

COMMUNITY'S ROLE IN EARTHQUAKE DISASTER RESILIENCE: THE CASE
OF KHOKANA VILLAGE IN KATHMANDU VALLEY

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DECLARATION

I hereby declare that this dissertation has not been submitted for candidature for any other degree.

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LETTER OF RECOMMENDATION

This dissertation entitled "COMMUNITY'S ROLE IN EARTHQUAKE DISASTER RESILIENCE: THE CASE OF KHOKANA VILLAGE IN KATHMANDU VALLEY" has been completed by Sunita Pandey under my supervision and guidance. This is an original research work and I recommend this for final approval and acceptance by dissertation committee.

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LETTER OF APPROVAL

This dissertation entitled "COMMUNITY'S ROLE IN EARTHQUAKE DISASTER RESILIENCE: THE CASE OF KHOKANA VILLAGE IN KATHMANDU VALLEY" submitted by Sunita Pandey has been evaluated and accepted by the following evaluation committee as a requirement for the partial fulfillment of the requirements of Master's Degree of Arts in Sociology.

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ABBREVIATIONS

DRM	- Disaster Risk Management
DRR	- Disaster Risk Reduction
DRRM	- Disaster Risk Reduction and Management
FGD	- Focus Group Discussion
GLOFs	- Glacial Lake Out Burst
GoN	- Government of Nepal
IFRC Societies	- International Federation of Red Cross and Red Cross Societies
ISDR	- International Strategy for Disaster Reduction
KII	- Key Information Interview
MoHA	- Ministry of Home Affairs
NDRRMA	- National Disaster Risk Reduction and Management Authority
NGOs	- Non-Governmental Organizations
NPC	- National Planning Commission
NRA	- National Reconstruction Authority
NUDs	- National Urban Development Strategy
PDMC	- Provincial Disaster Management Council
PDNA	- post disaster needs assessment
PDRF	- Post Disaster Recovery Framework
SDGs	- Sustainable Development Goals
SSI	- Semi Structured Interview
UNDP	- United Nations Development Program

UNESCO
Organization

- United Nations Educational, Scientific and Cultural

UNISDER

- United Nations International Strategy for Disaster Reduction

CHAPTER – I

INTRODUCTION

1.1 Background

'Disaster' has become one of the greatest challenges to the life and livelihood of people providing various bottlenecks to sustainable development of countries and societies as it has been impacting the increasing number of human settlements across the world.

Researchers and practitioners have been putting their efforts towards innovative policies and practices to avoid and reduce disaster impacts.

Human being has defined disaster according to their convenience therefore, there is no single universal definition of disaster. Disaster events generally triggered by multiple natural hazards, such as - earthquake, droughts, floods, storms, landslide and so on.

Diverse geo-climatic conditions, fragile geology, haphazard settlements, deforestation, environmental degradation and increasing population, as well as ruthless exploitation of natural resources can cause economic loss, injuries, death of lives, destroy infrastructure, cause irreversible environmental damages and disrupt the entire social system for short, medium or longer term (UNISDR, 2002). If there is no serious injuries or death and no other serious losses caused by the event, such events cannot be considered as disaster (Carr,1932, cited in Freudi, 2007).

Natural hazard events on their own do not cause any disaster. But the level of exposure, vulnerability and preparedness of population or communities determine the extent of loss to that particular community or household in the context of any specific disaster events.

High level of exposure to vulnerability and less preparedness exacerbates community's capacity to respond to and recover from disasters (ISDR,2008 and UNISDR, 2002).

Though the natural disaster come with no prior information and is beyond the human control; efforts can still be made to reduce and minimize consequences of disaster. In this context, informed orientation or direction for relevant human efforts are necessary to better understand the 'disaster'.

The 'Disaster' has been defined by many different individuals and organizations as an attempt to clarify its concept. Definition of 'disaster' provided by International Federal of Red Cross and Red Cross Societies (IFRC) is used in this study. According to IFRC:

“Natural disaster is a sudden, calamitous event that seriously disrupts the functioning of a community or society and causes human, material, and economic or environmental losses that exceed the community's or society's ability to cope using its own resources. Though often caused by nature, disasters often have human origin.”

This definition clearly shows that the normal pattern of life, livelihoods or ecosystem during disaster situation gets disrupted and requires 'additional emergency' interventions to save lives and the environment.

Nepal has diverse geo-spatial landscape and is very vulnerable to frequent disaster events. Nepal is one of the top-twenty disaster prone countries in the world, having 4th, 11th, and 30th rank in climate change, earthquake and flood vulnerabilities respectively (MoHA & DPNepal, 2015). According to the Ministry of Home Affairs (2017), more than 80 percent of the total population of Nepal is susceptible to natural hazards like landslides, floods, fire, thunderstorm, Glacial Lake Outburst Floods (GLOFs) and earthquake (MoHA, 2017). Studies depict that from 1971 to 2013 around 23,391 disaster events were reported, where around 31,908 people lost their life and 58,210 were injured (Nepal, Khanal, & Pangali Sharma, 2018) (MoHA and DPNepal, 2013 cited in (Dhakal, 2015).

The capital city of Nepal, The Kathmandu, is exposed to high risk among 21 megacities around the globe. A 7.6 devastating earthquake struck Nepal on 25th April 2015 (*11.56 am local time*) and killed 8,891 people. In addition, 22,303 people injured seriously and more than 600 thousand households were fully damaged leaving around 300 thousand damaged partially. As a result, millions of people become homeless. Out of the then 75 districts, 14 districts – namely, *Kathmandu, Bhaktapur, Lalitpur, Gorkha, Dhading, Dolkha Makawanpur Rasuwa, Ramechhap, Okhaldhunga, Sinduli, Sindhupalchowk, Nuwakot, Kavrepalanchowk* - were severely affected by the earthquake, (MoHA & DPNepal, 2015). The quake affected already disadvantaged population of the rural

areas very much leaving thousands of poor people without access to basic services and facilities.

According to UNISDR, between 2005-2015 over 700 thousand people lost their lives, over 1.4 million injured and approximately 23 million become homeless globally, as a result of disasters. It is well known that developing countries like Nepal face increased disaster risks from a full range of known and previously unknown hazards as it has not yet developed its resilient capacities. Disasters are placing adverse effects on populations, built structures, the livelihood and environments due to its haphazard settlement, fragile geospatial setup and weak economy. Frequent disaster events like recurrent flood in Tarai region and susceptibility of earthquake in central Hilly areas has provided greatest challenge to the sustainable development goals. Furthermore, the effects of climate change and extremes climatic events have further aggravated the disaster vulnerability in Nepal.

In this context of severe risk for natural disasters in Nepal, it has become very important to understand communities' role in earthquake disaster resilience. It is important also because, community is the one that feels the very first shock or impact of any disaster event that occurs in its vicinity and the one that reacts to the event accordingly.

1.2 Statement of the problem

In Nepalese context, many studies conducted in disaster related issues, but still studies on community and its role in post disaster earthquake resilience has remained either very limited or non-existent. In addition, Nepal is located in a high-risk prone area in terms of disaster and has been encountering the mega earthquakes periodically. Therefore, this study intends to fulfill the gap in the literature related to '*Communities' role in earthquake disaster resilience*' with reference to the Earthquake of April and May 2015.

Community's role in the disaster resilience has been widely recognized as a crucial element in disaster recovery and resilience (Ostadtaghizadeh, Ardalán, Paton, Jabbari, & Khankeh, 2015), as it is the first and autonomous social unit to experience (Patterson, Weil, & Patel, 2010) and to react to the disaster event based on its local knowledge.

Meanwhile, inadequate efforts have been put towards identifying what supports or undermines community's role in the post-disaster recovery and resilience in affected areas. In this study, I examine how social system and networks activated after the 2015 earthquake in the Khokana Village [Kathmandu Valley] of Lalitpur district, which was the one among the highly affected indigenous and historic community within the Kathmandu Valley by earthquake.

The importance of local knowledge, resources, and cooperative strategies are considered to be crucial elements in determining the survival and recovery of earthquake affected communities, which also constitutes their resilience. In addition to this, disaster preparedness and perception towards disaster play important role in integrating the strengths and capabilities of the community into disaster resilience process (Manyena, 2009). But its not known that how these processes are being integrated in the local context of Nepal. The knowledge and understanding with regards to these systems and process seems very important for strengthening disaster resilience of any community in particular and for any disaster-prone country like Nepal, in general.

The role of the government in responding to the earthquake in the initial phase has been very timely but in these six-years, the affected communities have not completely concluded recovery and reconstruction process. This reality requires a more nuanced examination of the community's role in the context of disaster resilience in Nepal. Furthermore, it has surfaced the need for the entire academia to pause and re-examine the 'capacity of the community to deal with a disaster' specially – the capacity to prepare for, act during and recover after a disaster.

The voluminous literature noted that, community involved in the process bringing its members into each aspect of disaster management have shown good examples for community disaster resilience. Having said that, not every community is equal and not all community members' role is beneficial in disaster resilience. The strength and weakness of community must be taken into account. On the positive side, well-functioning community organization have the trust of their member and possess the moral authority to urge cooperative behavior and team work that government lacks (Ostadtaghizadeh, Ardalan, Paton, Jabbari, & Khankeh, 2015) (Patterson, Weil, & Patel, 2010).

