THE STUDY OF FIRE DISASTER IN FUNGLING MUNICIPALITY OF TAPLEJUNG

A Thesis Submitted to the

APF Command and Staff College

Faculty of Humanities and Social Sciences, Tribhuvan University

In Partial Fulfillment of Master Degree in

Security, Development and Peace Studies

Submitted by

Santosh Bahadur Singh

Sixth Batch (2077-2079)

Roll No: 4009

TU Registration No: 7-2-355-197-99

APF Command and Staff College

Sanogaucharan, Kathmandu, Nepal

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DECLARATION

I hereby declare that the thesis entitled **"The Study of Fire Disaster in Fungling Municipality of Taplejung" submitted** to **Armed Police Force Command and Staff College,** is entirely my original work prepared under guidance of my supervisor.

I have made due acknowledgement to all ideas and information borrowed from different sources in course of preparing this thesis. The result of this thesis has not been presented or submitted anywhere else for the award of any degree or for any other purposes. I assure that no part of the content of this thesis has published in any form before. I shall be solely responsible if any evidences found against my research paper.

This thesis is being submitted to APF Command and Staff College, Faculty of Humanities and Social Sciences, Tribhuwan University in Partial Fulfillment of Master Degree in Security, Development and Peace Studies.

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Santosh Bahadur Singh

TU Reg. No: 7-2-355-197-99

(4 September, 2022)

LETTER OF RECOMMENDATION

This thesis entitled **"The Study of Fire Disaster in Fungling Municipality of Taplejung"** was prepared by **Mr. Santosh Bahadur Singh** under my supervision. The researcher has fulfilled the criteria prescribed by Faculty of Humanities and Social Sciences, Tribhuwan University. I hereby forward this for final evaluation and approval.

…….

Prof. Dr. Ramesh Raj Kunwar

Thesis Supervisor

Date:……..

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LETTER OF APPROVAL

The thesis entitled **"The Study of Fire Disaster in Fungling Municipality of Taplejung"** submitted by **Mr. Santosh Bahadur Singh** for the partial fulfillment of the requirement for the master degree in Security, Development and Peace Studies in Armed Police Force Command and Staff College has been approved by the evaluation committee.

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ABSTRACT

A disaster is a serious problem occurring over a short or long period of time that causes widespread human, material, economic or environmental loss which goes beyond the ability of the affected community or society to cope using its own resources. Disasters are routinely divided into either "natural disasters" caused by natural hazards or "human-instigated disasters" caused from anthropogenic hazards.

Nepal, most disaster prone South Asian country is exposed to a variety of natural hazards that cause disastrous damage to the built environment and result in loss of lives and properties. The most destructive natural hazards in Nepal are floods, landslides, earthquakes, and urban fire. Among different districts of Nepal, Fungling municipality of Taplejung is one of the most affected local level by fire-induced disaster. Fungling municipality recurrently is facing a Fire induced disaster till the date. The community efforts, government endeavor and current practice is not working properly to mitigate the risk mitigation of Fungling municipality.

This study mainly focuses on the status of fire disaster in Nepal in general and cause and effect of Fungling Municipality of Taplejung in specific. So, to find the solution of given question, the study was focused on: To find the major causes of the repeated Fire disaster in Fungling Municipality of Taplejung, To find out the key factors that reduce or mitigate the Fire disaster in Fungling Municipality of Taplejung and To support to develop the roles and responsibility of local government and community people in risk reduction of Fire disaster in Fungling Municipality.

For the research, the researcher have adopted qualitative research approach and adopted primary and secondary data as the source of information. The total respondent are taken to 30 community people and FGD/KII to key focal person of government offices. The finding reveals that the major causes of Fire disaster in Fungling municipality are negligence of community people, lack of proper planning by government, capacitated team for fire control, unplanned urban settlement, lightening and low quality of house wiring etc.

Keywords*: Disaster, Fungling, Recovery, hazards, negligence, settlement*

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ABBREVIATIONS AND ACRONYMS

APA	American Psychological Association
APF	Armed Police Force
BCPR	Bureau For Crisis Prevention and Recovery
CBS	Central Bureau of Statics
CBO	Community Based Organization
CDO	Chief District Officer
CHS	Core Humanitarian Supports
CSO	Civil Society Organization
COVID-19	Corona Virus Disease 2019
DAO	District Administration Office
DRM	Disaster Risk Management
DRR	Disaster Risk Reduction
DRRM	Disaster Risk Reduction And Management
ECHO	Environmental Camp For Helping Others
FGD	Focused Group Discussion
GDP	Gross Domestic Product
GLOFs	Glacial Lake Outburst Floods
IFFN	International Forest Fire New
IFRC	The International Federation of Red Cross And Red Crescent
INGOs	International Governmental Organizations
IOM	International Organization of Migration
IPA	Interpretative Phenomenological Analysis
ISCG	Inter Sector Coordination Group

KII	Key Informant Interview
LDMC	Local Disaster Management Committee
LDRMC	Local Disaster Risk Management Committee
LDRMP	Local Disaster Risk Management Plan
MOHA	Ministry of Home Affairs
MoSTE	Ministry of Science, Technology And Environment
NA	Nepal Army
NDRRMA	National Disaster Risk Reduction Management Authority
NGOs	National Governmental Organizations
NP	Nepal Police
NTFP	Non-Timber Forest Products
O&M	Operation And Management
OECD	The Organization For Economic Co-Operation And Development
PSA	Public Service Announcement
RSS	Rastriya Samachar Samiti
UNDP	United Nation Development Programme
USD	United States Dollar

CHAPTER I

INTRODUCTION

1.1 Background

A disaster is a serious problem occurring over a short or long period of time that causes widespread human, material, economic or environmental loss which exceeds the ability of the affected community or society to cope using its own resources (UNDP, 2004). Disasters are routinely divided into either "natural disasters" caused by natural hazards or “human-instigated disasters “caused from anthropogenic hazards. However, in modern times, the divide between natural, man-made and man-accelerated disasters is quite difficult to draw.

Examples of natural hazards include: avalanche, coastal flooding, cold wave, drought, earthquake, hailstorm, heat weave, hurricane, ice storm, landslide, lightening, string wind, tornado, tsunami, volcanic activity, wildfire, and winter weather. Anthropogenic hazards can be grouped into societal hazards (criminality, civil disorder, terrorism, war, industrial hazards, engineering hazards, power outage, fire; hazards caused by transportation and environmental hazards).

IFRC (2021) defined disaster that disasters are serious disruptions to the functioning of a community that exceed its capacity to cope using its own resources. Disasters can be caused by natural, man-made and technological hazards, as well as various factors that influence the exposure and vulnerability of a community. Natural hazards are naturally occurring physical phenomena. They can be: Geophysical: a hazard originating from solid earth (such as earthquakes, landslides and volcanic activity), Hydrological: caused by the occurrence, movement and distribution of water on earth (such as floods and avalanches), Climatological: relating to the climate (such as droughts and wildfires), Meteorological: relating to weather conditions (such as cyclones and storms), Biological: caused by exposure to living organisms and their toxic substances or diseases they may carry (such as disease epidemics and insect/animal plagues). Man-made and technological hazards are events that are caused by humans and occur in or close to human settlements. They include complex emergencies, conflicts, industrial accidents, transport accidents, environmental degradation and pollution.

Developing countries suffer the greatest costs when a disaster hits – more than 95% of all deaths caused by hazards occur in developing countries, and losses due to natural hazards are 20 times greater (as a percentage of GDP) in developing countries than in industrialized countries (Gautam, 2020).

Nepal, most disaster prone South Asian country is exposed to a variety of natural hazards that cause disastrous damage to the built environment and result in loss of lives and properties. The most destructive natural hazards in Nepal are floods, landslides, earthquakes, and urban fire (Gautam, Thapa, Pokharel & Lamichhane, 2021). Young and fragile geology, very high relief, steep slopes, variable climatic conditions, and active tectonics trigger several natural hazards in Nepal every year. Furthermore, marginally planned and over-populated settlements are the major factors that aggravate the impacts of disaster. For example, 13 different types of natural hazards resulted in 2,940 disaster events between 2015-2016 (MoHA., 1999). These events caused 9,708 fatalities; among them, 92.5% were due to the 2015 Gorkha earthquake. Furthermore, about a million houses were either partially or fully damaged and the total economic loss was estimated to be nearly 7 billion USD (MoHA, 2017). It is estimated that more than 80% of the total population can be exposed to natural hazards such as floods, landslides, windstorms, fires, and earthquakes. Nepal lies in the 20th, 4th, 11th, and 30th rank worldwide in terms of multi-hazards, climate change- related hazards, earthquakes, and flood risks, respectively, as depicted by the 2004 study (UNDP/BCPR, 2004). Disastrous events such as the 1993 flood, 2014 landslide, 2015 earthquake, and 2017 flood highlight the severity of multi-hazard risk in Nepal.

There are several examples of one type of natural hazard resulting in another hazardous process in Nepal. For example, a massive landslide that occurred on 2 August 2014 at Jure village in central Nepal blocked the Sunkoshi River creating a landslide dam, which breached after 37 days with an outburst flood that damaged some houses more than 6 km downstream along the valley. The 2015 Gorkha earthquake and aftershocks triggered many landslides and avalanches, the most notable among such was the debris avalanche that buried several villages in the Langtang Valley. Furthermore, Nepal is prone to serial hazards that occur frequently and regularly, for example, floods and landslides occur every monsoon season (June–September).

The MoHA disaster data archives maintain loss and damage data for a total of 16 kinds of active disasters in Nepal. These disasters in alphabetic order are, *Asina Pani* (heavy rainfall with hailstones), avalanche, boat capsize, cold wave, drowning, earthquake, epidemic, fire,

flood, heavy rainfall, high altitude, landslide, lightning, snow storm, wind storm, excluding the "other" category. This illustrates Nepal's exposure to multiple hazard risks. Thirteen different types of disaster have been recorded during the past two years.

Globally, Nepal ranks 4th and 11th in terms of its relative vulnerability to climate change and earthquakes, respectively (Maplecroft, 2018). In part, this is because Nepal is in a seismically active zone with a high probability for a massive earthquake. The country is among the 20 most disaster-prone countries in the world, both natural and man induced. Out of 21 cities around the world that lie in similar seismic hazard zones, Kathmandu city is at the highest risk in terms of impact on people. More than 80 percent of the total population of Nepal is at risk of natural hazards such as floods, landslides, windstorms, hailstorms, fires, earthquakes and Glacial Lake Outburst Floods (GLOFs). Nepal, as one of the country's most vulnerable to climate change, is invariably exposed to water induced disasters and hydro-meteorological extreme events such as droughts, storms, floods, inundation, landslides, debris flow, soil erosion and avalanches. The MoSTE identifies that current climate variability and extreme events have led to major impacts and economic costs in Nepal, emanating not only from floods and landslides but also from rainfall variability on agriculture (rainfed agriculture, soil erosion, droughts) and Glacial Lake Outburst Floods (GLOFs) (MoSTE, 2014).

Nepal is such a country, characterized as it is by a rugged topography with high relief, complex geological features, concentrated rainfall, and a dense population. A larger part of the country is vulnerable to natural hazards such as earthquakes, landslides, debris flows, floods, drought, and other associated phenomena. A variety of physiographic, geological, ecological, and meteorological factors contribute to these hazards; whereas demographic factors such as rapid population growth, improper land use, economic underdevelopment, and the resulting dire poverty and widespread ignorance of the possibilities and means of mitigation exacerbate them (Sharma, 1990).

As mentioned, that there are several types of disaster, Nepal is recurrently affected by urban and forest fire which is one of them to cause the fatalities resulted by the disaster. As Nepal becomes more urbanized, fires have become increasingly devastating hazards. Literally in minutes, a fire can take dozens of lives and destroy hundreds of livelihoods. A large conflagration causes great social, economic and environmental. Historically, Nepal's largest fires occurred at Singha Darbar in 1971, the Bhirkuti paper factory in Nawalparasi District in 1984, and the Bhutanese camps of Jhapa in 2011. In 2008 and 2010 respectively the districts

of Tehrathum and Ilam were devastated by fire and in 2009, a forest fire rage in Ramechhap District (MoHA, 2017).

Massive fire incidents have been recurring in Fungling bazaar of Taplejung over the years. In February 2021, 152 houses were destroyed and 393 households were displaced in Taplejung. 45 houses destroyed and 129 houses were displaced due to the fire on 28 March 2004. On 2013, 12 houses were destroyed and 35 families were displaced and details are given below:

Table 1.1*: Houses destroy and family's displacement by fire in Fungling Muncipality*

Year	**Houses Destroyed**	**Families Displacement**	**Address**
28 March 2004	45	129	
8 February 2013	8	18	Sherpa Tole-8
4 November 2013	4	17	Tukreebazaar
23 March 2015	37	145	Fungling -4 Tokmedanda
11 May 2020		29	Taxi Counter, Old Bank line
2 February 2021	49	55	Meringden Muncipality, Muncipality

Note: The data for houses destroy and family's displacement by fire in Fungling Municipality by Nepal News, 2021

In this context, this paper indented to analyze the fire disaster in Nepal by taking the case study of Fungling Municipality of Taplejung district. The study also tries to find out the major causes of fire disaster, role and responsibilities of local government and community people in risk reduction of such disaster. Both primary and secondary data were analyzed that were collected from various sources including the fieldwork from the Fungling Municipality.

