi visababishavyo moto?

   b) Uunganishaji mbovu wa vifaa vya umeme kwenye majengo?

c) Kutokuwa na ufahamu wa kutosha juu ya matumizi ya vifaa hatarishi vinavyoweza kusababisha ajali ya moto?

d) Uhujumu?

e) Mengineyo

……………………………………………………………………………..,

Sehemu C: Programu za mafunzo juu ya ajali za moto na usalama

*(Zungushia mduara kwenye namba chini ya herufi zinazomaanisha: **MK**= Mara kwa Mara, **M** = Mara moja, **H**=Haijafanyika)*

4) Onesha uzoefu wako juu ya uwepo wa program zihusuzo moto, hatari zake, udhibiti na uokozi kwenye chuo unakofanyia kazi kulingana na vipengele vifuatavyo:

	MK	M	H
a) Mafunzo yahusuyo uokozi na usalama dhidi ya moto	3	2	1
b) Elimu kwa jamii juu ya majanga ya moto na uokosi/usalama	3	2	1
c) Mazoezi ya namna ya kujiokoa dhidi ya ajali ya moto	3	2	1
d) Ukaguzi wa vifaa vya uokozi na vya kuzima moto	3	2	1
e) Matangazo/hadhari juu ya moto na hatari zake	3	2	1
f) Umeshawahi kupata mafunzo usalama/uokozi wakati wa ajali ya moto na matumizi ya vifaa vya kuzima moto?	3	2	1

Sehemu D: Vifaa vya kuzima moto, uokozi na usalama dhidi ya moto

*(Zungushia mduara kwenye namba chini ya herufi zinazomaanisha: **V**=Vipo, **H**=Hamna, **S**=Sifahamu)*

5) **Bainisha utayari wa chuo unakofanyia kazi juu ya kujikinga na ajali za moto kulingana na vipengele vifuatavyo:**

	V	H	S
a) Vizima moto	3	2	1
b) Mifumo ya 'alarms'/ving'ora	3	2	1
c) Uwanja kukusanyika baada ya kujiokoa na moto	3	2	1
d) Milango ya dharula ya uokozi	3	2	1

*(Zungushia mduara kwenye namba chini ya herufi zinazomaanisha: **V** =*

*Vinafanya kazi, **H**= Havifanyi kazi, **S**= Sifahamu)*

6) Bainisha ufanyaji kazi wa vifaa vya uokozi na vizima moto katika chuo unakofanyia kazi kulingana na vipengele vifuatavyo;

	V	H	S
a) Vizima moto katika majengo	3	2	1
b) Mifumo ya 'alarms'/ving'ora	3	2	1
c) Uwanja kukusanyika baada ya kujiokoa na moto	3	2	1
d) Milango ya dharula ya uokozi	3	2	1

7) Toa ushauri wako juu ya kuboresha mifumo na usimamizi wa masuala yahusuyo ajali za moto?

a) …………………………………………………………………………………

b) …………………………………………………………………………………

c) …………………………………………………………………………………

Appendix V: Focus Group Discussion Guide

	THE OPEN UNIVERSITY OF TANZANIA **AN ASSESSMENT OF FIRE EMERGENCY PREPAREDNESS** **AMONG PUBLIC UNIVERSITIES IN TANZANIA**
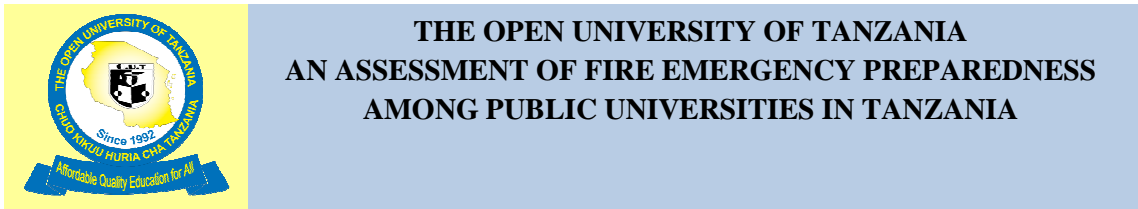
Section A: Awareness on fire incidences

*(Please give your answer whether **YES** or **NO** concerning the following questions)*

1) a) Have you ever witnessed any fire incidence in your lifetime?
   b) Are you aware of what should be done to stop fire?
   c) Do you know the facilities essential for firefighting?
   d) Can you use the facilities for firefighting?
   e) Are you aware of the safety measure to be taken during fire?