This study tries to answer the systematically formulated research questions presented below:

- a) How a community successfully recovered/not recovered from the negative effect of 2015 earthquake in Khokana Village?
This question not only seeks to identify the roles of the community people played which contributed or not contributed significantly to recover from disaster but also explores their involvement in the entire disaster management process at the community level.
- b) How the people in Khokana perceived 2015 Earthquake?
This question largely focuses to assess the awareness and perception about the earthquake they encountered in 2015.
- c) Why are community's roles important/not important in earthquake disaster resilience?
This question leads to the exploration of the importance and effectiveness of the community peoples' role towards building resiliency.

1.3 Objectives

The general context, research problem and the research questions has clerly indicated to the overarching objective "to understand role of community in earthquake disaster resilience in Khokana village in Kathmandu Valley'. To fulfill the objective of this study a number of specific objectives are formulated below.

Specific objectives of this study are:

-) to study the roles of community people to recover from earthquake disaster.
-) to explore the perception of community people related to disaster recovery.
-) to contribute to the existing knowledgabase related to the 'community's role in earthquake disaster resilience in Khokana.

Objectives above have provided the framework for the study, which also facilitated further for designing the study tools and methodology.

CHAPTER – II

REVIEW OF THE LITERATURE

The literature review chapter has been sub-divided in to five sections. First section discusses on the theories and concepts about disaster to provide theoretical and conceptual underpinning. The second section draws on the aspects of resilience in sociological domain. Third section reviews key literature on 'disaster resilience', while the fourth section provides a brief account of role of community in disaster resilience. And finally the fifth or the last section presents framework for analysis that makes the basis of my study/thesis.

2.1 Theories and Concepts of Disaster

Various scholars have defined the term 'Disaster' according to the context that they witnessed and studied, (Carr, 1932) disaster is defined by human beings and not by nature. He noted that 'not' every windstorm, earth-tremor or rush of water is a 'catastrophe'. If there are no serious injuries of deaths and other serious losses, he argued that there is no disaster (Carr, 1932:211). Similarly, Michael Kemp (2003,151-2) argues, catastrophe such as earthquake and volcanic eruptions were interpreted as signs of divine anger against human sins.

Historically, ideas about disaster have gone through three important phases. Traditionally, catastrophes were attributed to the supernatural. They were characterized as 'Acts of God' with the implication that nothing could be done about their occurrence (Quarantelli, 2001,3). The rise of enlightenment secularism led to an important shift in the way society conceptualized disasters. The development of science as the new source of knowledge altered people's perception of disasters. They were increasingly seen as Acts of Nature writes Quarantelli. however, in more recent times, the view that disasters are caused by Acts of the Nature has been gradually displaced by the idea that they resulted from the Acts of Men and Women (Quarantelli 2001,4). In the aftermath of a disaster today the finger of blame invariably points towards another human being.

Government official, big-business or careless operatives are held responsible for most disasters.

Perry (2007) attempted to classify definitions of disaster based on their focus: first, classical definitions which he said “*event centered*” and take event as catalyst of disaster. This group of definitions are similar to Fritz’s definition since 1960s. These definitions are influenced by the World War II; which badly affected European and Japanese cities, and the disaster research by National Opinion Research Center of Chicago University with inductive approaches employing 'social psychology and symbolic interactions' of George Herbert Mead. One of the recreated definitions of this group is formulated by Barry Turner as:

“collapse of social structural arguments that were previously culturally accepted as adequate”.

Second category of definition by Perry, is hazard centered, which perceives ‘hazard’ as ‘source of disaster’. It is influenced by geography and physical science.

Based on these definitions, disaster can be seen as intersection of hazard and social systems, which focused on hazard cycles and agents rather than on events, which makes disaster as epiphenomena. Hazard perspectives also have attention on 'vulnerability' and 'resilience' to examine as source and prevention of disaster.

Finally, social phenomena centered definitions focuses on social phenomena as defining features of disasters rather than physical agent. In this sense disaster is a vague term that has defied simple interpretation. Social scientist refers to actual or possible disasters in terms of physical impacts of or problems caused by unplanned and socially disruptive events (Firtiz,1961, Barton,1970. Dynes,1970). There are four core elements defining the disaster such as, Events, Impacts, Social Units and Responses. The *events* – social, natural or technological - that has time and space and cause certain *impact* – damage and loss – incurred by *social units* and *responses* that are related to these impacts.

Quarantelli (2001,4) describes in his paper, in the aftermath of a disaster today, the finger of blame invariably points forwards another human being. He gives the example of the

great 2004 tsunami and claims that it was not 'natural' but caused by human act. When general typology of disaster is categorized as natural and manmade, current social science emphasized all disasters are social rather than purely natural. Most social scientists refers to actual or possible disasters hazards in terms of physical impacts of or problems caused by unplanned and socially disruptive events (Firtz,1961; Barton,1970; Dynes,1970). Firtz (1961) defines the term disaster as 'there is mutual relationship between disaster and social structure thus, disasters are events in which societies or their larger subunits incur physical damage and losses'. Both the causes and effects of these events are related to the social structure and their sub-units.

Stallings (1998) discusses on consensus and conflict, two lines of the social science theories of disaster and emergencies. He defines the consensus theories of disaster has nexus with structural functional theory of sociology. Durkhiminian idea the "mechanical solidarity". On this theoretical line disasters were understood as 'act of nature' on which disaster was taken as independent variable.

Traditionally, disaster in Nepal is considered as the act of Devil or God. Many people still use the term 'daibiya prakop' in Nepali which literally means disaster by deities or devils. However, disaster as consequences of 'act of human being' is being widely accepted concept in Nepal. Perry argues that social science today tends to balance conflict and consensus theories. From the Stalling's review we can understand that conflict theories of disaster have revised the consensus theories 'act of nature' concept. Disaster is not only crisis of society, but also an opportunity to rebuild better society. Among the three types of definitions by Perry, today disaster is widely accepted as social phenomena which is also supported by other hazard or event-based definition as well.

2.2 Concept of Resilience

The 'Resilience' is a contested term, which is continuously evolving in meaning as it has its roots in multiple disciplines. There are discussions on whether the concept is a process leading to a desired outcome(s) or a desired outcome(s) in itself (Manyena, 2009). In general term, it is about the ability of a system to over perceived or prospective stress and shocks. In other words, resilience refers to the ability of an individual or community to

return back to the pre-disaster state following the hazard event and to improve her/his condition towards a sense of being an empowered human being and/or community. Manyena (2009:24) argues that disaster resilience must be understood as the ability to “bounce forward” rather than “bouncing back” following a disaster. While “bounce back” implies the capacity to return to a pre-disaster state, “bounce forward” relates to a community or an individual’s ability to continue within the context of changed realities resulted from the disaster situation (Manyena, 2009:24).

The connections between disaster recovery and the resilience of affected communities have become common features since the global DRR framework i.e. Hyogo Framework for Action (HFA) 2005 -2015, which focused on the capacity of disaster-affected communities to recover with little or no external assistance following a disaster (Manyena, 2009). It has been noted that DRR is most effective at community level where specific local needs can be met (Cordaid, 2009).

There are varied contexts in which resilience is being used, including in the earthquake, by scholars, donors and practitioners increasingly researching the subject (Bahadur et. al., 2010). Brown (2011) indicates that there are many contradictions, confusions and mixed interpretations of resilience. According to Rose (2009,1) resilience is “either poorly defined or defined broadly as to be meaningless”.

Researchers have compared the definitions to further clarify the term resilience (Julich et al, 2012; Bahadur et al,2010) and to provide structure to the numerous definitions of resilience. As a result, there is a trend using different definition in different setting (Bene et al, 2012; Levive et al, 2012; Aven, 2011; Brand and Jax, 2007; Cumming et al,2005) that has created further confusions on considering one universally agreed definition.

The concept of resilience by Holling (1973) describing this concept as "a measure of the persistence of systems and their ability to absorb change and disturbance and still maintain the same relationship between populations or state variables (Akash & Emrich, 2020). In addition to that, resilience researchers link the term resilience with physical, ecological and social domains to include the human dimension in the environment. Therefore, from the literature surveys, it can be easily traced that there is a general

consensus among many different disciplines ranging from ecology to psychology, - resilience is the "ability to prepare and plan for, absorb, recover from or more successfully adapt to actual or potential adverse events" (Akash & Emrich, 2020).

Walker and Westley (2011) note that resilience is the capacity to survive, adapt and recover from a natural disaster. Some scholars understand and utilize the concept of resilience in a more effective manner (Julich et al, 2012; Carpenter et al, 2009; Cumming et al,2005) and give some clarity to the discussion on resilience by focusing on the content of where resilience will occur and in what context. Such studies are helping to understand the local context of a disaster situation to through the robust theoretical lens.

Dodman et al (2013, 28) propose that the aim of building resilience is to “anticipate risk” and “develop strategies” that can cope with disruptive events. Wilson argues (2012c,12), “resilience can neither be made, nor it does emerge out of a vacuum, but it is transferred through complex process of policy, their implementation and other exchanges between individuals, communities and wider society’’. So, the term ‘Resilience’ can be understood as “system’s capacities to respond’ the disaster situation. It is intrinsically dynamic “everything changes, nothing remain still” TURNER et al. (2003,8075).

GLAVOVIC et al. (2003,291) have defined resilience as the “capacity to absorb, ability to deal with surprises or cope with disturbances.” Similarly, scholars PELLING (2003,48) discuss, Resilience is a product of the degree of planned preparation undertaken in the light of a potential hazard, and of spontaneous adjustment made in response to felt hazard, including relief and rescue’’. Likewise, BHOLE et al. (2009) address his view, resilience means coping with future crises by learning through undergoing shocks and distress, about which actions are more or less appropriate in the content of uncertainties. Finally, the most commonly accepted definition of resilience in the disaster risk reduction field is from the United Nations International Strategy for Disaster Reduction (UNISDR 2009):

“the ability of a system, community or society exposed to hazards to resist, absorb, accommodate to and recover from the effects of a hazard in a timely and

efficient manner, including through the preservation and restoration of its essential basic structure and functions”

UNISDR provides a clarification:

“the resilience of a community in respect to potential hazard events is determined by the degree to which the community has the necessary resources and is capable of organizing itself both prior to and during times of need.”