1.2 Statement of the Problem

As the multi-disaster-prone vulnerable country, Nepal is facing problems of disaster repeatedly. Earthquake, fire outbreaks, landslide, avalanches, flood are the key hazards to affects the human life and loss of property in Nepal. Located in the far Eastern range of Nepal, massive fire incidents have been recurring in Fungling municipality of Talplejung over the years. So, this study mainly focused on recurring Fire Outbreak of Fungling Municipality of Talplejung districts. As the one the prominent disaster recorded after Eathquake in Nepal, it studied by the scholar, intellectual, policy makers and relevant stakeholders. This study tried to find the response of given question as the statement of the problem which are given below:

a) What are the major causes of the repeated Fire disaster in Fungling Municipality of Taplejung?

b) What would be the factors that reduce or mitigate the Fire disaster in Fungling Municipality of Taplejung?

c) What would be the roles and responsibility of local government and community people in risk reduction of Fire disaster in Fungling Municipality?

1.3 Objectives of the Study

This study mainly focused on the status of fire disaster in Nepal in general and cause and effect of Fungling Municipality of Taplejung in specific. So, to find the solution of given question, the study was focused.

a) To find the major causes of the repeated Fire disaster in Fungling Municipality of Taplejung.

b) To find out the factors that reduce or mitigate the Fire disaster in Fungling Municipality of Taplejung.

1.4 Rationale of the Study

Among multiple disaster, Fire disaster and outbreak is one of the challenging issues of Nepal. Human loss, wildlife animal loss and loss of property along with alarming signing of air pollution are the key negative results of fire outbreak. Multiple causes are assumed behind the Fire outbreak. Though, the incidents of fire outbreak is increasing day by day.

This study tries to find the causes of Fungling Fire Outbreak which is repeatedly happening in the past. Human loss, loss of property and cause of life-long disabilities are the key results of outbreak. The study also tries to find the gap between policies and its implementation along with behavior change of community people. The management response of Local Disaster Risk Management Committee will be reviewed in this study.

1.5 Limitation of the Study

This study does not cover the overall concept of disaster that are happening in Nepal. It only focused on the Fire disaster, especially in Fungling Municipality of Taplejung. Fire disaster and interventions of mitigation are taken as the prime areas of study. Ongoing health hazard of COVID-19, monsoon seasons, landslides, flood, behavior of the respondents and their knowledge on the subject matter were other limitations of the study.

CHAPTER II

REVIEW OF LITERATURE

Previous literature of Disaster, Fire disaster and its effects in community in general were reviewed to provide the theoretical knowledge on Disaster, Fire Disaster, Disaster Risk Reduction and other factors which directly related with it. The critical review of Local Disaster Risk Management Plan (LDRMP), DRRM Act 2074 BS, and its implementation process were taken as the reference literature for this study. The literature review chapters consist of following sections in this study.

2.1 Disaster

Shaluf (2007) classified disaster into three types: natural, man-made, and hybrid disasters. He believes that aforementioned three types of disaster covers all the definition of disaster and disastrous events. Though disasters have different characteristics and impacts; however, disasters have a common element, which is their severity. Natural disasters are those disasters that result from natural forces. Man-made disasters are those disasters that result from human decisions, errors, negligence and technical fault. Hybrid disasters are those disasters that result from both natural and man-made causes. Subsequent disasters are those disasters that result from natural and/or man-made disasters. He elaborates epidemics could be a disaster or a subsequent disaster.

Hyogo Framework for Action (2005) is taken disaster as the similar to hazard and defined as "A potentially damaging physical event, phenomenon or human activity that may cause the loss of life or injury, property damage, social and economic disruption or environmental degradation. Hazards can include latent conditions that may represent future threats and can have different origins: natural (geological, hydro meteorological and biological) or induced by human processes (environmental degradation and technological hazards). Generally, disaster is understood as hazards in the different parts of the globe. Loss of life, property damage, social and economic disruption or losses are the key features of the disaster. Disaster is not only happened one time, it may occur multi-time based on its nature and geographical faults underneath.

World Bank (2009) stated that climate change such as droughts, floods, storms and heat waves are the major causes of disasters that directly affects the human and wild life and development process. In this definition, heat waves may one of the major causes of the fire outbreak in the forest and human settlements.

UNDP (2010) in several studies and assessments point out that disasters have a disproportionate impact on the poor in developing countries, and that disaster risk is fundamentally associated with poverty levels. Besides short-term effects such as direct economic losses, disasters affect long-term human development and human security. The low resilience of the poor is further undermined by weak or absent social-protection measures and the low prevalence of disaster insurance in most countries. While urban and rural areas are areas translates into disaster risk because of the vulnerability of rural livelihoods. The diversity in the structure of rural societies and economies and their interaction with the environment make livelihoods more susceptible to disasters. Besides, the lack of safe housing, infrastructure and public services in poor rural areas that should protect households from earthquakes, cyclones and major floods also increases risk.

Gaiha, Hill, & Thapa, (2010) evaluated that the deadliness of earthquakes rose sharply and of extreme temperatures more than moderately while that of most others (droughts, floods, storms and wildfires) declined. While developing countries bear the brunt of disasters, ironically these are also the countries which have made fewer efforts to adapt their physical environments to mitigate the impact of such disasters and to insure themselves against disaster risks. If interventions do not go beyond short-term relief and shy away from rebuilding of livelihoods and reconstruction from a longer-term perspective, communities/regions highly vulnerable to natural hazards (e.g., low lying coastal areas are highly vulnerable to floods) are likely to fare worse with recurrent catastrophes. While our evidence points to growing vulnerability to natural disasters and their grave implications for human security, a challenge for development assistance is to combine speedy relief with durable reduction in vulnerability. If our analysis has any validity, there are indeed some grounds for optimism.

Barton (1969) natural disaster is a consequence when a natural hazard (e.g., volcanic eruption or earthquake) affects humans and/or the built environment. Human vulnerability, caused by the lack of appropriate emergency management, leads to financial, environmental, or human impact.” In his understanding, natural disaster is happened repeatedly. Due to lack of proper

management plan, effective policies and its implementation it directly increases the human vulnerability.

Disaster Risk Reduction and Management Act 2074 has categorized disaster into natural and man-made disaster. The act defines that natural disaster means that type of disaster which is induced by hailstorm, avalanche, and outburst of glacial lake, flood, landslide, draught, hurricane, volcano eruption, cold air, lightening, earthquake, fire outbreak and other similar disaster. And, in other hand, man-made disaster or non-natural disaster means that type of disaster which is induced by pandemic, famine, fire outbreak, virus attack, threat of flu, snake bite, wildlife animal attack, industrial accident, gas outbreak, chemical leakage, environmental pollution, deforestation and loss of huge physical infrastructure (DRRMA, 2074). In this definition of disaster, both man-made and natural disaster has vital role to influence the evolution of humanity and other environmental loss.

Oxford Learner Dictionary (2022) defines that disaster means an unexpected event, such as a very bad accident, a flood or a fire, that kills a lot of people or causes a lot of damage. Similarly, *Marriam-Webster Dictionary* (2022) states that disaster is a sudden calamitous event bringing great damage, loss, or destruction. The *Cambridge Dictionary* (2022) defines disaster as a sudden event that causes a lot of damage, such as a very bad fire, storm, or accident. To summarize the meaning of disaster based on above definition shared by renowned dictionaries in the world, disaster is an unexpected, undesirable, sudden calamities and event that ultimately results a very bad, unfavorable, loss, destruction, and causalities.

2.2 Disaster Management Cycle

Carter, (2008) defines that Disaster Risk Management includes sum total of all activities, programmes and measures which can be taken up before, during and after a disaster with the purpose to avoid a disaster, reduce its impact or recover from its losses. The three key stages of activities that are taken up within disaster risk management are as follows:

a) Before a disaster (pre-disaster)

Pre-disaster activities those which are taken to reduce human and property losses caused by a potential hazard. For example, carrying out awareness campaigns, strengthening the existing weak structures, preparation of the disaster management plans at household and community

level, etc. Such risk reduction measures taken under this stage are termed as mitigation and preparedness activities.

b) During a disaster (disaster occurrence).

These include initiatives taken to ensure that the needs and provisions of victims are met and suffering is minimized. Activities taken under this stage recalled emergency response activities.

c) After a disaster (post-disaster)

There are initiatives taken in response to a disaster with a purpose to achieve early recovery and rehabilitation of affected communities, immediately after a disaster strikes. These are called as response and recovery activities. The Disaster risk management cycle diagram (DRMC) highlights the range of initiatives which normally occur during both the Emergency response and Recovery stages of a disaster. Some of these cut across both stages (such things as coordination and the provision of ongoing assistance); whilst other activities are unique to each stage (e.g. Early Warning and Evacuation during Emergency Response; and Reconstruction and Economic and Social Recovery as part of Recovery).

The DRMC also highlights the role of the media, where there is a strong relationship between this and funding opportunities. This diagram works best for relatively sudden-onset disasters, such as floods, earthquakes, bushfires, tsunamis, cyclones etc, but is less reflective of slow-onset disasters, such as drought, where there is no obviously recognizable single event which triggers the movement into the Emergency Response stage. According to Warfield (2008) disaster management aims to reduce, or avoid the potential losses from hazards, assure prompt and appropriate assistance to victims of disaster, and achieve rapid and effective recovery. The disaster management cycle illustrates the ongoing process by which governments, businesses, and civil society plan for and reduce the impact of disasters, react during and immediately following a disaster, and take steps to recover after a disaster has occurred. Appropriate actions at all points in the cycle lead to greater preparedness, better warnings, reduced vulnerability or the prevention of disasters during the next iteration of the cycle. The complete disaster management cycle includes the shaping of public policies and plans that either modify the causes of disasters or mitigate their effects on people, property, and infrastructure. The mitigation and preparedness phases occur as disaster management improvements are made in anticipation of a disaster event. Developmental considerations play a key role in contributing to the mitigation and preparation of a community to effectively confront a disaster. As a disaster

occurs, disaster management actors, in particular humanitarian organizations become involved in the immediate response and long-term recovery phases. The four disaster management phases illustrated here do not always, or even generally, occur in isolation or in this precise order. Often phases of the cycle overlap and the length of each phase greatly depends on the severity of the disaster.

i) **Mitigation** - Minimizing the effects of disaster. Examples: building codes and zoning; vulnerability analyses; public education.

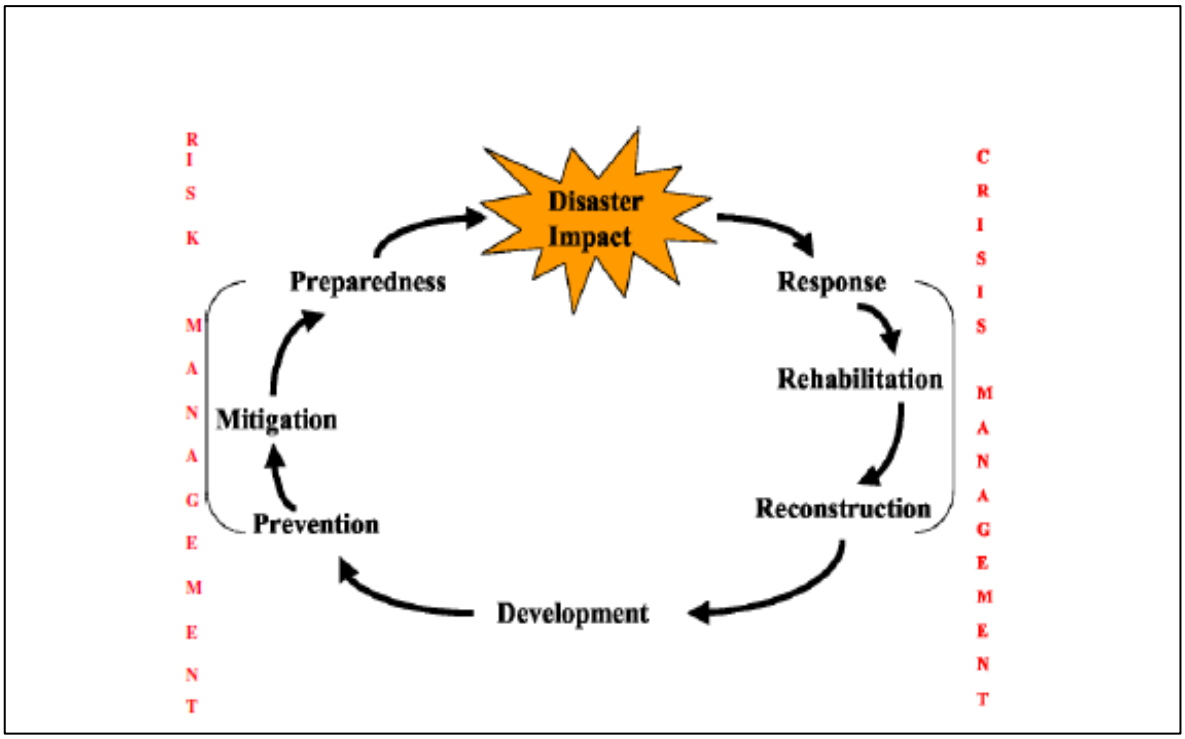
ii) **Preparedness** - Planning how to respond. Examples: preparedness plans; emergency exercises/training; warning systems.

iii) **Response** - Efforts to minimize the hazards created by a disaster. Examples: search and rescue; emergency relief.

iv) **Recovery** - Returning the community to normal. Examples: temporary housing; grants; medical care.