2) What do you think are the causes of fire outbreaks in buildings?

Section B: Programmes on fire safety

3) Indicate your experience and view on the presence of the following aspects concerning fire management programmes at your university

   a) Training programmes on the use of fire safety facilities
   b) Community awareness sessions on fire safety
   c) Fire safety parade sessions
   d) Inspection of fire safety gears
   e) Regular updates of fire safety enlightenments
   f) Attended training on fire safety and use of safety gears
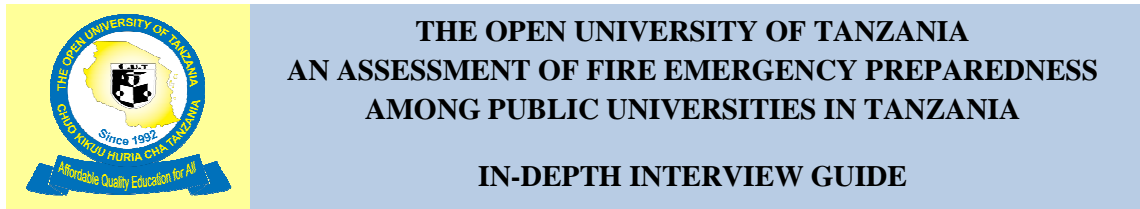
Section C: Fire safety gears

4) Have you ever seen the listed fire safety, fighting and rescue facilities**?**

    a) Fire extinguishers in buildings

    b) Fire detectors/Alarm systems

    c) Sprinkler system and hose reels

    d) Assembly point during fire outbreak

    e) Emergence exits/escape routes in buildings

5) What can you say about the functioning of the following fire safety gears

    a) Fire extinguishers in buildings

    b) Fire detectors/Alarm systems

    c) Sprinkler system and hose reels

    d) Assembly point during fire outbreak

    e) Emergence exits/escape routes in buildings

6) What are your recommendations on the improvement of fire emergency preparedness measures at your university?

    a) ……………………………………………………………………………………

    b) ……………………………………………………………………………………

    c) ……………………………………………………………………………………

    d) ……………………………………………………………………………………

    e) ……………………………………………………………………………………

Appendix VI: In-Depth Interview Guide

	THE OPEN UNIVERSITY OF TANZANIA **AN ASSESSMENT OF FIRE EMERGENCY PREPAREDNESS** **AMONG PUBLIC UNIVERSITIES IN TANZANIA** **IN-DEPTH INTERVIEW GUIDE**

*(Please give your answer whether **YES** or **NO** concerning the following questions)*

1) a) Have you ever witnessed any fire incidence in your lifetime?
   b) Are you aware of what should be done to stop fire?
   c) Do you know the facilities essential for firefighting?
   d) Can you use the facilities for firefighting?
   e) Are you aware of the safety measure to be taken during fire?

2) What do you think are the causes of fire outbreaks in buildings?

3) Indicate your experience and view on the presence of the following aspects concerning fire management programmes at your university

   a) Training programmes on the use of fire safety facilities
   b) Community awareness sessions on fire safety
   c) Fire safety parade sessions
   d) Inspection of fire safety gears
   e) Regular updates of fire safety enlightenments
   f) Attended training on fire safety and use of safety gears