The notion of social resilience has become increasingly prominent in the last decade within several academic disciplines and research fields. Social resilience concerns social entities be they individual, organizations or communities and their abilities or capacities to tolerate, absorb, cope with and adjust to environmental and social threats of various kinds.

ORBIST et al.(2010a289) pointed out, empirical studies on social resilience is very necessary. According to him what is resilience, what is the threat or risk we examine. He emphasizes that social as well as ecological events and dynamics can be considered as threats, and that social units are usually exposed to multiple stressors. In his writing on social resilience he addressed a whole range of threats. These threats are usually emerged from social units, which can be broadly grouped in to three categories as below:

The first – puts natural hazards and disasters, such as Droughts, Floods, Volcano eruptions, Tsunami and Fires at the center while the second category of threats address more long-term stress associated with natural resource management, resource scarcity and environmental variability, such as Forest conversion, declining water quality, water scarcity and climate variability and climate change. The third one, focus on the various kinds of social changes and development issues and examines policy and institutional frameworks related to migration, regional economic transformation, tourism, infrastructural development, urban socio-spatial transformation, economic crisis and health risk. Furthermore, there is debate over how to define social resilience.

ORBIST et al. (2010) suggested that three different types of capacities are necessary for understanding the notion of social resilience in its full meaning. He discusses three

capacities they are as follows: *Coping capacities* – refer to “reactive” and “absorptive” (ORBIST, 2010a, 289) measures of how people cope with and overcome immediate threats. In other words, it is a restoration of the present level of well-being after critical event in a short term.

Adaptive capacities – are “proactive” (ORBIST 2010Aa,289) or “preventive” measures that people employ to learn from past experiences, anticipate future risks and adjust their livelihoods to future challenges in their everyday lives. They also note some differences between coping and adaptation – adaptation is grounded in the temporal scope of the activities involving strategic agency and long-term planning, while coping addresses practical agency and short term rationale.

Transformative capacities, indicate to people’s ability to access assets, to create mutual assistance in the wider socio-political arena, to participate in decision-making processes, and to craft institutions that improve their individual welfare and foster societal robustness toward future crises (LORENZ, 2010). He argued transformation involves radical shift in which the objective is not to secure, but to enhance peoples’ well-being in the face of present and future risks. For them transformative capacity is ability to craft sets of institutions that foster individual welfare and sustainable social robustness towards future crises.

Overall, from this review we can conclude that resilience is a social system that has ability to respond and recover from disaster. *Resilience* is a valuable concept, it has a key conceptual underpinning, such as sustainability, vulnerability, power adaptive capacity and agency in relation to disasters. Furthermore, three major findings can be summarized from this review of literature: first, it has provided the way how resilience can be properly defined, how it can be measured and analyzed. Second, three fundamental capacities of social resilience can be used as a means to cope with social vulnerability so as to adjust present and future livelihood strategies. And the third, how social and ecological events considered as threats usually impact social units.

2.3. The concept of Disaster resilience

The concept of resilience as stated above is multifaceted, which was originated from physics and popularized in the ecological studies, and later applied to social sciences to

denote the adaptive capacities of individuals, communities and larger societies (Norris et al. 2007). In Hyogo Framework for Action resilience is defined as "the ability of individuals, communities and states and their institutions to absorb and recover from shocks, while positively adapting and transforming their structures and means for living in the face of long-term changes and uncertainty".

As part of the broader concept of resilience there exists a concept of disaster resilience. The Hyogo Framework for Action defines disaster resilience as the degree to which individuals as well as public and private sector are capable of learning from past disasters and reduce the risks to future risks at all levels (UNISDR 2005). The ways in which communities, governments and civil society can be encouraged to create a supporting environment for building disaster resilience are varied, but include such actions as local capacity building and ensuring the participation of everyone, especially vulnerable and marginalized groups (Turnbull et al. 2013). The three major global processes that are trying to stabilize the concept of resilience are Hyogo Framework for Action, post-2015 goals focusing on sustainable development and the new international climate change agreement. Due to its different nature resilience needs different funding compared to traditional humanitarian assistance, and it requires changes in policies and structures. In a best possible case resilience can act as a bridge between humanitarian and development aid (GHA 2014).

2.3.1. Community Disaster Resilience

In this thesis, I will focus on community resilience as it applies to disasters. According to Norris et al. (2007), a community is a group of people with unity within the geographic boundaries that are made up of natural, social, economic and built environments that interact to each other in various ways (Norris et al. 2007). This very description of a community is applied in this study.

In order to build resilience in communities against the disaster event, the local people should be engaged in risk reduction, be flexible towards unexpected situations, create participatory organizations, strengthen decision-making skills and confirm the functionality of information sharing and ensure more equal division of resources. The resilience should be seen as a process instead of an outcome. The level of resilience can

be measured in the way and pace in which the community returns to the situation before the disaster. Nevertheless resilience does not mean that the community would not suffer from any stress, but instead a resilient community returns to functioning faster and the stress is only a passing phenomenon (Norris et al. 2007).

The term 'resilience' started to be used in relation to disaster from 1980s, but the universal definition of resilience has not been agreed upon till now. There are various definitions forwarded to define and better understand the Community resilience. According to Adgar (2000), the ability of communities to withstand external shocks to their social infrastructure is called community resilience, while Paton (2001) opines that "*the capability to bounce back and to use physical and economic resources effectively to aid recovery following exposure to hazards*" is community resilience. Similarly, Bruneau (2003) argues that 'the ability of social unit to mitigate hazards, contain the effects of disasters when they occur, and carry out recovery activities in ways that minimize social disruption and mitigate the effects of future earthquakes' can be considered as a community resilience. Longstaff et al (2005) further defined community resilience in a simpler way "*Community resilience is the ability of a community to absorb a disturbance while retaining its essential functions*". Finally, Collins, Carlson & Petit (2011) have defined community resilience as "*the ability of a community to absorb, respond/adapt to, and recover from a disturbance while retaining its essential functions*" (Community and regional Resilience Institute, 2013; Norris et al., 2008; cited in (Brown, 2016).

The above presented definitions of community resilience used terms like capacity or ability of a system, while defining the concept. This means that there is certain agreement among many researchers that disaster resilience is the capacity or ability of a system, community, society or people to resist, mitigate, respond and recover from the effect of an event.

2.4 The role of Community in Disaster response

Community has local knowledge and plays vital role in the continuum of disaster preparedness, response and recovery (Patterson, Weil, & Patel, 2010). Two actions are central to community disaster that are – first to take action before the extreme event that triggers the disaster in order to reduce the consequences of the event on the community

and the second, to help the community recover from the disaster. Hansoon and Linnel, defined the term 'community' as 'the group of people' living in a particular place or area, or being socially connected through a common ethnicity, religion, interest and language.

Community organizations and community-based networks - such as, volunteer and non-governmental organizations play important role for both disaster preparedness and recovery. They have been much more flexible and adaptive in the work of resilience (Patterson, Weil, & Patel, 2010). Community network is also very important for emergency disaster resilience as it provides various assistance and services within the community. They involve local individual, families, business, interest group and other stakeholders in decision making process, that becomes very helpful in disaster resilience.

According to Tocquevillie community-based organizations and networks can take immediate action to address issues and do not wait for higher authority to solve problems for them, but rather, join together in addressing themselves. He says "*individuals have limited capacity to act effectively or make decisions for themselves quickly as a result they are strongly subject to administrative decisions that authorities impose on them*".

Model of risk perception, recovery and disaster preparedness is developed to highlight the role of community and the effect of a community perception of risk and decision making in a natural disaster.

- i) models of risk perception and vulnerability
- ii) model of evacuation and action
- iii) model of disaster recovery

Overall, community response to disaster by itself is the basic and the most important component in damage reduction. A capable community means having enough strength to start emergency activities and make the emergency period as short as possible. In addition to that, organized reaction to any disaster event from community, access to and availability of resources to support community people, sustainable and well-developed infrastructure, existing individual knowledge and awareness related to disaster all interact to build the capacity of the community or a household to individually or collectively prepare, prevent, respond to and recover from shocks and stress. Given the advancement

in the physical infrastructure development which is to fulfil the developmental needs of the community, disaster events are increasing.

2.5 The 2015 Earthquake in Nepal

The earthquake of 7.6 magnitude struck the country. Subsequent aftershocks, including one of magnitude 7.3 near the Chinese border on 12 May, resulted in additional losses of life and property. The earthquakes shook almost the whole country, and the destruction was extensive, lasting and widespread, in terms of human casualties, social suffering as well as environmental, infrastructural and heritage related damages. The earthquake triggered avalanches in the Mount Everest region and in the Langtang Valley. Villages were flattened and people were made homeless within less than a minute. Considering the severe level of humanitarian crises, Government of Nepal declared 14 out of 31 badly affected districts as “crisis-hit.”

Human Casualties. Of these killer hazards, earthquake stands out from the rest in all respects – death, disappearance and injuries, a fact reiterated by the 2015 Earthquake. Of the total 9,708 disaster-related human deaths during those two years the 2015 earthquake alone claimed the lives of 8,970 persons (92.5 percent). Landslide, lightning, fire and flood claimed the second highest number of lives (in a range between 276 and 101 each) during 2015 and 2016.