To analyze the scope of disaster management in the revised context, it should be studied the cycle of the phenomenon. Disasters are as old as human history but the dramatic increase and the damage caused by them in the recent past have become a cause of national and international concern. Over the past decade, the number of natural and manmade disasters has climbed inexorably.

Figure 2.1*: Disaster Cycle Management*



Note: Risk Management should be done before disaster (prevention, mitigation and preparedness), during disaster (response, rehabilitation, reconstruction) and post disaster(development) from disaster cycle management by W. Carter ,2018

2.3 Fire Disaster in Africa, South Asia and Nepal

International Federation of Red Cross and Red Crescent Societies (2021) published the situation analysis of the Fire incidents of Central African Republic: Fire and Strong Winds in Bakala on 24 and 25 February 2022. As per the report, the rapid assessment made by volunteers and local authorities on 27 February after the first fires shows 191 families directly affected by fires, i.e., 955 people, including 171 men, 385 women and 399 children. In this population, 11 pregnant women, 12 nursing mothers, 36 elderly people and 17 disabled people were recorded. Similarly, assessment report claims that shelter is the first priorities of the humanitarian supports where their homes and shelters were totally or partially damaged. Secondly, Food is taken as the basic need for the fire affected people after fire outbreak. And, health, water, hygiene and sanitation, protection are other priorities areas for the support respectively.

Inter Sector Coordination Group (ISCG) (2021) under the International Organization of Migration (IOM) reports that 48,300 people were directly affected by the Fire Outbreak of

Crox's Bazar, Bangladesh. Three major camps are collapsed that resulted as the 10,100 households were out of shelter; whereas 92,000 individuals were directly and indirectly affected by the Fire incidents in the month of 22nd March, 2021 around 3 pm. The report find that theft and robbery (60 Per cent) is taken as the concern of security after the incidents of fire. Similarly, under the section of top five concerns of Children and Women's safety, almost respondents (100 per cent) said that area of children and women is unsafe. And, under the question of top three priority areas, Shelter is taken are the most prioritized and food and security is taken respectively. It means that after the incidents of Fire Outbreak in huge scale, the government and humanitarian support agencies should be focused on the sector of shelter, food, security, safest areas for children and women will be the key concerns for the humanitarian supports and policies makers in the context of Nepal too. The post-disaster situation created by any disasters is similar.

In the context of Nepal, fire outbreak is one of the major disasters among earthquake, landslides, flood, avalanches, glacial lake outburst floods (GLOFs), wildlife attacks and draught. Located in the central of the Himalaya range, Nepal is one of the most disaster-prone countries in the world due to its topography and climatic condition. Earthquakes, landslides, floods, fire, thunderbolts are the major causes of disaster events that caused major damaged in the past, weakening the fragile ecosystem of the country. Economic Vulnerability Analysis shows that Nepal exhibits the largest losses due to large exposure at risk and the high level of hazards. As a matter of these phenomena not only cause loss of lives and properties, but also pose severe threats to physical infrastructure, and also disrupt economic development.

Of the total households of the country, nearly 78 percent households are agro-base households. In the rural areas thus, about 86 percent of the population lives in the houses made of earthen wire, stone and wood. In Nepal, houses for residential purpose are developed in cluster basis which are more susceptible to catching fire and spreading over there immediately due to close connectivity especially in the dry season. Wildfire is another cause of natural disaster which usually occurs during dry season, especially in the mid hill areas. In the Terai region, fire, including the wildfire occurs mainly in the dry season (Nepal Disaster Risk Reduction Portal).

Kunwar, R. M. (2006) finds that 58.06% of the total causes of forest fires were deliberate. It was followed by negligence (22%) and accidental (20%). With growing human populations that have moved into forest-urban interface areas, increasing number of fires were human induced, inadvertently caused for example, by discarded cigarette butts of illegal loggers,

passer-by, cattle herders and grazers, NTFPs and fuel wood collectors. Forest fires were started deliberately by livestock owners, shepherds, grazers who ignite forest to promote new green flushes of growth for their animals which was a key threat in Terai. All these causes are linked with agriculture. Some forest fires are set by hunters and poachers to clear vegetation for a better sight of prey namely wild pig (Sus scrofa), hare (Lepus nigricalis), deer (Axis axis), wild fox (Cuon alpinus), etc. The fire is also set for the growth of tender shoots which entices the wildlife. It has been used to scare wild animals, snakes, mosquitoes, insects, to clear footpaths and to control pests. Other reasons behind the deliberate burning are removal of plant species in competition with desired timber species and control of soil-dwelling pathogens and weeds.

Carelessness of smokers and of passerby is a pertinent source of forest fire in the Terai. Grazers and the fuel wood collectors, sometimes unintentionally throw the burning butts of cigarette inside the forests. The burning buds can easily catch fire on the dried leaves and twigs, especially in summer season. Some people or children set fire for roasting the NTFPs (pine cone), prey (birds, small animals, etc.) and do not put it out which can outbreak. Forest fires are also caused by ignorance of poachers, encroachers, and charcoal traders (Upreti, 2003).

Traditional communities use fire as a tool for burning organic matter and agricultural residue to prepare the ground for next crop cultivation. Such fire can spread from agricultural lands to the forest, from the forest to the agricultural lands, or from the forest or agricultural lands into villages and vice versa. Abandoned cooking fire in the forest and burning garbage have also been reported by local people and concession staffs to set forest fire. Annual roadside clearing and debris burning (usually from March to June) can also cause forest fire.

Wildfires have both natural and man-made origins. While weather can both enable and trigger wildfires, human activities, such as nature tourism, land clearance for agriculture or energy distribution, are often the contributing factors. Environmental factors, such as temperatures, wind and slope inclinations as well as the amount and moisture content of dead fuel, are all factors that can make wildfires become worse. So are poor practices in land and soil management. The spread of wildfires is also affected by forest and land management practices as well as fire suppression measures. Climate change is expected to exacerbate the future risk of wildfires. As global temperatures are set to increase and precipitation in some regions to decrease, while in others to increase, the risk of climate-related extreme weather events is expected to rise. Heat waves and droughts, in combination with strong winds, are expected to expose many forests more frequently and more severely to fires, likely extending the duration

of the fire season and increasing the area at risk of large fires. At the same, time greater variability in precipitation cycles – including years with above and below average precipitation levels – have increased the volume of fuel available to be burned in low precipitation years. Finally, invasive species that thrive in warmer conditions also increase the amount of deadwood, which in turn drives wildfire risks. Increasing the resilience of forests against present and future risks requires the adaptation of current wildfire management policies and practices to climate change.

To effectively adapt to the impacts of a changing climate in wildfire management, measures across different policy areas need to be well aligned and implementation on the ground reinforced by the different actors involved in the prevention of and response to wildfires. For example, land use management should take into account the likelihood and patterns of wildfires arising from changing climatic conditions. To increase the resilience of forests against wildfires, natural resource management can make use of a range of measures, including the diversification and more natural growth of forests as well as sylvicultural practices that improve the structure, composition and functionality of forests, which includes reducing the amount of deadwood. In some high-risk regions these types of adaptation measures will be essential to ensuring the continued availability of insurance coverage for damages and losses from wildfires (OECD 2020).

Fires also reduce the biological diversity of the forests to a great extent. In addition, fires degrade the soil, inducing flood and landslide damage. Forest fires make the entire countryside hazy, thereby reducing aesthetic values for eco-tourism during the dry season. Forest fire management is not practiced in Nepal. The community forest user groups control forest fires in their own forests, although they do not have a plan for systematic prevention and control of fires (IFFN, 2002).

Forest fires and fire incidents in Taplejung and Panchthar districts of Province 1 lead to loss of forest cover, wildlife animals, endangered bird and plant species, properties and human lives every year during the dry windy season. In the year of 2022, both districts have been reported several fire incidents in human settlements and community forest areas but the concerned authorities have so far been unable to prevent such incidents. The onset of the dry season has brought heavy winds to the region, causing forest fires to spread further is one of the major causes of fire outbreak. And, the negligence of the people is another leading cause behind the high number of fire incidents in the district. The locals sometimes light fires in the forest to

clean a patch for better grass growth or to chase away wild animals. But these fires often enter human settlements and destroy lives and properties (Kathmandu Post, 2022). This has made it difficult for the locals and the authorities to douse them in time. Due to hot weave, windy season and dense forest with difficulties areas to reach, and lack of fire engines with accessible road and infrastructure, the fire outbreak seems out of control of fire fighters, villagers and security forces. Ultimately, the control of fire outbreak is experienced due to natural rain in this season.

Nepal is battling its worst forest fires in years with smoke wafting across its mountains and souring the air as it settles into the bowl that holds capital city Kathmandu. Wild fires were burning in at least 60 places across 22 of Nepal's 77 administrative districts in the previous year. The growing levels of pollution across the country that lies nestled between India and the Tibet region of China is caused by the forest fire in the context of Nepal and India. Forest fires often erupt in Nepal during the January-May dry season, when villagers burn dry leaves in the woodlands to prompt fresh grass growth for their cattle (Reuters, 2021).

Gautam, D. (2020) mentioned that in Nepal, fire is a recurrent disaster, one that takes heavy toll in terms of lives and properties. According to him, urban areas are more vulnerable as houses are old, made with wooden joists, and placed in close proximity. Such houses are more hazardous as fire easily leaps from one house to the next, spreading rapidly and damaging entire settlements. Each year, various types of fires are responsible for causing heavy loss and damage. Data from the Ministry of Home Affairs (1971- 2018) revealed that in the last 50 or so years there have been a total of 12,694 fire incidents that have killed 1,755 and injured 2,176 individuals, affected 265,962 families, and damaged 90,044 houses. The estimated property loss associated with climate-induced disasters was approximately NPR 6.84 billion, and about 94% of that loss can be attributed to fire incidents. Though ECHO, the UNDP and the government have contributed to building fire preparedness and response mechanisms, their efforts have not been adequate and such mechanisms are still not prioritized by the government, private sector, or civil society.

He further stated that effective fire preparedness must include mechanisms to douse fires by building the capacities of fire fighters, alerting rescue operations, and using a variety of fire attack and suppression methods. There must be one fire fighter for every 2000 and one fire engine for 28000 population as per international standard, however they are inadequate and most of them are old in Nepal. The annual budgets allocated by local governments are grossly

inadequate for the Operation and Management (O&M) of fire engines. Though policy spells out that an O&M fund should be established from grants received from federal and provincial governments, the annual budget of the local government, amounts received from adjacent local governments, and grants received from civil society, humanitarian agencies and the private sector, very little money is actually collected.

Fire management entails preparedness and response planning. Preparedness includes fire risk and threat mapping, the analysis and dissemination of information about wind flow, and the installation of fire detectors and extinguishers. Fire response plans should include (i) warning, call, and notification procedures, (ii) the alert at the incident site, (iii) plan activation and debriefing, and (iv) analysis and deactivation but no fire station at present adheres systematically to such provisions Many local governments have no clear standard operating procedures to regulate fire engines within and beyond their physical boundaries. Policy provisions for fire preparedness and about the roles and responsibilities of various government sectors are also limited. Though the Fire Prevention and Protection Act (1997), the Local Self-Governance Act (1999), and the Fire Brigade Operation and Management Guidelines (2010) addressed some provisions for fire preparedness and response, officials at every tier of government have only limited knowledge about those provisions.