4) Have you ever seen the following fire safety, fighting and rescue facilities at your university**?**
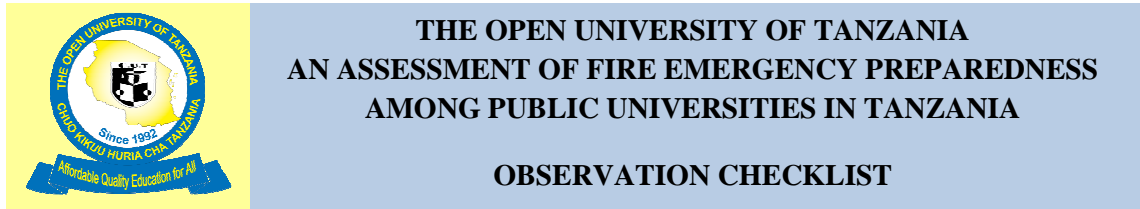   a) Fire extinguishers in buildings

b) Fire detectors/Alarm systems

c) Sprinkler system and hose reels

d) Assembly point during fire outbreak

e) Emergence exits/escape routes in buildings

5) Basing on your experience, are the mentioned fire safety, fighting and rescue facilities at your university functioning?

6) What are your recommendations on the improvement of fire emergency preparedness measures at your university?

a) …………………………………………………………………………

b) …………………………………………………………………………

c) …………………………………………………………………………

d) …………………………………………………………………………

Appendix VII: Observation Checklist

(logo)	**THE OPEN UNIVERSITY OF TANZANIA** **AN ASSESSMENT OF FIRE EMERGENCY PREPAREDNESS** **AMONG PUBLIC UNIVERSITIES IN TANZANIA** **OBSERVATION CHECKLIST**

1. Fire Protection Certification

2. Emergency assembly point (availability and accessibility)

3. Evacuation/Emergency exits

4. Fire Fighting and Protection gears : (Availability and Functionality)

    a. Fire smoke detectors and alarms

    b. Fire extinguishers

    c. Sprinkler systems

    d. Hose reels

    e. Sand buckets

    f. Alarm systems

    g. Fire boots, suits, helmets, hoods, gloves and breathing apparatus

5. Water supply – (tap, borehole, well)

6. Water hydrant within the school (How many).

7. Enlightenments (Posters with fire protection/ rescue   information

Appendix VIII: Research Clearance Letter

THE OPEN UNIVERSITY OF TANZANIA

DIRECTORATE OF RESEARCH, PUBLICATIONS, AND POSTGRADUATE STUDIES

P.O. Box 23409 Fax: 255-22-2668759Dar es
Salaam, Tanzania,
http://www.out.ac.tz

Tel: 255-22-2666752/2668445 ext.2101
Fax: 255-22-2668759,
E-mail: drpc@out.ac.tz

26/02/2014

To Whom it may Concern

RE: RESEARCH CLEARANCE

The Open University of Tanzania was established by an act of Parliament no. 17 of 1992. The act became operational on the 1st March 1993 by public notes No. 55 in the official Gazette. Act number 7 of 1992 has now been replaced by the Open University of Tanzania charter which is in line the university act of 2005. The charter became operational on 1st January 2007. One of the mission objectives of the university is to generate and apply knowledge through research. For this reason the staffs and students undertake research activities from time to time.

To facilitate the research function, the vice chancellor of the Open University of Tanzania was empowered to issue research clearance to both staffs and students of the university on behalf of the government of Tanzania and the Tanzania Commission of Science and Technology.

The purpose of this letter is to introduce to you **Mr Alexander Ndibalema Reg. No. HD/A/182/T.13** is a Masters student at the Open University of Tanzania. By this letter **Alexander Ndibalema** has been granted clearance to conduct research in the country. The title of his research is **"Fire Emergency Preparedness among Public Institutions in Tanzania"**. The research will be conducted in Dar es Salaam Region.

The period which this permission has been granted is from 3rd March, 2014 to 3rd April, 2014.

In case you need any further information, please contact:
The Deputy Vice Chancellor (Academic)
The Open University of Tanzania
P.O. Box 23409
Dar es Salaam
Tel: 022-2-2668820

We thank you in advance for your cooperation and facilitation of this research activity.
Yours sincerely,

Prof Shaban Mbogo

For: VICE CHANCELLOR

THE OPEN UNIVERSITY OF TANZANIA