Socio-Economic Losses. When one looks at the economic and financial losses as a result of disasters, earthquake clearly leads this list too. This includes houses damaged, economic loss and number of families affected (Table 2.2). All disasters recorded in MoHA database reveal that a total of one million, eighty-five thousand, seven hundred and ninety-seven houses were damaged during the review period, of which 98.7 percent of the houses damaged was due to the earthquake. This is followed by a host of other disasters attributable to fire and landslide (0.3 percent each) and to flood, heavy rainfall and windstorm (0.2 percent each) (Table 2.2).

Of the total economic loss that occurred during the review period, worth more than seven hundred nine billion rupees, about 99.5 percent was due to earthquake alone. Another category of disaster that caused economic loss was fire. But its effect was far less (0.3 percent) when compared to the effect of the earthquake.

Unfortunately, the data related to the loss of old heritage sites in the country is very blurred. Even in the case of 2015 earthquake, the impact to the old temples, monasteries and other historical infrastructures particularly in the rural areas of the country are almost unavailable. Due to the lack of proper and regular maintenance of such historical infrastructures in many urban and rural areas, such heritage sites have been either damaged or have ultimately collapsed.

Several communities have been displaced due to regular exposure to disasters. Such displaced people have either shifted to other parts of the same districts or to the flat plain of the Tarai in southern Nepal. Due to displacement to new locations many community groups have lost their traditional institutions and also the indigenous knowledge and practices, the monetary value of which is hard to ascertain.

As a result of the earthquake, 8,970 people died and more than twenty three thousand people were injured (MoHA 2016). The PDNA showed that at least 498,852 private houses and 2,656 government buildings were destroyed. Another 256,697 private houses and 3,622 government buildings were partially damaged. In addition, 19,000 classrooms were destroyed and 11,000 damaged (NPC 2015b).

The earthquake affected manufacturing, production and trade in agriculture as well as tourism and other areas of the service sector. On the whole, it weakened the national economy with wider ramifications. It posed a challenge to Nepal's aspiration of upgrading herself to a developing country category by 2022, and to its national commitment of poverty reduction (NPC 2016).

According to initial estimates NRs. US\$ 6,695 million would be required to reconstruct damaged properties and infrastructure and to support recovery in affected sectors of the economy (NPC 2015c, Table 3). A revised estimate drawn as part of developing the Post Disaster Recovery Framework, however, identified US\$ 8,377 million needed for reconstruction (NRA 2016, Table 4).

8979 people lost their life and more than 22, 300 people were injured due to the earthquake. At least 498,852 private houses and 2,656 government buildings had been destroyed. Similarly, 256,697 private houses and 3,622 Government buildings were

partially damaged. Besides this, more than 19,000 class rooms were damaged completely and more than 11, 000 classrooms were partially damaged (MoHA, 2018).

CHAPTER III

METHODOLOGY

3.1 Rationale of the selection of study area

Lalitpur District in the Bagmati Province of Nepal is one of the hard-hit districts by the 2015 earthquake. I selected Community in Khokana of Lalitpur Metropolitan City, Lalitpur purposefully to conduct this study. The purpose of the study was to study the role of community in the disaster resilience.

I was motivated to study 'community's role in earthquake disaster' because I got an opportunity to conduct some research work in Panchkhal Municipality of Kavre to study implications of land tenure in earthquake recovery for 3 months as research officer with a national level think-tank 'Consortium for Land Research and Policy Dialogue (COLARP)' Lalitpur. It was the first time I worked with community people as a researcher and had chance to observe community dynamics closely. As a student of sociology, I wanted to know more about the community's role in relation to earthquake disaster. Latter I selected this area of study for my Master's thesis.

I was quite clear about the study subject but not sure about the study site. Initially I identified 3 sites, namely Khokana in Lalitapur, Sankhu in Kathmandu, Pachkhal in Kavrepalanchok, to conduct this research based on the prepared set of criteria. All three sites were equally important for the study purpose, meanwhile it was not possible for me to conduct study in all three sites given the time and financial resource limitations. As the Khokana is easy to access, has historical importance and witnessed severe damages related to physical infrastructure, cultural heritages, life and livelihoods of local people, I finally chose to Khokana as my research study site.

3.2 Research Design

3.2.1 Qualitative Approach

This research follows the qualitative research design to address the central goal of the present research to explore knowledge on the topic under consideration from the perspective of the people studied; and to know how people define their role in the context of earthquake disaster resilience. Research design can be defined as 'a plan and procedure

for research that covers broader set of assumptions and detailed methods of data collection and analysis and reporting in research' (Creswell, 2009).

The 'Case study' as its inquiry process in doing this research allows me to obtain in depth information about what, how and why my research participants would react, behave, think, and create meaning as they would do. In addition to that this research design facilitates me to understand how they understand and interpret their situation. Meanwhile, using case studies for research purpose to address the problem described and meet the set objectives remain one of the most challenging of all social science endeavors (Yin, 2003).

3.2.2 The case study as a research process

The case study is common way to do qualitative research. It is defined as "an empirical inquiry that investigates a contemporary phenomenon (the 'case') in depth and within its real-world context" (Yin, 2003) (p. 16). This strategy of inquiry requires researcher to explore program, event and one or more individual (Creswell, 2009). The case study strategy in this research is used mainly to deal with the "how" and "why" questions related to 'Community's Role in Earthquake Resilience' focusing on a contemporary phenomenon within the real-life situation (Yin, 2003) of Khokana village and to explore the meaning by interpreting the world views, values, experiences, opinions and behaviors of the research participants.

Since the case study allows investigator to retain the holistic and meaningful characteristics of real-life events (Yin, 2003), it is employed as an effort to contribute to the existing knowledge related to 'community's role in disaster resilience' with a special focus on post-disaster situation of the community in Khokana village in Kathmandu valley of Nepal. It is an empirical inquiry towards investigating a contemporary situation of the earthquake affected families in a post-earthquake context, while using descriptive data and showing explanatory functions that may serve as the basis for significant explanations and generalizations of the research finding.

3.2.3 Suitability of qualitative research design and case study approach

Systematically formulated research questions and objectives of this study demand the application of the qualitative research design. Within this research plan the case study

approach is used to acquire in depth understanding about the research topic. The case study in this research has relied on many of the same techniques as that of other research strategies under qualitative approach. It adds to the source of evidence – direct observation of the events being studied and interviews of the persons involved in the events.

Qualitative design allowed to employ participatory social research approaches to generate data, where the researcher spent significant time in the village and in the people's home to understand the core of the problems. The daily life of the villagers was closely observed to see how people were maintaining their daily affairs after the earthquake.

Main sources of data include individual behaviors, attitudes and perceptions of the people interviewed. Design of this study, procedures of data collection, analysis, and reporting steps follow characteristics of the qualitative research design and also align to the case study strategy.

Objectives of the study require analysis of individual behavior, attitudes and perceptions related to disaster, and their own role in disaster response. In this Case study approach, I have used Key informant interview, semi-structured interview, and focus group discussion, as well as field observation as a technique for data collection.

3.3 Nature and Source of Data

3.3.1 Nature of Data

This study has objectives that call for case study research strategy in data collection, analysis, and interpretation. As per the requirement of objective and the overall research design, I collected both qualitative and quantitative data. Quantitative data is just to validate or support the qualitative information.

3.3.2 Source for Primary Data

Study population and the research site are the main source of the primary data, in general and particularly the source of primary data included the individual behavior, attitudes and perceptions towards the earthquake disaster and community's role in responding to the disaster in my research from where I obtain first hand fresh data.

3.3.3 Source of Secondary data:

Previously published documents, research reports, and journal articles and various web-documents relevant to my research objectives constitute major sources of secondary data for this research study.

3.4 Data collection tools

A guideline or checklist to facilitate the conversation with the research participants was prepared. The checklist mainly included open-ended questions related to the earthquake damages, community peoples' role in earthquake response and recovery and existing social system. In this Case Study research, multiple tools, techniques and instruments for data collection are used, which are presented as below:

3.4.1 Focus Group Discussion (FGDs)

Focus Group Discussions (FGDs) as a tool played an important role in collecting data in my study. FGDs are frequently used as qualitative approach to gain an understanding of social issues. FGDs were used to quickly and conveniently collect data from many people through discussions and interactive processes. This method of interview in this study is used to gather a lot of information from a large number of people in a short period (Berg & Lune 2012).” Nyumba & et.al, 2018 & Anderson (1990) defined focus group as a “group of individuals with certain characteristics who focus discussion on a given topic.” There is no universal agreement on the size of the FGD, meanwhile, many authors (Anderson, 1990; Denscombe, 2007; Morgan, 1997; Patton, 2002; Ritchie & Lewis, 2003; Stewart & Shamdasani, 1990) suggested to ensure to include from six (6) to twelve (12) participants in a FGD. FGDs provide a conducive context for the homogeneous group to reflect on the question asked by interviewer” and opportunity to “explore attitudes and perceptions, feelings and ideas on of the participants on the topic under consideration (Dilshad & Latif, 2013). It became very useful to complete the challenging task of this research in the limited time. In the process of this type of interviews it is interesting to see different respondents coming to the same conclusion or alter the conclusions about the same topic under discussion.

All three (3) FGDs in Khokana Village allowed to deep-dive into exploring the role of the Community in earthquake disaster resilience, their experiences, attitudes, perceptions and feelings as well as ideas about the study topic. FGDs were conducted in different places and ensured the variety of participants in each of the FGDs. FGDs also provide

opportunities to the participants to raise questions, contemplate on them and clarify themselves about the issue under discussion with diverse insights enriching the information base.