2.4 Fire Disaster Management Practice in Local Government

a) Constitution of Nepal, 2015

Nepal's Constitution 2015 mentions disaster risk management in the country for the first time and it has clearly assigned DRM as a concurrent responsibility of different tiers of governments, particularly the local governments (MoHA, 2017). Article 51 stipulates the policies to be pursued by the state. The Constitution further states that the State shall pursue policies relating to, among several other issues, protection, promotion and use of natural resources. Article 51 also allows Government to make policies related to advance warning, preparedness, rescue, relief and rehabilitation in order to mitigate risks from natural disasters. Article 273 of the Constitution gives the President several emergencies' powers. Article 273 (2) says, "if there arises a grave emergency in a State because of a natural calamity or epidemic, the concerned state government may request the Government of Nepal to declare a state of emergency in respect of the whole of the State or of any specified part thereof." The Constitution of Nepal has clearly stipulated that DRM is a shared responsibility of all levels of

governments. The Constitution states that natural and man-made disaster preparedness, rescue, relief and rehabilitation responsibility falls under the concurrent power/jurisdiction of federal and provincial government.

b) Local Government Operation Act, 2017

It outlines the roles and responsibilities of rural municipalities, municipalities, district council's/district coordination committees, and provincial coordination councils. This Act entrusts the local level units with the responsibilities of formulating their own laws, by-laws, regulations; levying taxes; and raising funds, in addition to the judiciary responsibilities. It defines the following disaster management responsibilities under the jurisdiction of urban and rural municipalities:

i) DRM related local policy, law, guideline and implementation, oversight and monitoring of plan.

ii) Local level disaster preparedness and response plan, early warning, SAR and prepositioning and distribution of relief materials and coordination.

iii) Local river embankment, landslide control, and management and control of rivers.

iv) Mapping of disaster risk area and identification of settlements at risk and relocation.

v) Support, coordination and cooperation between and among federal, provincial and local communities and institutions and private sector.

vi) Establishment of Disaster Management Fund, operation and resource mobilization.

vii) Formulation, implementation, monitoring and oversight of local level projects on DRM.

viii) Local level DIMS, research and assessments.

ix) Emergency operation system at local level.

x) Operation of community-based DRM programs.

xi) Other functions related to disaster management

c) Disaster Risk Reduction and Management Act, 2017

In many respects, the Act is considered far progressive than the existing Natural Calamity Relief Act, 1982. First, its approach to disaster is more comprehensive and it recognizes both risk reduction and management as integral parts of the task. Second, instead of committee-

based coordination mechanism, the Act has proposed a clear multi-tier institutional structure of DRM (at the national, provincial, district, local/municipal, and the community-based). Third, there is also a clear provision of Disaster Management Fund at the federal, provincial and local levels. Fourth, the law has given the security forces the responsibility of search and rescue under civilian command. Fifth, the Government of Nepal has the ultimate responsibility of declaring disaster emergency if circumstances so emerge (Nepal Law Commission, 2022).

The Act has developed two kinds of DRM structures: One with policy and administrative decision making and supervisory roles (consisting mainly of Disaster Risk Reduction and Management National Council and Executive Committee), and the other with more implementation roles (consisting mainly of National Disaster Risk Reduction and Management Authority, and the provincial, district and LDMCs). In tune with the federal structure of the country, the DRRM Act has envisaged a multi-tier DRRM structure, comprising of the DRRM National Council on top, followed by PDMC, DDMC, and finally the LDMC as the lowest units. There is also a provision for forming community-based Disaster Preparedness and Response Committees.

The Act provisions an executive committee which is chaired by the minister of Home Affaires of Nepal Government. The major role of the committee is to implement the policies and plan laid down by the council. Though, the committee shall be responsible for the implementation of functions, duties and powers as per below:

i) Prepare national policy and plan on disaster management and submit the same to the Council for its approval;

ii) Approve integrated and sectoral policies, plans and programs on disaster risk reduction, disaster response and disaster recovery subject to the national policy and plan laid down by the Council, and implement or cause to implement the same;

iii) Approve strategic plans and programs on disaster management and implement or cause to implement the same;

iv) Suggest the roles of the public, private, Non-Governmental Organizations, including all entities and organizations on disaster management to be performed thereto and ensure that matters related to disaster management are incorporated in such organizations' policies, plans and programs;

v) Suggest the roles and responsibilities of the Ministries, Departments and other agencies of Government of Nepal on disaster management,

vi) Enhance the institutional capacity of the Federal, Provincial, District and Local levels on disaster management,

vii) Ensure that disaster management related matters are incorporated in the curriculum of schools up to higher level,

viii) Lay down a sectoral contingency plan for reduction of disaster risks, and implement and cause to implement the same;

ix) Identify risk pronged areas for reduction of threatening impacts of natural disasters, and prepare and cause to prepare risk and threatening mapping of such areas;

x) Prepare risk sensitive development and land use planning, and implement or cause to implement the same;

xi) Assess or cause to assess disaster risk of public infrastructures,

xii) Relocate or cause to relocate the people and communities in safe zones who are living along the riverbanks, in steep slope lands threatening to landslide and inundation threatening areas or any other disaster risk threatening areas;

xiii) Lay down a special plan and program for women, children, senior citizen, Dalit, marginalized groups and communities, people with disabilities who are at disaster risk, and implement and cause to implement the same;

xiv) Identify the most vulnerable communities and implement or cause to implement the risk reduction programs;

xv) Ensure that a national early warning system is developed and operated;

xvi) Lay down a national framework on disaster response, and implement or cause to implement the same;

xvii) Make arrangement for immediate relief operations to the disaster affected people,

xviii) Lay down necessary rules of procedure and standards on activation automatically the institutional mechanisms to carry out primary functions immediately, including search, rescue and relief operations in time of disaster, and ensure the implementation;

xiv) Make immediate provision of emergency medical treatment to disaster victims by setting up adequate settings and services in public and private hospitals or health centers,

xx) Lay down necessary standards on the roles for mass media to be followed in time of disaster and ensure the implementation;

xxi) Provide suggestions to Government of Nepal on matters to national policies on immigration, customs and quarantines to be followed in time of disaster,

xxii) Ensure that the activities in relation to economic recovery, employment creation, and income generation for livelihoods are implemented;

xxiii) Ensure that disaster recovery programs in the disaster affected areas are implemented;

xxiv) Ensure that international, bilateral and multilateral assistance for disaster management are implemented subject to the prevailing law;

xxv) Ensure the implementation of other functions on disaster management as such may be prescribed by Government of Nepal or the Council,

xxvi) Ensure the implementation of other functions in relation to disaster management as such may be prescribed.

In the Act of Disaster Risk Reduction and Management 2017, policy formulation of disaster risk reduction and management, approval of sectoral plan and policies, capacity enhancement of federal, provincial and local level in disaster management, school level disaster related curricula development, identification of disaster prone areas in community, development of special plan for women, children, senior citizen, Dalit, person with disabilities, and marginalized people and communities, development of disaster recovery programme are the key important functions of committee to reduce the risk of before and after disaster.

2.5 Disaster Risk Reduction and Management Rules and Regulation 2019

Under the provision of Section 47 laid by Disaster Risk Reduction and Management Act, 2017, the government of Nepal has prepared the Disaster Risk Reduction and Management Rules, 2019. In this study, the role and responsibilities of district and local level disaster management committee is relevant which are shared below:

Subject to the functions, duties and powers of the District Disaster Management Committee as specified elsewhere in the Act, the additional functions, duties and powers of the Committee shall be as follows:

a) Coordinate with the Authority, the Provincial Disaster Management Committee and the Local Disaster Management Committee in relation to operation and management of disaster management activities;

b) Lay down a disaster preparedness action plan for reduction of disaster risk and implement the same;

c) Make necessary arrangement to store search and rescue materials necessary for the use of up to fifty rescue workers;

d) Mobilize and manage communications sets to transmit information in time of disaster;

e) Prohibit in transmitting such information such as may create unnecessary panic or fear to the citizen in time of disaster;

f) Coordinate and monitor the activities carried out by the national and international Non-Governmental Organizations active in the field of disaster management in a regular basis.

Subject to the functions, duties and powers of the Local Disaster Management Committee as specified elsewhere in the Act, the additional functions, duties and powers of the Committee shall be as follows:

a) Lay down plans and programs on reduction of disaster risk and disaster management along with action plan, and implement or cause to implement the same;

b) Make necessary arrangements for reduction of disaster risk in development related works by assessing, mapping and analyzing disaster risks at local level;

c) Ensure that the national building codes, building construction standards, including other approved guidelines or standards are followed, by monitoring the same;

d) Make provision for capacity building of the staffs and volunteers to be deployed for disaster management;

e) Arrange the safety equipment and insurance necessary for the protection of persons involved in rescue operations in time of disaster;

f) Make available search and rescue materials to the security agencies on demand pursuant to sub-section (5) of section 18 of the Act;

g) Use traditional knowledge, skills, and know-how for disaster management, and make necessary provision for mobilization of local communities;

h) Lay down disaster risks reduction methods and processes, including the insurance and social security, and implement or cause to implement the same;

i) Establish a sector-wise team for disaster management and mobilize the same.

j) The Local Disaster Management Committee may establish a disaster preparedness and response committee at ward levels and mobilize the same.

2.6 Research Gap Analysis

The responsibility of disaster management falls under the domain of local governments. However, still there is some lacking on the role and responsibilities of local government in disaster management. Different available researches and studies are more focused on the different aspects of disaster management, they are found to be less concerned with the aspects of fire disaster. However, there are few works, study and article related with fire disaster in Nepal. This study tries to fulfill the research gap on the state of finding major causes of recurring fire outbreak, its mitigation measures and roles and responsibilities of local government with the case study of Fungling Muncilapality in Taplejung district.

CHAPTER III

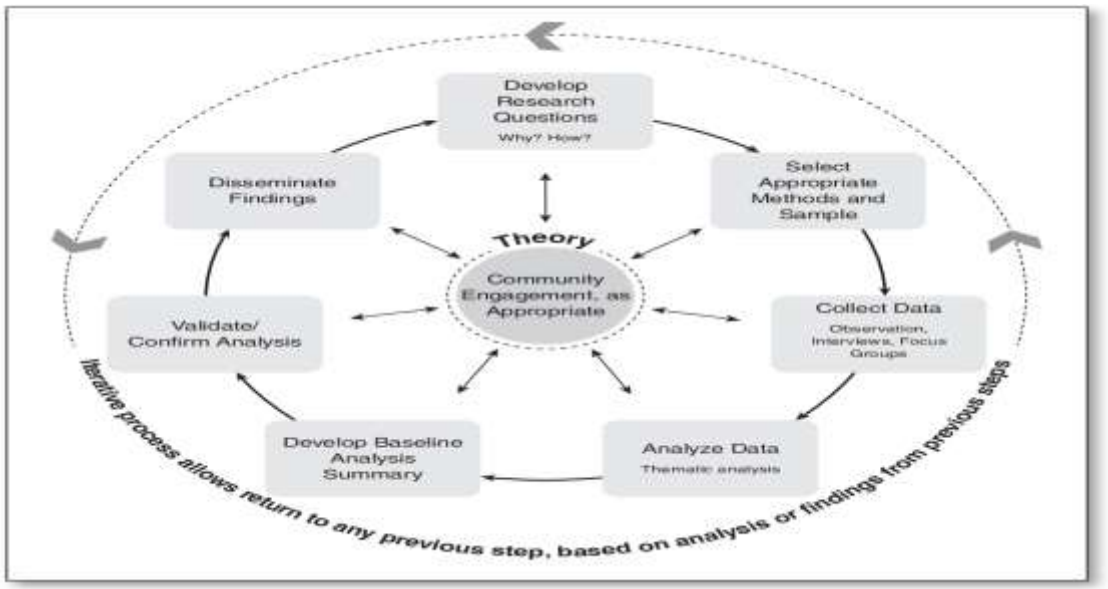
RESEARCH METHODOLOGY

This chapter deals with the methodology of the study. Basically, how research or thesis paper is designed for the depth study of identified problem is mostly guided by this section. The hypothetical research question will be proved by the qualitative data followed by quantitative data. The primary and secondary data sources are used for the justification of the study. For the qualitative data interpretation, qualitative content analysis, interpretive phenomenological analysis (IPA) and thematic analysis are entertained as the technique then collect a data through interview. Basically, this section deals with following sub-chapter in the study.

3.1 Research Approach

Based on the nature of study, the researcher treated qualitative method as the prime method of the study followed by quantitative methods. But, in this study, mostly data or information as collected though qualitative methods such as interview, observation, KII and FGDs.