First FGD was conducted among the women of the earthquake affected community, mainly to see the roles – both they are given and they played during and after the disaster - of women, their attitudes and perceptions towards disaster resilience. Total number of participants of that FGD was nine (9); all of them were female members from Newar indigenous group. The second FGD included eight (8) male members of the community. The third FGD was designed to have a mixed representation of women, men and other stakeholders working on disaster related issues. There were ten (10) participants. During these FGDs, the researcher collected information on coping strategies, resource sharing, and household decision making as well.

3.4.2 Key Informant Interviews (KIIs)

The FGD does have limitations that it does not offer the same depth of information as in long semi structured interview. To compensate the gap of the FGD, face to face interviews were also carried with the key informants, which allowed discussing the issues in depth and also triangulating the data collected from focus group interview.

KIIs become important tool during my research regarding data collection. Total Four (4) KIIs were conducted during the study. There are few individuals in any community or society who know the detailed understanding of forms, meanings and functions of that particular society and its social practice. Key informants with their personal skills, or position within a society, can provide more information and a deeper insight into what is going on around them (Marshall, 1996). KIIs as its nature is an important source of evidence for the study and insightful for data collection. A semi structured questions was used for collecting data to provide opportunity for the participants to express their perception on the study topic by answering “why” and “how” questions in their own words (Mack, Woodson, MacQueen, Guest, & Namey, 2005). It provides more flexibility to explore on the emerging issues and adapt according to the change.

Key informants for this study included a School teacher, a Local Leader, the representative of NRA, and a Ward Chairperson. KII with School teacher provided

information regarding trends of disaster events, community's response to such events, education and employment opportunities available in the study area, While, the KII with Local Political Leader provided me some important insights on locally established institutions, their operational status, state of community's preparedness in Khokana Village and on socio-economic along with development dimension of the community. Similarly, KII with a representative from NRA benefitted me by providing information on the key policies and progress on their implementation at national level which further made easy to see the local level policy initiatives. Finally, the Secretary of Ward No. 21 provided macro picture of the ward and the metropolitan city, which later configured during the interviews with other respondents at micro level. The checklist for KIIs is presented in the Annex.

3.6.3 Semi Structured Interviews (SSIs)

SSI were conducted to grasp the behavior, attitude, perception, and knowledge of general community members towards earthquake. Total of 12 households were identified in consultation with elderly people and social workers in the community and were interviewed. This technique allowed the researcher to ensure the participation of both economically sound and weak representatives, to see if they have different notion of the issue under consideration. The interview schedule is presented in the Annex.

3.6.4 Non-Participatory Observation

In this non-participant observation, the researcher recorded/noted what she saw, heard, and faced during field visit that helped researcher to understand grass-root reality of the situation and the problem under investigation in the study site. It became an effective tool to cross check people's responses to the query. For example, people were found falsifying some information about services and facilities, especially, with regards to the reconstruction provided by the government and other aid agencies. They seemed to exaggerating the shortage of each with the hope that this researcher may play some role to provide the things they lack in their community/households.

3.4.4 Secondary sources

Secondary sources are other important tools of data collection. Secondary sources include district profile, articles, and reports regarding 2015 earthquake in Nepal and community's role in disaster response, recovery and reconstruction.

Data collection process mainly focused on qualitative data. For secondary data, the researcher visited various websites of organizations like NRA/UNDP/DFID and various libraries, offices and organizations and analyzed previously published documents and articles.

3.5 Data Analysis and Interpretation

The process of data analysis is committed to deriving sense from raw data that is collected during the research study (Creswell, 2009). The data generated from both primary and secondary sources processed and analyzed. Following Creswell, (2009) and Johnson & Onwuegbuzie, (2004), the researcher organized data and read through entire data to check whether there were any obvious mistake and corrected immediately after data collection. Then reduced data through coding and analyzed manually. During the analysis various themes were generated. Data generated from various sources was interpreted detailly to derive the meaning from the data. Interpretation was done integrating information from multiple themes.

3.6 Reliability and Validity

The researcher is highly concerned to maintain higher reliability and validity of this research. To ensure reliability and validity of the data collected during the study, the researcher followed various steps systematically. The research invested a considerable amount of time to pay attention to the details while doing proper editing of the report, and proper coding of the data. The researcher make sure that adequate information is acquired with accurate interview and while maintaining the non-participant observation field notes. Triangulation of various data sources (observation, FGDs, KIIs, and secondary sources) is carefully made in order to derive the findings and conclusion.

3.7 Ethical Consideration

During the research, researcher was aware of researcher's ethics. Researcher respected respondents' choice and freedom of taking and not taking part in the study process. Researcher described her purpose of the study clearly to the research respondents before taking interviews and obtained their consent to proceed the interview and record their response. Researcher maintained participants anonymity while writing this report.

3.8 Limitations of the Study

There are various limitations to this study, which range from theoretical limitation to limitations of the results. One of the major limitations of the study was scarce source of data. Because, individual behavior, attitude and perception towards the disaster and the role of community in responding the disaster varies for different individual, household, and community within and across various households, geographical and socioeconomic settings, and it was not possible to cover whole population within the framework of this research study, therefore, findings attained from this study may not be applicable to entire Nepal. Similarly, time, purpose, resource, and expertise become other constraints to the study.

This study did not follow particular theoretical framework, so it fails to contemplate on strength and weakness of particular theory and cannot claim underlying theoretical effect in the research site. Similarly, this study has some methodological limitations. It followed Case Study method of research strategy so it has not been able to produce any theory.

CHAPTER IV

ANALYSIS OF THE LEGAL FRAMEWORK RELATED TO DISASTER RESILIENCE IN NEPAL

Nepal has remained one of the most disaster-prone countries in the world, given its diverse geo-physical landscape and climatic conditions. Despite of having less developed technological, economic and social security system, Nepal has made a significant progress in formulating the legal and legislative frameworks in the last ten years. In this chapter, the effort is made to review the laws and policies to see their robustness for disaster risk reduction and management from the lens of disaster resilience. In doing so, both national and international legal and policy tools adopted by the government of Nepal in the recent years are presented as follow:

4.1 Constitutional Provisions

Nepal had a paradigm-shift in its political, governance and legal system as it adopted the New Constitution on 20 September 2015, which provides overarching legal frameworks for all state actions and affairs. The Constitution established a federal system of governance allocating the state power and governance responsibilities to the three levels of government – federal, provincial and local. Local governments have considerable authority and responsibilities, and are now the nearest state authority to deal with the citizens' basic issues including disaster risk management.

The Constitution requires state to make advance '*warning, preparedness, rescue, relief and rehabilitation in order to mitigate risk from natural disaster*' with a collective effort of all three levels of the governments provided a solid base for institutionalizing the disaster risk management at national and sub-national levels (MoHA, 2019). Following the Constitutional spirit, the 'disaster management' has been made prime responsibility of local levels towards responding disaster (Nepal Law Commission, 2017).

The Part – 4 Article 51: Policies for protection, promotion and use of natural resources, directs the state for the policy to make advance warning, preparedness, rescue, relief and rehabilitation to mitigate natural disaster induced risks [Sub Art. g.9]. The natural and non-natural disaster preparedness, rescue, relief and rehabilitation activities are presented in the concurrent powers of Federal and Provincial governments [Schedule 7], meanwhile the disaster management is also present in under the Local government's responsibility

and also as a common responsibility of all three levels governments [schedule 8 & 9] (GoN, 2015).

4.2 Major Acts that deal with the Disaster Risk Management

4.2.1 Local Government Operation Act, 2017

Local Government Operation Act, 2017 is one of the major instruments to facilitate the implementation of state authority at local level in line with the Constitutional provisions. Roles and responsibilities of local governments specific to disaster risk management have been described in the following areas under part – 3, Clause 11 (T) (Nepal Law Commission, 2017): (i) formulation, implementation, monitoring, and regulation of local policy frameworks and guidelines related to local level disaster management and risk reduction activities; (ii) Local level disaster preparedness and response plan, early warning system, search and rescue activities, coordination for relief materials; (iii) river embankment, landslide control and river management; (iv) mapping of disaster risk prone areas, identification and relocation of settlements; (v) coordination and cooperation with federal, and provincial governments, local communities organizations and private sector for disaster management; (vi) resource mobilization for disaster management; (vii) local level rehabilitation and reconstruction after disaster; (xi) data management and research studies related to local level disasters; and (x) local emergency work operation system; (xi) operation of community based disaster management programs.

Above mentioned provisions of the Act clearly show that the local governments should be more responsive and should be able to initiate required actions to address the local needs while dealing with the disaster issue on timely manner. However, local levels on their own, cannot effectively work towards disaster management as the disaster is 'not only the natural phenomena' but 'also largely social' as it builds on the process, adaptation and change (Perry, 2018), and requires a multitude combination of approach, efforts, intervention and investments (Pokharel & Dahal, 2020). The local governments are key actors to build a resilient society while considering their roles and responsibilities related to this issue. To effectively implement the provisions of this Act, local government need to be better equipped with financial and technological capacities.

4.2.2 Disaster Risk Reduction and Management Act, 2017

The Government of Nepal endorsed the Disaster Risk Reduction and Management Act, 2017, on 24 September 2017 by replacing the Natural Calamity Relief Act of 1982. It is a key policy framework, after the Constitution, to provide policy and legal facilitation for disaster related works. It also provides 'effective management and coordination' of activities related to natural and non-natural disaster; to protect life, livelihoods and properties of people, to protect natural and cultural Heritage and physical infrastructure. The Act has provision for “National Disaster Risk Reduction and Management Authority - NDRRMA” as a specialized agency for disaster management and clarified the roles and responsibilities of Federal, Provincial and the Local level (Bhandari, Neupane, Hayes, Regmi, & Marker, 2020).

The DRRM Act has provisions for a formal structures, roles and responsibilities of central, provincial and local governments. At Central level, there is DRRM National Council, Executive Committee and National Disaster Risk Reduction and NDRRMA. To include the need, with the first amendment (2019) to this Act, there is an inclusion of Provincial Disaster Management Council (PDMC) [Chapter 6, Clause 13A). For the effective implement of DRRM Act, the DRRM Regulation, 2017 has further elaborated the functions and mechanisms for DRRM at local level.

This Act recognized disaster as multi-dimensional issue and follows the DRRM cycle – prevention, mitigation, emergency preparedness, response and recovery plan. It has at its core, the objective of 'building resilient society'.

4.2.3 Earthquake Affected Structure Reconstruction Act, 2015

In order to rebuild the devastated infrastructures, the government formulated the Earthquake Affected Structure Reconstruction Act, 2015 mainly to established the National Reconstruction Authority (NRA), an apex body to look after all the reconstruction related issues as provisioned in Clause 4 of the Act lists NRA's responsibilities, duties and rights, which includes, among others, to (a) confirm the damages caused by earthquake; c) Set priority for reconstruction; g) acquire land to implement the plans related to reconstruction, integrated settlements and housings; h) prepare guidelines and set criteria for reconstruction, rehabilitation and relocation issues, etc.

4.3 Major Policies

4.3.1 National Disaster Risk Reduction Policy, 2018

This policy aims to create a more coordinated effort among federal, provincial and local governments while working in disaster risk management context and provides the legal framework to deal with disaster and its management as part of institutionalizing risk reduction initiatives. It aims to increase awareness about disasters, preparedness, financial resources, and skill and coping capacity, which will further strengthen and promote resilience of the community.

‘Building resilient nation’ has been one of the focus of this policy that contributes to the sustainable development of the nation. Government of Nepal has prepared and adopted a national disaster risk reduction strategic action plan for the period of 2018 – 2030 in 2018, which is aligned with the sustainable development goals and Sendai framework of action (Pokharel & Dahal, 2020). These documents offer wide ranges of policy and strategic options to strengthen disaster governance and improve the capacity of state and the society for building resilience.

4.4 Major Regulations

4.4.1 Earthquake Affected Structure Reconstruction Regulation, 2015

Without rebuilding the damaged infrastructure, it is impossible to reduce the risk and to better prepare communities and society for future disaster. After 2015 earthquake, Nepal realized a need for safer integrated settlements to reduce the cost and consolidate the effort.

To materialize the need for rebuilding integrated settlement and housing, as well as for resettlement of the earthquake affected individuals or families, the Government prepared this regulation in 2015. Article 3 of this regulation presents the list of the broader priorities to guide the overall reconstruction process. However, the landless poor earthquake affected families and their needs for secure land tenure are not explicitly included in this document.

This regulation has prioritized following sectors, such as, Emergency services, public agencies and health institutions (a); rural and Urban settlement, infrastructure, integrated settlement, and educational institution (b&c); damaged and risky governmental and

public structure; structures listed on World heritage or of other archeological importance; and other structures that NRA finds necessary to work on (d, e& f) (NRA, 2017). As such, it is evident that NRA is more focused on the big projects but not so much in rehabilitating the poor and the vulnerable groups and communities.

4.5 Major Procedures and Guidelines

4.5.1 Acquisition of Land for Earthquake Affected Structure Reconstruction, Procedure, 2016

The main objective of this policy tool was to acquire safer land from any location as per the requirement (Article 3) for rebuilding settlements and developing integrated settlement or earthquake affected families. It also states that for such work the government will provide compensation [12(1); 16 & 20] determined by the prescribed committee [8 (2)]. Such land will be registered under the ownership of the government (Article 6). This policy initiative shows the proactiveness of the government towards recovery, rehabilitation and reconstruction process that further contributes to the resilient capacities of the earthquake affected families (NRA, 2017). However, affected communities faced a number of difficulties and they are still waiting the government's facilitation even after the 5 years of the earthquake.

4.5.2 Earthquake Affected Private Houses Reconstruction Grant Distribution, Procedure (first amendment), 2017

The purpose of this working procedure is to ensure the grant reaches to the beneficiaries for reconstruction and retrofitting purpose.

Beneficiaries are defined as owners of the houses damaged by the earthquake and its subsequent aftershocks and have no other livable house. Those eligible to be listed in the beneficiary list need to be approved by the Executive committee [Article 3 (1)]. Such beneficiary must have a copy of citizenship card, copy of land ownership certificate, *Sarjmin Muchulka* and the slip provided during the data collection by NRA. While rebuilding the affected houses, beneficiaries should follow current Housing Code [Article 4 (3)] and follow the earthquake resistant technology [4 (5)] to support the national goal of making the 'resilient nation'.

Article 5 of the procedure talks about the Grant agreement and financial management. House owner whose house requires rebuilding will enter into a grant agreement and receive Rs.50 thousand, Rs.150 thousand and Rs.100 thousand as the first, second and third instalment, while for house repair or retrofitting the house owner will receive Rs.50 thousand each for the first and the last instalment [article 5 (1c)]. This type of financial support in time of difficulty has supported a lot to the affected families. Further, the provision for some convenient loan for affected families, by allowing them to use the reconstructing house as a collateral in the bank [Article 5 (1f)] also added to the confidence of the affected families.

4.5.3 Vulnerable Settlement Relocation and Rehabilitation Procedure, 2017

This policy tool was formulated to reduce the further damages and loss and to speed-up the settlement relocation, and rehabilitation of the earthquake victims residing in the geographically vulnerable areas. The Article 4 (1), has a provision for community to decide, where a committee of 10 families among the beneficiaries can choosing a safer place for which government provides reconstruction grant to develop integrated settlement (NRA, 2017). This procedure has other provisions for developing necessary infrastructure and livelihood opportunities in such newly developed integrated settlement to enhance the disaster resilience among the community people.

4.6 Major Strategies and Frameworks

4.6.1 National Disaster Risk Reduction and Management Strategic Plan of Action (2018-2030)

National Disaster Risk Reduction and Management Strategic Plan of Action (2018-2030) endorsed by the National Disaster Risk Reduction and Management Council does not only explain the planning framework covering all stages of disaster risk reduction and management in the country but works as a guiding documents for related government agencies, development partners, NGOs and private sector working in areas of infrastructure and construction that lead towards achieving both the Sustainable Development Goals (SDGs) and a disaster resilient Nepal (Bhandari, Neupane, Hayes, Regmi, & Marker, 2020; Pokharel & Dahal, 2020) (MoHA, 2018).

The primary objective of this strategic action plan is to provide overall guidance to mainstream disaster risk reduction and management into national development process

with special focus on long-term risk reduction and response strategies. In addition to that, the long-term vision of the strategic action plan is to *'build a safer, adaptive and resilient nation from disaster risk for sustainable development'* (MoHA, 2018). While the goal is *'to prevent new and reduce existing natural and non-natural disaster risks and losses'*¹. To fulfil this goal, it requires the Identification of various strategic activities and formulation and implementation of the periodic and annual plan that *prevent disaster risk, increase preparedness for response, rehabilitation and reconstruction and strengthen resilience* (MoHA, 2018).

The Strategic Action Plan has adopted some of the SDG indicators related to disaster risk reduction into development process. Based on the Sendai Framework for Disaster Risk Reduction, this action plan has incorporated 4 priority areas and 18 priority actions proposed for 2018 to 2020 as short-term, 2018 to 2025 as medium-term, 2018 to 2030 as long-term and continuous for those which are implemented regularly (MoHA, 2018).

Box 1: Priority Areas included in the DRRM Strategic Action Plan 2018-2030

1. **Priority Area 1:** Understanding disaster risk
2. **Priority Area 2:** Strengthening disaster risk governance at federal, provincial and local level
3. **Priority Area 3:** Promoting comprehensive risk-informed private and public investments in disaster risk reduction for resilience
4. **Priority Area 4:** Enhancing disaster preparedness for effective response and to 'build back better' in recovery, rehabilitation and reconstruction.

Source: DRRM Strategic Action Plan 2018-2030 (MoHA, 2018)

The 15th five-year plan for 2019-2024 has also envisioned making Nepal a 'disaster safe and resilient nation' (National Planning Commission [NPC], 2019), for which number of policy interventions and strategies are identified. However, the provisions are yet to function fully and the results are not yet realized.

¹ Losses related to life, livelihood, property, health, means of production, physical and social infrastructure, as well as cultural and environmental heritage

4.6.2 National Urban Development Strategy (NUDS), 2017

The National Urban Development Strategy (NUDS) 2017 aims to establish benchmarks and standards for urban planning and propose strategic initiatives so as to explore possible investment for urban development in Nepal. Nepal has diverse geo-spatial characteristics but there is no specific strategy to address location specific needs in different geo-spatial locations with various degree of susceptibility to encounter disaster. This evidently indicates to the possibility that majority of the people may suffer in case disaster events occur in the disaster-prone areas.

Currently, more than 40 percent people live in so-called urban areas as previous village development committees transformed into rural-municipalities and municipalities after the state restructuring in 2015. Facilities and services in the urban and semi-urban areas have remained largely unchanged and in some case infrastructure development specially the expansion of the road has increased, without proper planning, as if it is the only indicator of the development.