Figure 3.1*: Research Design*



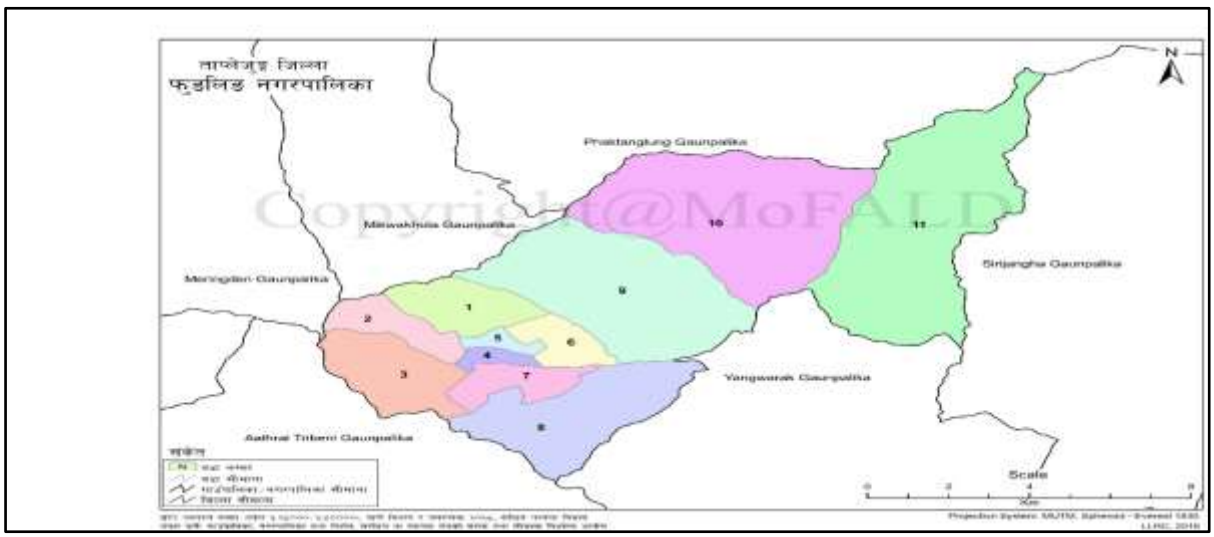
Note: Adopted and modified from ResearchGate on August 12, 2022

3.2 Area of Study and Site Selection

The study covered Fire Disaster in Nepal, focusing on Fungling municipality of Taplejung district, has regularly occurrence case of fire disaster. The Researcher visited the Fungling municipality and stayed six days and collected primary data by semi-structured interview and focused group discussion with elected representatives, bureaucracy officials, and local residents of municipality.

Fungling Municipality, as the changed name of Taplejung Municipality is located in the eastern part of Nepal. The Government of Nepal had decided on 8th May, 2014 AD (25th Baishakh, 2071 BS.) to establish it as the only one municipality in Taplejung district. Central Bureau of Statics of Nepal has published a preliminary census data of Nepal in 2079 BS. As per the data, the total population of Taplejung is 120,359 individuals are living right now whereas the population of male is 60,524 and female is 59,835. Gender ratio of Taplejung district is 101.15 whereas average family member is 4.22. The average family member of Taplejung district is lower than national average family member (4.32). The total household in this district is recorded as 28,530 in the census data published by CBS (CBS, 2021).

Figure 3.2: *Map of Fungling Muncipality*



Note: Map of Fungling municipality by MoHA, 2022

Taplejung district has many potentials in tourism sector which is one of major sector of Nepalese economy. In this district, Red Panda, an endangered animal of wildlife conservations, snow leopard, black bear, rhododendron (28 species) and other flora and fauna are found as the

major source of attraction. The climate data of Fungling Municipality defines that June (24.8 Celsius) is the hottest month of the year whereas January (14.0 Celsius) is the coldest month simultaneously (Department of Hydrology and Meteorology of Nepal). So, most of the case of Fire outbreak which are naturally or manmade is happened in the month of June. The study also finds that April, May, June and July are the months which has high risk of fire outbreak in Fungling municipality and periphery of it.

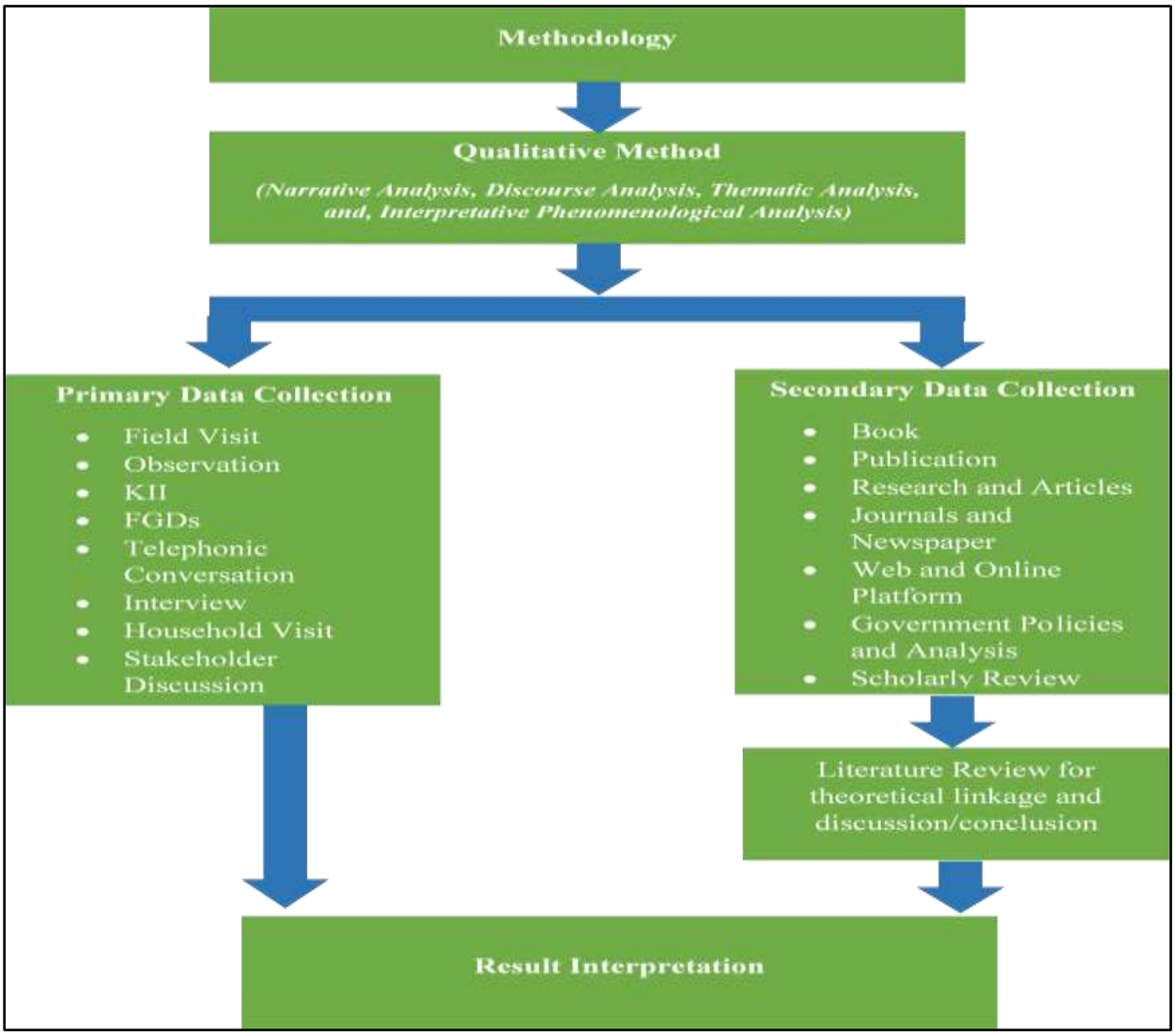
3.3 Research Sample

Sample size for the study is taken from the method of systematic sample and took the information on fire disaster of entire municipality. To collect the data and information, research visited the study areas, met to community people and collect quantitative and qualitative data. For the qualitative data, FGD and KII would be conducted and will analyze the finding of the study.

3.4 Sources of Data

Mostly data in this study is taken primary data followed by the secondary data. For the primary data, the researcher visited the study area and consult with community people, government stakeholders, concerned officials, and ward representatives for the data. The previous study of Fire disaster in Fungling or other part of Nepal along with policies related with fire management would be taken as the literature review of the study.

Figure 3.3*: Data Collection Method*



Note: Figure of data collection method was developed by researcher own

a) Primary Data

The primary data for the study was based on the interview questions for the community people of Fungling municipality, District Administration Office and Municipal Officials as the KII and focused group discussion. The primary data was collected by face-to-face and telephone interview using questionnaire by the researcher and Focused Group Discussions. The researcher also collected primary data from the study area observation. The researcher designed the questions well to understand easily by the respondents and asked questions effectively and clearly. The researcher briefed about the purpose of the study to the respondents.

Collected data was checked and verified at the end of work. Any inaccuracy and inconsistency were corrected accordingly. To control the data quality, researcher regularly verified the data during the data collection time.

b) Secondary Data

The secondary data was taken from journal articles, books, government and intergovernmental organization's reports, research papers, websites etc. Likewise, relevant works, studies/publications, the laws and regulations promulgated by the government on disaster risk management also was the sources of secondary data. The report on previous disaster relief works also was considered.

3.5 Ethical Consideration

An ethical consideration in research refers the norms and standards for conduct. Norms and values, ethics and discipline, honesty and integrity, carefulness and confidentiality, respect for international property rights, openness and honor, legality and valued to respondents are consider as ethical consideration. During this research, code of ethics of American Psychological Association (APA) 7th edition is followed strictly.

The research is purely academic and there is no sponsorship for the research purpose. Acknowledgement and intellectual property rights are reserved as per the law of the research during the entire process. This study promised to protect the confidentiality of the individuals and organizations respectively. There is no dishonest practice in the entire research. The sources and data are kept confidential as per the fundamental ethic of research. Therefore, this research is conducted by adopting the general principals of ethics as responsibility, justice, and the respect for the intellectual property rights, conscious on multiple roles, rule of consent, confidentiality and privacy. Researcher acknowledged and cited for the guidance and intellectuality for their credit to carry out this research during entire research period. The identity is kept anonymous, if necessary, the pseudonym is use to protect the identity in qualitative parts.

CHAPTER IV

FINDINGS AND DISCUSSION

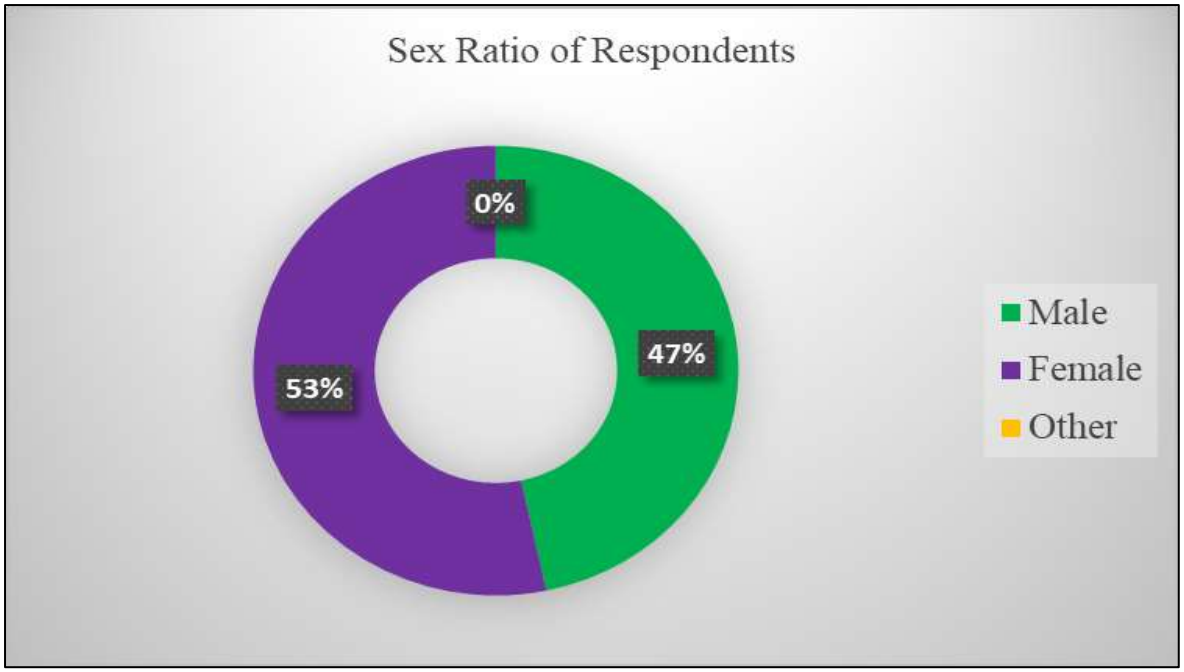
In this section, mostly data is presented in multiple forms like pie-chart, table, bar graph, histogram along with its analysis in the context of the study. For the study, mostly primary data is used followed by the secondary data respectively. As the method of the study, mostly qualitative data are collected to justify the rationale of the study. As the tools of the qualitative data, household visit, interview, key informant interview, focus group discussion are applied in this study. The analysis tools of qualitative data are referenced by Narrative Analysis, Discourse Analysis, Thematic Analysis and Interpretative Phenomenological Analysis (IPA) in this study.

This study is based on both primary and secondary data. Mostly primary data are used to make conclusion of the research. The collected data was rationally described, analyzed and presented to demonstrate the Fire Disaster of Fungling Municipality of Tapalejung. The American Psychological Association (APA) 7th edition is taken as the reference for the citation and referencing of the documents. The data was processed through editing, coding, classification, creating data file, programming and tabulation.

In this study, qualitative method is mostly used for the information collection. After approval from Faculty of Humanities and Social Science, APF Command and Staff College, the researcher visited the field of Fungling Municipality of Taplejung. Meeting and discussion with the community people of maximum wards of municipality and government officials accordingly. In-person interview with local people on the subject of Fire Outbreak in the periphery of Fungling Municipality was discussed in depth. Approved open-ended question is prepared in English language in very first, then translated version in Nepali language is taken as the guiding document for the discussion, interview and focused group discussion. The researcher facilitated the discussion based on questions and note taker took the information in details in documents.

The overall findings of the study are presented given below:

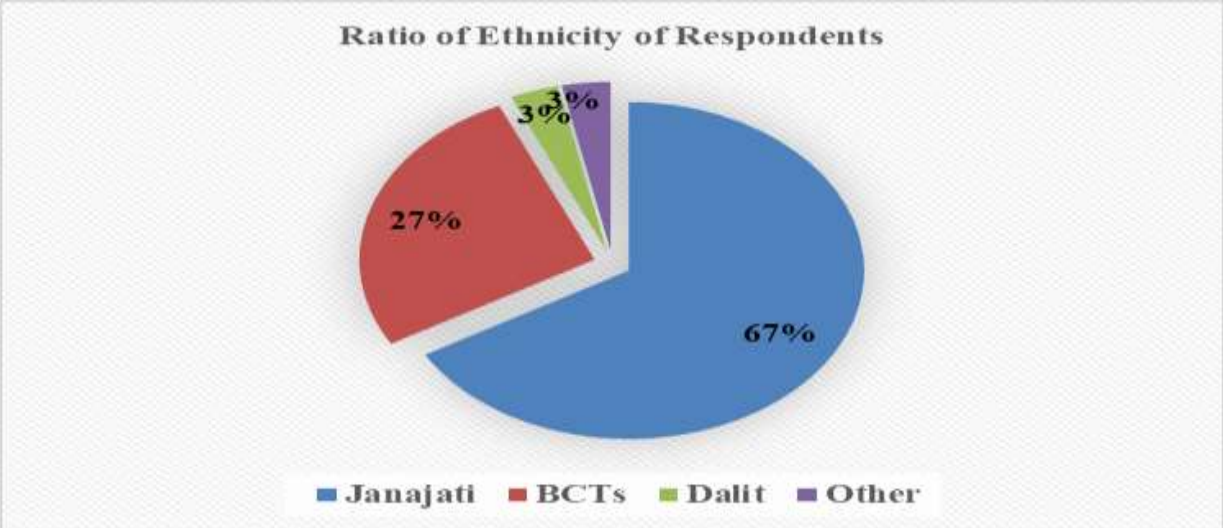
Figure 4.1: *Sex Ratio of Respondent*



Note: Figure of sex ratio of respondent by field survey, 2022

The given figure indicates the number of respondents based on the sex. In this study, 53 per cent respondents are female; whereas 47 per cent are male. And, the group of 'Other' is vacant. This figure simplifies that most of the respondents are female which are more vulnerable and susceptible due to any type of disaster.

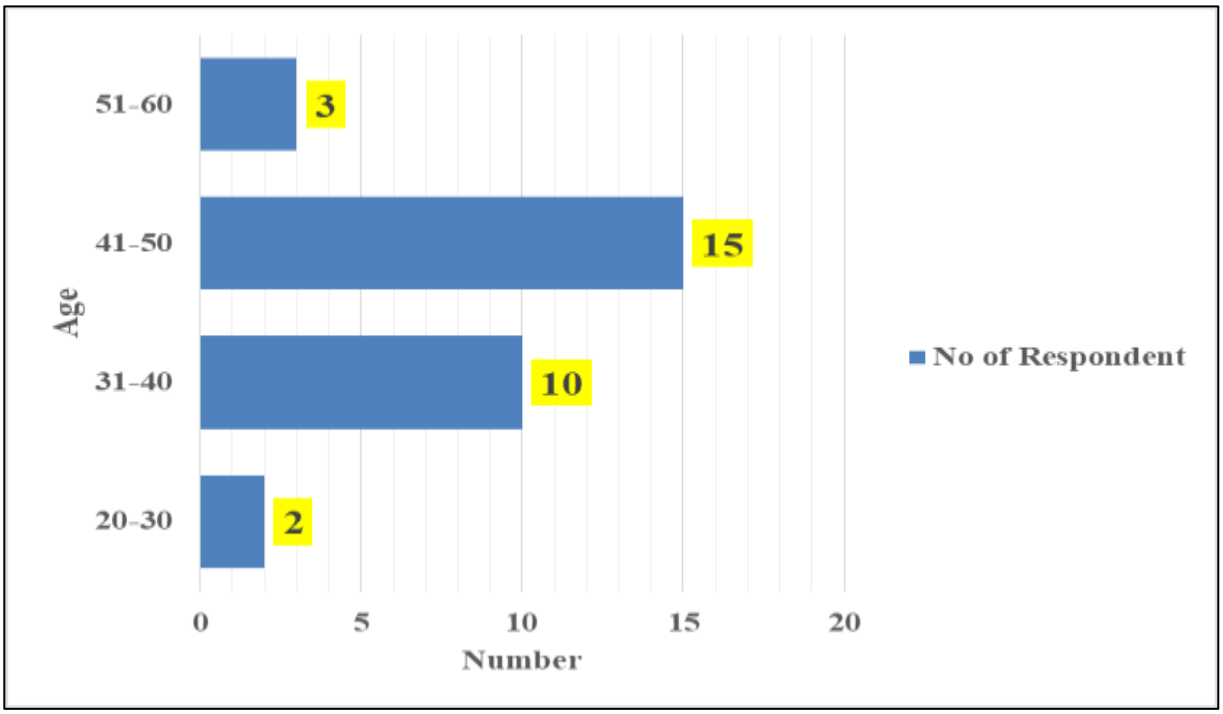
Figure 4.2: *Ratio of Ethnicity of Respondents*



Note: Figure of ratio of ethnicity of respondent by field Survey, 2022

The above figure states that 67 percent of respondents are from Janajati followed by Brahmin and Chhetri community. And, least number of respondents is taken from Dalit community and one respondent is taken from other communities. The dense population of indigenous people in Taplejung is also reflected in this study too.

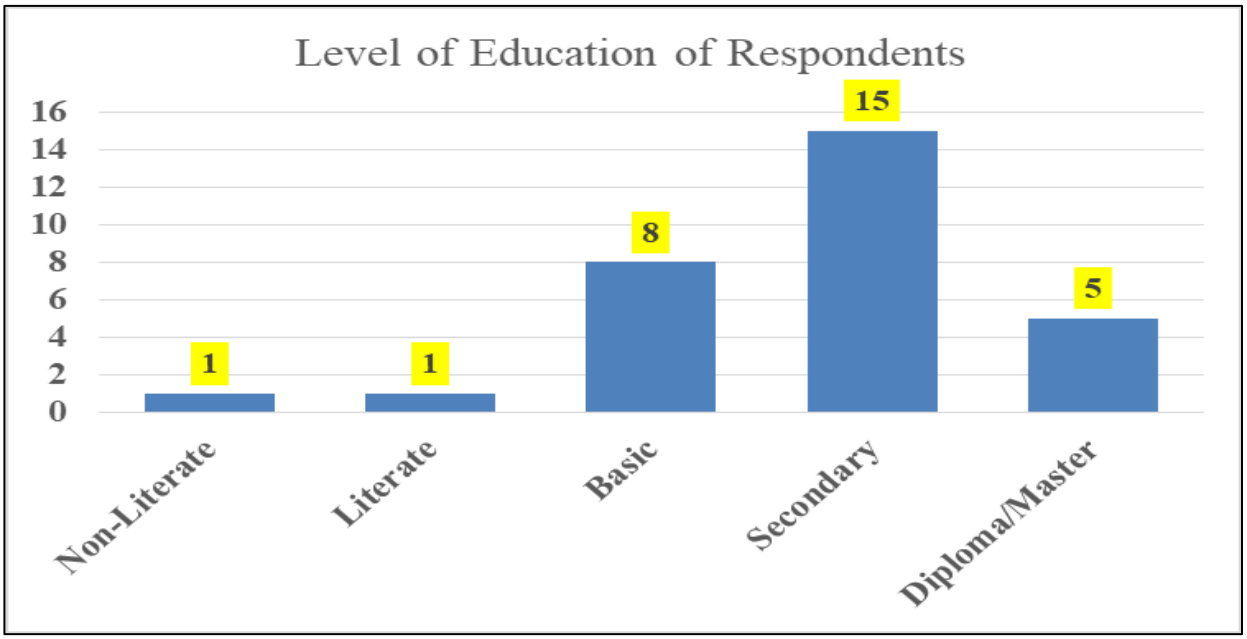
Figure 4.3*: Age of Respondents*



Note: Figure of age of respondent by field survey,2022

The above figure demonstrates the age-group of respondents in this study. It means that it helps to understand the sensitivity of disaster by different age-group. In this study, 15 respondents are involved from the age-group of 41-50 years which people from age-group is the main work force in the community. And, 10 respondents are taken from the group of 31-40 years.

Figure 4.4*: Level of Education of Respondents*



Note: Figure of level of education of respondent by field survey,2022

The above figure highlights the education status of respondents in this study. The researcher of the study has taken the household visit interview of all respondent whereas 15 respondents are participated who have received a secondary (9-12) level education followed by Diploma/Master level education (5). The number of respondents simply indicates the overall social structure and represented it through different modes such as education, occupation, age, and ethnicity. Here, the data shows that the researcher is tried to know the sensitivity of Fire Disaster from the different group to gauge the difference in-between of them.

4.1 Major Disasters in Fungling Municipality

Based on the National Data of Disaster, Earthquake is the more fatal disaster than others in the context of Nepal. Flood, Fire Outbreak, Road Accident, Wild-animal attack and pandemic are taken as the major prominent disaster in Nepal. In the context of Fungling Municipality, one of the respondents of community people and the representative from District Administration Office claimed as:

> *In the context of Fungling Municipality, due to multiple reasons, Fire Outbreak is taken as the mostly-repeated disaster in the district. The data of household visit and community group discussion also reported that 25 respondent out of 30 has answered*

> *as Fire Outbreak as the key disaster in Fungling municipality. It means that around 83 % of sample respondent are mostly suffered by the case of Fire disaster. Similarly, landslide and flood are the top-second disaster in this municipality. And, this study also finds that thunderbolt is the one of the risky disaster which is directly linked with Fire Outbreak in the forest of Taplejung districts.*

The study also finds that Fire Outbreak is repeatedly happened in these areas. In 2001, huge fire outbreak was happened and engulfed 45 houses within hours in Birendra Chok (Field Researcher, 2022). Similarly, in 2015 similar fire outbreak is recorded in Tokme Dada Bazar and damaged 35 houses (Field Researcher, 2022). In a last incident of Fire disaster, around 50 Lakhs property was damaged and no human loss. The local government has allocated a budget in FY 2079/80 in Disaster Management Fund (20 Lakhs, facilitated by Federal Government), to formulate a Disaster Management Response (2 Lakhs from Fungling Municipality and 3 Lakhs from federal government) (Fungling Municipality Budget (2022). From the lens of risk analysis of disaster, the allocated budget for the risk management is very low and not sufficient.