Management of disaster related database is very poor and system of regular monitoring and evaluation is yet to be established. Achieving SDGs and Graduation Plan of Nepal from the status of a Least Developed Country to that of a Middle-income Country by 2030 heavily rely on increased investment and sustainable infrastructure development along with the enforcement of NUDES envisions affordable, adequate and safe housing by reducing and regulating informal settlements.

4.6.3 Post Disaster Recovery Framework (PDRF), 2016

After The 2015 Earthquake, the government introduced a number of policy and legal reforms to improve the institutional capacity as an effort towards strengthened and inclusive disaster governance in Nepal. The NRA introduced Post Disaster Recovery Framework (PDRF) 2016-2020 with a vision to ‘well-planned, resilient settlements and prosperous society’, has identified five strategic objectives for the reconstruction program safe structures, social cohesion, access to services, livelihood support and capacity building (NRA, 2016).

The Framework is a blueprint for multi-stakeholders working in earthquake disaster recovery, and provides space to them, so as to consolidate their respective efforts for

common goal – earthquake disaster recovery - by aligning their actions with government policy which further facilitates to create the social harmony that is the basis of resilience (NRA, 2016).

Furthermore, the PDRF proposed four activities to strengthen local capacity in recovery: a) establishing resource centers in partnership with non-governmental organizations (NGOs), b) supporting community level and district level project implementation units, c) hiring specialized skills for reconstruction of heritage that require special skills, and d) developing training strategies to supply trained construction workers. In this way, this Framework is not only focused to complete post-earthquake recovery but also to set the solid base for building resiliency by mobilizing broader stakeholders (MoHA, 2018).

4.6.4 National Disaster Response Framework 2013,

The Government of Nepal has amended the National Disaster Response Framework, 2013, to align it with federal governance system and existing laws related to disaster risk reduction and management for mobilization of national level resources. The overarching objective of this Framework is to perform and guide comprehensive disaster response and maintain coordination among all three levels of government for disaster preparedness. It has a clear mandate for facilitating efforts such as search and rescue, preparation for emergency shelters and protect life and property.

In addition to that, the framework also includes clear mechanism for the process of appealing international support for responses as per the governments' requirement.

"As per the framework, the Government of Nepal (Council of Ministers) may approach the UN humanitarian coordinator, national and international governments, Red Cross, regional organizations, donor communities, international professional groups and non-resident Nepalis for humanitarian goods or services if its resources, such as helicopters and technical equipment for rescue and relief operation, including cash, are inadequate for disaster response." (The Himalayan Times, 2019)

Apart from that, it has provision of clusters for sectoral coordination, where Federal government will coordinate with provincial and local governments, agencies concerned, security bodies as well as national and international organizations for search, rescue and relief operation, damage assessment, medical care, treatment of injured, waste management, dead body management, resumption of supply of essential goods, roads, electricity and communication system in the wake of a disaster, and this also has mechanism for collection of disaster information (i.e. related to displaced persons, situation of special care for lactating mothers, pregnant women, senior citizens, children and other vulnerable people), its impact, and mobilization during emergency as well as identifying the priority activities of different timelines after disaster (MoHA, 2013).

This Framework has well incorporated international humanitarian norms and guidelines for disaster response and recovery. This has clearly shown that it is important for developing countries to have a clear and concise framework for emergency response, operational activities and coordination mechanisms which can provide clear first point of reference and guidance at a time of disaster (Bisri & Beniya, 2016).

CHAPTER V

DATA ANALYSIS AND INTERPRETATION

This chapter presents the analysis and interpretation of the data collected from the field.

5.1 Brief Disaster Profile of Khokana

Khokana is a traditional old town in Lalitpur Metropolitan City, Lalitpur district of Bagmati Province, which is ~10 km south of the Capital city Kathmandu. It is a Newari village that has been trying to preserve and promote indigenous traditions, culture and values and is proposed for UNESCO World Heritage Site as 'Khokana: the vernacular village and its mustard-oil seed industrial heritage' in 1996. There are 4927 (2452 Male and 2475 Female) people living in 1056 houses as per the National Population Census of 2011.

According to an interview with key informants and the elderly, it is found that "*Khokana encountered Two big earthquakes in the last 181 years, the 8.1 magnitude of earthquake in 1934, and 7.8 magnitude of earthquake in 2015.*" Recalling the earlier event and comparing that with the recent one, the participants noted that 'the loss the village incurred in 1934 was higher than the loss caused by the later as all of the buildings collapsed by the quake in 1934.'

This village covers the area of 3.169 sq. km, hosting the dominant Newar indigenous community, overwhelmingly belonging to the same caste group. The earthquake heavily damaged the traditional settlement and disrupted its entire socio-economic and cultural well-being. The study reveals that nine (some people said twelve) individuals died and twenty-eight wounded in the 2015 earthquake and almost 80% houses affected - either damaged fully or partially in Khokana Village.

Because of its geo-spatial characteristic, Khokana village is considered to be very vulnerable to earthquake, as it had the dens settlement with no proper settlement planning that added to the relatively increased infrastructural and economic loss. Majority of the inhabitants follow subsistence agricultural activities, specially manufacturing the mustard Oil using indigenous knowledge. As the earthquake badly affected the mustard Oil Mills,

that affected the income of the mill owners and the local producers, specially, small and marginal households that were already affected by the earthquake damage.

Hitman Shrestha (Name changed) owned a Mustard Oil Mill, from which he used to receive income to cover the basic needs of his 9 membered family also managing the cost of the education for his children. There was no another reliable source of income for his family except this Mill. His family has been operating this mill for over 5 decades. In the recent years, his business was growing and obviously generating increased income of which he used to save substantive portion even after managing all the basic needs of his family. He also contributed to the local economy by providing employment to local youths and women in his mill to serve various types of jobs to be done. The mustard mill damaged severely by the earthquake, disrupting the income and livelihood source of Shresth's family and also for the number of workers and technicians employed at his mill. From the observation it was revealed that even after the three years of the earthquake, Shrestha Family did not receive any support form the government or any other development agencies to build back his mill. He was almost sure that he would not receive any support anytime soon but did not give up the hope. Therefore, he has no started to reconstruct the structure on his own.

Infrastructure loss was one of the huge loss that local people incurred. The bitter truth was that, no support was activated to immediately fix or to sustainably rebuild the infrastructure important to local economy.

Earthquake cannot be exactly predicted, to entirely avoid the loss from it. This situation is vert pronounced in the developing world like Nepal. The knowledge or the awareness with regards to the natural disaster among community people plays pivotal role in minimizing the prospective loss. In the case of Khokana, this study found certain level of awareness about the natural disaster but very little knowledge on employing the risk reduction strategies. The study reveals that 'there was no any system operationalized for prior information and preparedness. The community did not incur higher number of

human casualties, just because they were out in the farm at the time when earthquake hit the area.'

5.2 Immediate actions taken by the community

The community is the one that responds to any disaster event immediately, regardless of its reach and effectiveness to respond the impact, which depends on its social, economic and other strength including social network, political power, ownership over land and other properties. In the study site, the researcher found many instances that confirm the community people pro-actively activated their efforts in response to the earthquake. This study, therefore, is an effort to understand community disaster response and recovery capacity to absorb shocks and face severe conditions and progress effectively.

In Khokana, according to one of the interviewees, "*the first action of the individuals or community people was to ensure physically weak group such as pregnant women, elderly and children in their family and in the neighboring family are safe*". To do so, they formed different group to mobilize the youth for search and rescue on their own, rather than to wait for the actions of the local administration, which later proved to be very slow.

One of the interview participants recalls the initial action taken in his community immediately after the earthquake as below:

"It was a traumatic moment. The increased terror was created by the continuous aftershocks of the earthquake. Family members were scattered anywhere, that added the trauma. Everyone around me was confused of what to do and not to do as they were seeing their beloved homes falling down. In many houses, pregnant women, small children and elderly people were stuck. Neighbors and family members knowing that, immediately after the first tremor, began to rescue them. Everybody was in panic and it was difficult to manage the psychological stress amidst the tremor that was claiming personal belongings and lives. The entire day was intense. Towards the evening, most of the family members and neighbors gathered and began to make-sure if anyone among them was missing."

From the focus group discussions, it was also revealed that, almost all of the people of the Khokana village spent the first night outside under the open sky, and case was the same for many others across the earthquake affected districts. Despite the Khokana is only 10 KM away from Kathmandu city, it was not easy to access the village from outside as the roads were blocked in many places due to fallen electricity poles and destroyed buildings which further hampered swift mobilization of government authority for rescue and search operation in Khokana.

The earthquake affected the entire village but the effect of the earthquake was disproportionate to many different people – the poor, small-peasants, landless, rented small-business and people with loose political ties were the one who faced higher level of difficulties even in getting both internal and external supports across the country and the Khokana Village was not an exception. The presence of the state was almost invisible for three years from the day earthquake hit the area. The researcher wanted to know more about why the state mechanism was so slow to respond to respond the recovery, and rehabilitation of the earthquake affected households and tried to approach government authorities at different level, but it was not so easy to find trustworthy information. The authorities seem treating the information related loss and governments inability as secret. According to the Ward Chairperson of Ward No. 21, Khokana of Lalitpur Metropolitan City,

"In the last three years government prepared some policy mechanisms for the disaster management. Local government was new after the new federal structure, there were a lot of policy and process hurdles and unclarities. Local government has many diverse responsibilities, and earthquake related responsibilities were not quite clear. It could not facilitate the swift coordination at local level due to the lack of required human resource. This situation further delayed the local government's effective activeness in this case."