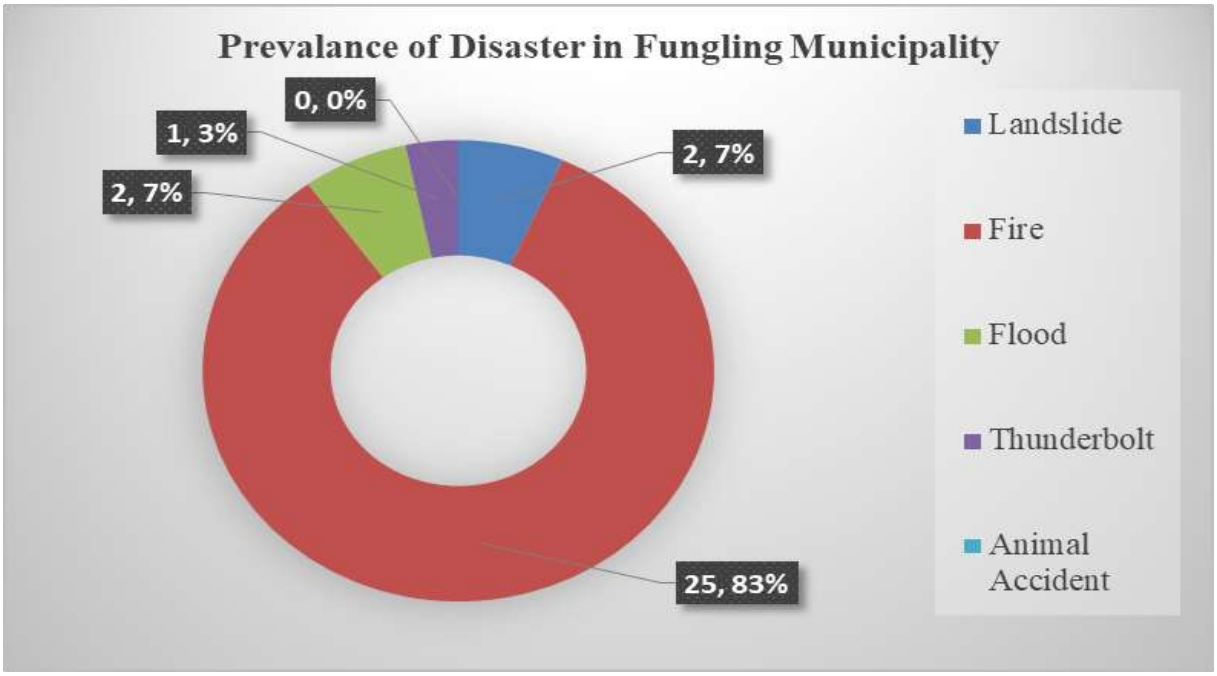
4.2 Mostly Repeated Disaster in Fungling Municipality

In Fungling municipality of Taplejung district, the study finds that the case of fire is happened repeatedly in compare with other type of disaster. In 2021, 152 household were collapsed and 393 household were displaced due to massive outbreak (Field Survey, 2022). Similarly, in the before of last year (2021), 29 households were displaced due to fire outbreak in the line of Old Bank Road. No human casualties were recorded in the two massive Fire Outbreak. And, the data from Fungling Municipality stated that;

> *Most of the cases of fire outbreak in Fungling municipality are recorded in the office of municipality. In compare with other disaster such as Earthquake, landslide, flood, lighetning or thunderbolt, animal attack, Fire Outbreak leads the data than other. So, federal government and Fungling municipality have to work more on it. The community awareness, well urban settlement, replace of wooden house, formation of community level disaster management committee, disaster management fund, resource management of humanitarian supports, capacity enhancement of municipal response team and community-based working group etc. should be areas of prioritized by the municipality and stakeholders.*

The municipality has a multiple task to be performed to the people. Disaster management is the one of the major assignments of government-led organization, CSO, CBOs and other. So, concerned stakeholders of disaster should be focused on policy provisioned programme and activities in community level and budgeting for these activities too.

Figure 4.5*: Prevalence of Disaster in Fungling Municipality*



Note: Figure of prevalence of disaster in fungling by field survey, 2022

In the above figure, the information of Disaster in Fungling Municipality is collected from 30 individuals of villages and headquarter. The researcher visited their house and asked that what is the major disasters in your village? Among 30 respondents, almost respondent answered that Fire Outbreak is the major disaster in their village. And, landslides and flood in riverside areas are another disaster that are occurring in this study area.

The researcher visited some wards and interviewed through telephone of others wards and took information which are required. Due to rainy season and road blocked, the researcher couldn't visited all the wards. In the conversion, the response of respondents in the questions of the prevalence of disaster are given below:

> *Out of eleven wards, the respondent from nine wards claimed that Fire Outbreak is the major disaster in their wards. They are repeatedly suffering from the incident of fire*

and lost property every year. Economic vulnerability is seen since past decade long due to repeated case of fire. It is the one of the cause to family migrations.

4.3 Major Causes of Fire Disaster in Fungling Municipality

Fire is one of the major causes of disaster that ultimately affects the human life, properties, wildlife animal, ecosystem, and air pollutions. The productivity of soil is damaged by Fire Outbreak in Fungling Municipality of Taplejung district. Where the question is asked about the prevalence of disaster in Fungling municipality, 83 per cent of respondent answered that the Fire Disaster is the major man-made disaster. The data of the study suggests that the federal, provincial and local government have to initiate to formulate disaster related policies in province and local government, well planning of urban settlement, construction of disaster response infrastructure such as fire engines, disaster response team in local level, rescue and recovery programme in community level.

In this study, the researcher mostly used the narrative analysis, discourse analysis, thematic analysis and interpretative phenomenological analysis (IPA) for qualitative analysis of the discussion and conversion. The researcher visited to CDO, mayor of municipality, ward chairperson, key leaders of Fungling municipality for the purpose of the study. Based on analysis, the major root causes of the Fire Outbreak in Fungling Municipality are given below:

a) Negligence by the family member

Negligence is the one of the major root causes of the fire outbreak in Fungling municipality. Based on the narrative analysis of previous fire incidents in these areas, community people and their family member do not care properly the fire in windy season especially on January to June of the year.

Among the total respondent of the study, 70 per cent respondent said that negligence of the people is the major cause of the fire outbreak in the town. In the questions of what are the examples of negligence behavior practiced by the people in the town, poor electric house wiring, huge production of local alcohol, lack of proper management of candle lite, and rental house/room to the larger family are the identical causes of fire outbreak in Fungling municipality. Similarly, wanders in the forest areas do not care properly and throw matchstick without proper

management after smoking. It causes in the hot and windy season to fire outbreak in dense jungle which is uncontrollable by the human resource of municipality.

b) Unplanned urban settlement

Lack of proper urban settlement is one of the major causes of Fire Outbreak in Fungling Municipality. Especially in the urban areas, old wooden houses are existing right now and they are not repaired and retrofitted. The federal government has no proper policies and plans for the urban settlement in the case of Fungling Municipality. Dense population, interlinked wooden houses, lack of proper electric wiring in these houses, lack of proper usage of cooking-gas and least knowledge of fire outbreak and management in community people are the critical causes of Fire Outbreak in Fungling Municipality.

In this study, nearly 20 per cent of respondent said that lack of proper urban settlement is the major cause of Fire disaster. Urban poor settlement is the second leading causes of it in the context of Fungling municipality.

c) Lightning and thunderbolt

The study finds that lightning and thunderbolt has a significant role for the fire outbreak in the district of Taplejung. Due to geological faults, the lightening has been occurring regularly in Fungling municipality.

The data of the study also shows that lightening or thunderbolt is the one of the key causes of Fire induced disaster in Taplejung district. Around 20 percent respondent put it as the root cause of the fire outbreak in the question of what is the root cause of fire outbreak in Fungling municipality. So, this study also indicates that the federal, provincial and local government should focus on technical study of lightening and find the ways of mitigation of loss in these areas. The respondent suggests that proper earthing of electricity and knowledge on this subject will help to some extent for the loss mitigation of the lightening shocks.

d) Usage of wood as the source of fire energy

The study finds that extensive use of firewood is one of the identical causes of Fire Outbreak in Fungling municipality. The unplanned settlement, wood houses, lack of proper quality electric wiring along with excessive use of firewood help to induce fire disaster in this municipality. Most of people are using firewood in the kitchen and other purposes is comparatively unsafe than other mode of energy in the kitchen.

Around, 10 percent respondent marks in multiple answer of the guiding questions of the study. So, along with previous identical causes of fire outbreak, lack of proper use of firewood is one of the key root causes of fire outbreak in Fungling municipality.

e) Lack of Disaster related knowledge or community awareness

Most of the respondents stated that they are not aware about any community awareness conducted by local government so far. Around 10 percent respondent stated that:

They are unaware about the disaster-related community awareness and knowledge. So, local government has to do more things in the sector of community awareness in disaster such as Fire, Earthquake, Landslide, Flood, Lightening or Thunderbolt etc.

f) Seasonal reason

Dry season and hot weave which are directly caused by global warming are the one of the causes of bush fire in the study areas. 10 % out of total respondents said that seasonal cause is the one of the major cause of the Fire Outbreak in Fungling Municipality.

Especially, during the month of Jan-June, the mostly fire incidence are happening the Nepal, not only in Taplejung district. So, the proper plan for the mitigation of risk of disaster should be made and implemented in community level respectively.

The study also finds that Fungling Municipality did not make Palika Level Disaster Risk Management Plan (LDRMP) yet. The discussions and FGDs also finds that community level disaster risk reduction committee are needed to form in Fungling Municipality. To mitigate the risk of Fire Outbreak, community level risk reduction management plan and programme should be conducted by Nepal Government, Fungling Municipality, INGOs, NGOs and CSOs. Community awareness programme should be conducted regularly in the season of Fire Outbreak. Specially, during the month of March-June, mostly fire outbreak is happened in the context of Nepal.

4.4 The Role of Community People, Federal Government and Local Government to mitigate the risk of Fire disaster

The study finds that the role of federal and local government is vital to mitigate the risk of disaster and post disaster phase. 95 % out of total respondent (30 respondent) has answered that the federal and local government should manage or implement disaster related programme and policies strictly. The supervision of implementation should be strictly followed by the respective organizations and individuals.

The role of community people is also important for mitigating the risk of Fire Outbreak in Fungling Municipality. Chairperson of local youth club expressed as:

> *Community people is lacking proper knowledge of disaster right now. The municipality has no specific programme and activities for enhancing the capacity of local rescue team, municipal staffs and community people. No community-based committee has formed yet. The local government has to promote awareness programme of disaster in society. Within total respondent, only 3 % respondent has said that they are aware on the different community level programme and activities that helps to mitigate the risk of disaster.*

While interacting with government staffs of municipality and ward office, the programme for reducing risk of disaster are minimal and should extend the multiple programme along with purchasing of Fire Engines and capable team in municipal level.

Similarly, the role of community people is undertaken as the secondary in compare with government and other development organizations for the mitigation of the loss induced by the Fire Outbreak in this municipality. The strategies which are found in the study are given below:

The constitution of Nepal (2015) has provision equals role and responsibilities of three-tier of government in the subject of disaster management. Based on the provision of the Constitution, the Disaster Risk Reduction and Management Act (2017) has been formulated and implementing right now. The study also finds that constitution provisioned Local Disaster Risk Reduction Committee (LDRMC) is not formed yet in Fungling municipality which may facilitates the community level awareness programme about disaster. So, the effective implementation of act and policies may help to reduce the loss and impact of disaster in Fungling municipality.

Three tiers of government should be focused to make planned city of Fungling which may help to reduce the risk of unsettled settlements. The effective implementation of Urban Settlement related policies should be applied in the context of Fungling municipality. As the governing bodies of local level, the municipal role has the crucial to facilitates the disaster related programme and policies in community level.

Improvement of Fire engines, dedicated team for the rescue and operation, capacity enhancement of district and local bodies, provision of essential technology for tracking disaster related incidents are the other programme and activities should be implemented by the government.

Community level awareness programme, radio programme, early-warning mechanism and curricula development in school level education on disaster may help to mitigate the risk and loss induced by disaster in general and Fire Outbreak in specific in Fungling municipality.

Relief distribution should be monitor by government office or it should be made one door policy for effective and efficient distribution.

4.5 Effectiveness of LDRMC in the mitigation of Fire Disaster

Community people themselves are the first rescue team of any type of disaster or crisis. The government led-rescue team, security forces and other takes time for the quick response of disaster. The Act and Policies of Disaster Risk Reduction and Management of Nepal provisions

that the local level disaster risk reduction and management committee should be formed on community level. The government has the responsibility to capacitate the community level committee on disaster. In the context of Fungling municipality, the community level disaster risk management committee has not formed yet. The plan of local level disaster to mitigate the risk of disaster is also missing, the study finds. One of the respondents of household visit mentioned:

> *Local level disaster risk management plan and committee is not formed yet. The initiation to formulate community level disaster risk management plan and committee by the municipality should be taken but, this action is not happened till the date. The identification of disaster prone areas and risk reduction plan and capacity enhancement activities ultimately helps to mitigate the risk of disaster. If committee is existing, it will works effectively to minimize the risk factors of Fire incidence in Fungling municipality. The primary data disclose that around 90 % people are agreed on the effectiveness of LDRMC if it existed.*

The study also finds that the specific plan of disaster risk reduction and management in local level helps to design community level programme and activities based on their need and requirements. The community-led programme is easy to implement and effective to accomplish the goal of it.

4.6 Awareness Campaign on Disaster

Community awareness has the important role to raise the knowledge on disaster in community. This activity is taken as the method under the section of crisis prevention which is the one of the major component of disaster cycle management. To raise or extend the knowledge of community people on disaster prone activities would be the one of the major long-term strategic activities for the mitigation of Fire disaster in specific and other disaster in general. One of the respondents reported as below:

> *Due to lack of prevention skills of Fire disaster such as safe usage of Fire, avoid negligence on fire, access of fire to mature family member, safe and quality materials for house wiring, proper knowledge of firewood, safe management of firewood in dry season, Fire Outbreak in Fungling municipality is happened repeatedly. Around 70 % out of 30 respondent reported that negligence by the community people is the one of the*

> *major cause of Fire Outbreak in Fungling Municipality and similar per cent has mentioned that "no community level awareness programme' is conducted repeatedly in community. No proper use of Disaster Risk Reduction and Management Act (2017) and Policies (2019) respectively.*

One of the respondents of KII from municipal level also realized that there is least community awareness programme on disaster led by municipality in community level. The study also finds that the municipality have been broadcasting a radio PSA in the dry season of the year through two FM radios such as Radio Taplejung (94.0 MHz) and Radio Tamor (102 MHz). The radio PSA (Public Service Announcement) helped (20 % respondent 'Yes') to understand about disaster in rural and city areas of Taplejung but it is not sufficient for the mitigation of risk of disaster. The mock test of disaster, especially a Fire Outbreak is required in Fungling Municipality.

4.7 Vulnerable People Focused Humanitarian Supports

The CHS sets out Nine Commitments that organizations can – and should – make to people affected by crises or situations of vulnerability to deliver quality, effective and accountable support and assistance. As a core standard, the CHS describes the essential elements of principled, accountable and high-quality support and assistance. Together, the Nine Commitments provide a coherent and integrated accountability framework to help organizations assess and measure and continuously improve their performance and accountability towards the people and communities they support (CHS, 2022).

In the fire incidence of Fungling Municipality (2021), humanitarian supports to the affected people were provided by the District Administration Office through one-door policy. Different stakeholders were participated to support the fire affected people under the direct guidance of DAO, but vulnerability of affected people were not categorized. Blanket approach in response phase of Fire disaster was applied, and it ultimately did not cover to all the vulnerable people such as elderly, child, person with disabilities and single women.

One of the respondents in KII said:

> *As per the guideline of Disaster Risk Reduction and Management Policy, the DAO provided the humanitarian supports in the incidence of Fire Outbreak (2021) through*

> *one-door policies. The community people blamed to the representative of DAO to behave affected people based on their linkage to support providers. The government cannot provide all the required humanitarian supports only, so the community-led participations is required for the support. It means that believe of community people in Government is lacked.*

So that the guidelines on humanitarian supports developed by CHS Network should be applied that helps to secure quality, effective and accountable support and assistance to crisis or disaster affected people.

Based on the above theoretical analysis of Disaster Cycle Management, the study finds that Fungling Municipality has been lunching awareness programme of Fire disaster in community level through radio PSA, speech competition in schools, awareness classes in schools, street drama etc. should be more prioritize in the approach of all community more extensively. It also finds in KII analysis, the humanitarian supports in the phase of response are not well managed by the Nepal Government after Fire Outbreak in Fungling Bazar, However, security forces (NA, NP, APF) and community people together involved in search and rescue operation during response phase. There is no any specific fire brigade unit in the Fungling municipality till the date, even they have only one fire engine vehicles without the driver and is operated with the help of driver from APF unit. After questioned about the fire brigade unit in Municipality to the Mayor, he stated that it is on the plan of municipality to establish separate fire brigade unit in future. The study also finds that Nepal Government provided least supports to the fire affected people and support mechanism was not fair and independent. During the post disaster phase, relief distribution from different agencies is not manage properly. One of the respondents revealed that many individuals come with their relief and directly handed over to the victim as they believed that going through the government channel is time consuming and chances of misuse from the employees, some victims used to benefit more than they lost, he further added. Fungling Municipality do not plan specific programme to mitigate the risk of disaster and do not entry in the phase of development, prevention, mitigation and preparedness before early disaster. Thus, Fungling Municipality should coordinate with provincial and federal authorities in formulating policy act and regulations in order to identify the vulnerability in the community and to develop resilience society to cope with such fire disaster.

CHAPTER V

SUMMARY AND CONCLUSION

The overall goal of this study is a microscopic study of Fungling municipality through the lens of disaster in general and to diagnosis the condition of Fire Disaster in specific. This study follows accepted research guidance strictly. The research is purely academic and there is no sponsorship for the research purpose. Acknowledgement and intellectual property rights are reserved as per the law of the research during the entire process. This study promised to protect the confidentiality of the individuals and organizations respectively. And, the researcher mostly used the narrative analysis, discourse analysis, thematic analysis and interpretative phenomenological analysis (IPA) for qualitative analysis of the discussion and conversion.

5.1 Summary

Fungling municipality of Taplejung district is recurrently facing a serious problems of Fire disaster for two-decade long time ago. Fire Outbreak is the major disaster in Fungling bazar which engulfed livestock, huge ratio of property, human loss, collapsed the human settlement and wildlife animals.

Fire Outbreak is the leading hazards followed by Earthquake, Landslides, Lightening or thunderbolt respectively. Negligence by the community people on Fire is the major root cause of Fire Outbreak in Fungling municipality. The study finds that proper knowledge and management skills of Fire is lacking in the community due to proper awareness programme led by federal, provincial and local government.

Lack of Urban Settlement is the second leading factors for the case of Fire Outbreak in Fungling municipality. Due to lack of proper policies and programme, the settlement in the city areas is unplanned and housing are constructed vehemently. The governing bodies of Urabn development has no proper working on it. So, due to interlinked wood house can cause the easy and fast outburst of fire immediately.

The study finds that the Local Disaster Risk Management Plan (LDRMP) and Local Disaster Risk Management Committee (LDRMC) are not formulated yet. These bodies should be made which is provisioned by the Disaster Risk Reduction and Management Act, 2017. So, lack of community involvement in disaster management network, the incident of Fire Outbreak and other disaster is happening recurrently.

Community Awareness Programme on Disaster is lacking right now in Fungling municipality. So, local government in coordination with federal and provincial government, should develop a community awareness programme and activities in community. The demo of disaster scenario should be visualized in community level. The curriculum development on disaster should initiated immediately for the knowledge of community peoples and school children.

To minimize the losses from lightening or thunderbolt, technical supports on electric wiring, knowledge sharing of lightening to community people should be provided by the local governments. To make feasible and accessible to rescue and recovery of disaster, relief fund in local level should be established by the Government of Nepal and operates it by the strong policies and supervised by provincial and federal government.

5.2 Conclusion

A disaster is a serious problem occurring over a short or long period of time that causes widespread human, material, economic or environmental loss which exceeds the ability of the affected community or society to cope using its own resources. Disasters are routinely divided into either "natural disasters" caused by natural hazards or "human-instigated disasters" caused from anthropogenic hazards.

Carter, (2008) defines that Disaster Risk Management includes sum total of all activities, programmes and measures which can be taken up before, during and after a disaster with the purpose to avoid a disaster, reduce its impact or recover from its losses. He focuses on the major three key stages of disaster such as firstly, Before Disaster (Pre-disaster), Secondly, During Disaster (Disaster occurrence) and lastly, After Disaster (Post-disaster). In the study, the researcher applied all the disaster cycle management in the study of case of Fungling Municipality.

In the phase of Pre-Disaster, the state or government such as federal and local government promulgated the central and provincial level policies and programme. The implementation of the policies and programme in community level is lacked. No proper mechanism to implement disaster related activities in community or municipal level is formed yet. So, the budget amount (around 26 lakhs) of FY 2079/80 is not sufficient to implement activities which may help to mitigate the risk of disaster in the phase of pre-disaster. The study finds that 70 % respondent answered that awareness campaign in community level is not conducted by the governments or others CSOs, and public groups. It directly linked with the negligence of the people for the repeated case of fire. Disaster related theories need to do more activities before disaster to prevent disaster may help to mitigate the risk of disaster.

In the phase of During Disaster, the study finds that the government had provided few humanitarian supports as the emergency response to the fire affected people of Fungling municipality. The supports is not sufficient to all affected people of the municipality. To some extent, the government and other organizations had initiated to supports affected people.

In the phase of Post-Disaster or after disaster, the study states that the government (Federal and Local) did not initiated recovery and rehabilitation programme in Fire affected areas of Fungling municipality. The reconstruction of damaged house due to fire was not facilitate by the government. The cash supports and facilities for the purchasing of construction materials was not provided in time and sufficient. And other activities such as community awareness programme, strictly implementation of building code of conducts, capacity enhancement of local government staff, formation of community based disaster response team and its capacity enhancement, preventive methods of fire etc. are not properly followed after the Fire Outbreak of Fungling municipality in last year.

Similarly, Barton (1969) natural disaster is a consequence when a natural hazard (e.g., volcanic eruption or earthquake) affects humans and/or the built environment. Human vulnerability, caused by the lack of appropriate emergency management, leads to financial, environmental, or human impact." He highlights that due to lack of proper management plan, effective policies and its implementation it directly increases the human vulnerability. In the context of Fungling municipality, the study also finds that no proper management plan of disaster is made for the mitigation of risk of disaster. Repeated incidents of Fire Outbreak in municipality, it makes the status of people more vulnerable. Community level working groups for the disaster has the

vital role for the mitigation of the risk but in the case of Fungling municipality has not formed yet.

To summarize the study, the federal and local government has to strictly follow the provisions directed the Disaster Risk Reduction and Management Act 2017 and Policy 2019 in municipal level. The lacking of programme and activities of Disaster risk reduction is one of the major issues of recurring disaster in Fungling municipality. The details assessment of the disaster in Fungling municipality is required for the design of programme and activities in community level.

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APPENDICES

INTERVIEW QUESTIONS

Questionnaire

For the thesis paper of

Fire Disaster in Nepal: A Case Study of Fungling Municipality,Taplejung

Form Serial No: ……

Date: ……. (DD/MM/YYYY)

Basic Information:

Name of Respondent:

Ms./Mr……

(Optional)

Age: …….Yrs.

Sex:

☐Male

☐Female

☐Other

Ethnicity:

☐Dalit

☐Janajati

☐Brahmin-Chhetri

☐Other

Education:

☐Non-literate

☐Literate

☐Basic (1-8)

☐Secondary (9 -+12)

☐Diploma/Master/

Occupation: ……

General Question:

1. In your knowledge, what is Disaster? (Natural and Man-made)

   ……
   ……
   ……
   ……
   ……

2. What are major key Disasters are happening repeatedly in your residential area or village/city?

   ……
   ……
   ……
   ……
   ……

3. In average, how many people lost their life in a year from multiple disaster? Or how many property are damaged?

   ……
   ……
   ……
   ……
   ……

4. In the context of Nepal, Earthquake, Fire, Landslide, Flood, Thunderbolt/Lightening and animal accident are major natural disaster that are happening repeatedly. In your views, which disaster was happened in the past in your village?

   ……
   ……
   ……
   ……
   ……

5. From multiple article, news, human casualties and property loss, Fire disaster is taken as the most-happening disaster in Fungling Municipality. Could you share a historical timeline of it in Fungling Municipality, especially of Fire Disaster?

   ……
   ……
   ……
   ……
   ……

6. In your view, what are the major causes of Fire disaster?

   ……
   ……
   ……
   ……
   ……

7. What would be the role of community people, family member, government official and other stakeholders to mitigate the risk of Fire disaster

✓ Role of Community People

   ……
   ……
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✓ Role of Family Member

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- ✓ Role of Government Official

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- ✓ Role of Radio, TVs and Community based digital medias

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- ✓ Role of Other (If any)

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Question related with Disaster, Mitigation Strategies and Management Response

8. Do you know, is there any policies or local level disaster risk management committee is made in your community related with Disaster?

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9. If yes, is it working or been effective to reduce the risk of Disaster, especially a Fire disaster in your community?

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10. In your experience, how did you mitigate a risk of Disaster, especially in your community? *(Tries to find out the coping strategies of local people)*

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11. If Disaster is happened, how Local/Provincial/Federal Government respond quickly with humanitarian supports?

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Questions related with legal perspectives like Acts, Policies, Framework and Government Stakeholders

12. Do you know the any policies of Local Disaster Risk Management Committee? Discuss.

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13. The policies and framework which are made related with Disaster is working or not?

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14. Is local government or district level disaster authorities or civil society organization (CSOs) organize an awareness campaign in your community?

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Cross-cutting Questions:

15. In committee re/formation of Local Disaster Risk Management Committee, ratio/ per cent of male and female member are included proportionately?

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16. In committee re/formation of Local Disaster Risk Management Committee, ethnicity of community people is consider or not?

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17. In humanitarian supports after disaster, specific supports based on the nature affected people is provided by government or humanitarian agencies or not? *(For example, within same affected people, female, pregnant woman, elderly, disable people, child are more vulnerable than young man. So, humanitarian support ethics allows that most vulnerable people should be prioritized first.)*

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And, do you want to add more things/information?

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Thank you very much.

Questions for Focused Group Discussion (FGDs)

For the thesis paper of

The Study of Fire Disaster in Fungling Municipality of Taplejung

Form Serial No: ……

Date: ……. (DD/MM/YYYY)

Meeting Participants:

S. No	Name	Address	Organization	Signature

Subjective Questions: *(If answer sheet is less, we can use copy additionally)*

1. What are the major hazards and disasters in the area?

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2. How many times Fire Outbreak is happening in a year? Or could you tell me a historical timeline of Fire Outbreak in Fungling Municipality?

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3. How do you think the major causes of Fire Outbreak in Funling Municipality and other area of Taplejung district?

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4. What are the disaster risk mitigation and preparedness activities carried out by the Fungling Municipality?

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5. To mitigate the risk of Disaster including Fire Outbreak, is there policies or framework or work plan is made? If yes, is it work effectively or not?

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6. What are your suggestions/recommendations to local government, development agencies and community people for mitigating the risk of Fire Outbreak especially and disaster in general?

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Thank you very much for your active participation.