Discussion with him and many other people who were formally and informally interacted during this study revealed that, only having policy in place does not automatically translate into actions that bring changes at the ground. In order to effectively implement

policy provisions, Local governments require significant enhancement on their capacity and support system. It was also revealed that, there were no such activities at community level to prepare them for any unforeseen disaster.

While asked, affected households reported diverse experience of earthquake and approaches they employed to respond to and recover from the impact of the earthquake. Sukumaya (*name changed*), said that *"the top floor of my house was damaged partially, but was not livable as the damage was serious."* However, for the last three years, they had been living under the same house with a fear in mind that it can cause further collapse to the entire house. This researcher was not the only to ask her about the damages of the earthquake her family faced. Many people from outside came and asked for information many times. *"But could not get any concrete support"* she said. *"Neighbors were busy with fixing the damages they incurred and it was not possible to remove the top floor with the labor available in our house. Although we registered our name in the beneficiary list of NRA (National Reconstruction Authority), it took 3 years to get the support from government."* Now, she has installed the tin roof with the grant from government to repair the damage.

No single group or individual can adequately address every aspect of the disaster risk reduction and management. Meanwhile, local people collectively took some basic action on their own to survive – in the initial phase they stationed temporary tents on open fields available at the nearest point possible from their damaged residence, while they have their lifesaving assets stuck inside their houses. As part of the immediate response and recovery, they involved on distributing *daal, chaamal, salt, daalmoth, chauchau, chura, water* and *clothes*, for which some local NGOs and INGOs also played important role for around one or two months.

From the interview with the community people, it is identified that, local people systematically activated their collective actions. They formed a committee called *"Reconstruction and Rehabilitation Committee"* including politicians, social works, and others including women to facilitate the reconstruction process to revive the life, livelihood and cultural heritage damaged by the earthquake in Khokana. That promoted

self-governing recovery efforts such as removing rubble, and cleaning up, dismantling crumbled buildings in the initial phase.

5.3 The Life in the Temporary Shelter

This study found that most of the local villagers follow agriculture as their mainstay. The mustard farming in this villages is well-known and the mustard oil produced in Khokana is famous in Kathmandu valley. Before the earthquake, the settlement in this village was very dense with traditionally built old houses. Majority of such houses were damaged either fully or partially, which were later declared inappropriate for living without retrofitting or/and rebuilding. So, the families, from the tent shifted to the temporary tin hut – the temporary shelter in the out-skirt of the village.

A participant of the mixed FGD conducted with local people, named Chini Kaji (45) had 3 stories house with 9 members living in there before the earthquake destroyed it. He recalls those days in temporary shelter 'as the most difficult days' as all nine members have to adjust in the small congested tin-hut for almost 4 years until he become able to completely reconstruct his house in the later part of the 2019.

He said "My house was damaged badly and it was declared unsafe to continue to live in, however we used this to cook food in the day time almost for a year. Our temporary shelter was little bit far from this house. For quite some time, it was very difficult to remain far from my house in the temporary shelter provided by some INGO for long time. I tried to spend time as less as possible in the shelter. So, I used to come to the old house early in the morning. We used to cook day time meal at our old house and return back late in the evening to the temporary shelter, just to 'laydown' and pass the night. I wished if I could build-back a new house as early as possible but it didn't happen because it was not so easy for me to do so with my financial capacity. It took 3 years for us to receive the first trench of the government grant, which was only for 'maintenance'! And was not enough to build the house as I wanted to. Later I sold a portion from of our agricultural land to manage the money to rebuild the house."

The 2015 earthquake changed life of many people, their psychology and sociology, for which, both positive and negative changes were observed closely in the study area as well. The earthquake disaster surprisingly became a tool to resolve family conflicts over properties. It created a situation in which people have to coordinate and cooperate with each other leaving all the prejudices and egos aside in resolving the life-threatening problem. The researcher found this aspect powerful to make people understand the need for each other and strengthen their collective capacity to absorb shock and withstand the difficult situation.

Bojhu, the 59-year-old women experienced positive changes in her life, as she become able to revitalize her familial ties which were broken before many years because of family dispute over their parental property – the land. After earthquake damaged her house, Bhoju have to set a temporary settlement on her agricultural land which is nearby. Bhoju was not alone who lost the residence to the earthquake. Her husband's elder-brother was one among the most affected households, who also had to set temporary shelter. It was not so easy for him to set temporary shelter for his family because he has his land little bit far from the current settlement. Bhoju told her husband to offer him a land for temporary settlement. It was not only about offering land but also to restore their relationship. The disaster brought them closer. Bhoju's husband proposed his brother to set temporary settlement together on his land. This was a good option for both also from security reason. He agreed and both of the family established their temporary shelter together.

While, the 36 years old Soiniya encountered significant lose as she lost her two houses and household assets. It was a big blow to struggling middle class family to loss two house and household assets. Soiniya Shrestha, with her father in-law, a son and a daughter, had his husband abroad in overseas employment in Dubai for last six years. They have built these houses with all their income and efforts, as if these were the pride projects. Her family incurred huge amount of loan even after selling their parental property, the land. Because of the loan pressure, her husband went to abroad. They were about to complete the loan repayment of the bank and of some relatives, the earthquake took their houses leaving them homeless. It was a big blow to her family. The

government grant to this family is nothing against this big loss. While asked, she said that, the government has no system to calculate the loss and provide standard compensation to the family based on the loss incurred. There are families, who lost the entire property that took their significant period of life to save and protect but the disaster destroyed in a blink of eye.

Most of the community people felt that the vulnerability to earthquake has increased for them as the state has not been able to respond to their needs timely, despite of having rebuilding their houses. One of the Key informants opined that "in the case of Khokana, around 50 percent of the earthquake affected people received the agreed amount for the housing. The government has some policy in place but there is no proper implementation. Local people are experiencing the gradual alienation from their agricultural land as they have to meet the increasing financial needs of the family.

5.4 Preparedness for the next disaster event

This study identified serious gap between policy and practice of the local government with regards to preparing the community people capable enough to respond to the earthquake disaster, however community people by nature have their own process, but not so much advanced, to tackle the disaster impact. The disaster risk management (DRM) capacity of the local government needs to be substantively increased at different level in such a way that contributes to the capacity of the local communities. The community is the one that reacts or responds the disaster immediately, one cannot overlook the roles of the community institutions which also require support to strengthen various institutional mechanisms in the community through regular awareness and training activities. Inclusion of the local people in the decision-making level related to DRM and ensure their participation in DRM activities establishes their ownership over the process and trust over the mechanism, which leads to strong community preparedness that facilitates smooth implementation of both policies and programs.

This study further identified that, the preparedness in the research site for the possible disaster is non-existent or very poor. According to one of the key informants "*local government, in policy, has many diverse mechanisms to deal with the disaster related*

activities, but in practice no one bothers to activate them effectively with clear and operational plan accompanied with adequate human, financial and technical resources. We are struggling to recover fully from the 2015 earthquake even after the three years, but government authorities and also the community people seem to have forgotten the earthquake trauma, as they are adapting the things slowly and gradually. No one seems to bothering in anticipating the future disaster and the prospective loss, as they are busy with resolving their day-to-day problems."

From the policy perspective, the government has paradigmic changes in formulating various policy frameworks and it has signed couple of global frameworks including the 2030 Agenda for Development and Sendai Framework. However, the progress at implementation level is comparatively slow. The reconstruction of the earthquake damages and inclusive rehabilitation process of the disaster affected families is yet to be completed successfully. One of the representatives from the NGO, which was engaged keenly in earthquake disaster recovery and rehabilitation, told that *"the government has contradictory provisions, and many different ministries, and departments have similar responsibilities and lack clarity. One of the great problems observed is that these institutions don't prefer to work as one-team but independently. That has been seriously limiting the overall capacity of the government to completing the rehabilitation related work of 2015 earthquake and embark into the preparation for the future one."*

Institutionalization of the major policy instruments, localization and mainstreaming of their policy provisions is slowly and gradually moving forward following the spirit of the federal governance system from central down to the local levels. According to the representative of NRA *"NRA has prepared several legal frameworks also to address the immediate needs with a great hope to help the real beneficiaries from the government grants and other facilities. However, it sounded a kind of top-down model. As we are now talking about the future preparation, we need to clearly distribute the responsibilities related to DRM at all level making local bodies more responsible powerful. Legal mechanisms such as Land Use Act, 2019 has a substantive policy base for advancing the preparedness level activities and planning, but the act is yet to be translated into the needs of the provincial and local government needs."*

Again, returning to the preparedness, interaction with the people in FGDs and interviews indicated that, to a greater extent, general public, political leadership and entire bureaucracy has forgotten the tragedy. It is a serious concern and a big gap to be addressed as immediately as possible with well thought plan and careful action. This study reveals the harsh reality about the community's participation in the preparation for the future disaster. None of the participants of the FGD know any preparedness related efforts being activated at their ward by government or any other organizations, while local government claimed to have some.

Given this poor scenario of the preparation, the community is highly likely to encounter greater loss in the coming days. To enhance the community's existing capacity of responding to disaster, government requires to implement disaster risk management orientations and plans keenly engaging the community people.

5.5 Perception and participation

Different people perceived 2015 earthquake and its impact differently. Some considered it as the misfortune of the community and other think that the loss could have been minimized if the government could have prepared communities and its own mechanism substantively for the earthquake disaster prior to the event. However, the existence of the certain level of awareness with regards to reducing the prospective loss is observed through the community practice of building the new houses, supporting and taking care of each other.

Participation in the 2015 earthquake disaster recovery, rehabilitation and reconstruction from the community was reported very high during the community interactions. However, the participation was not well informed and systematic as the disaster preparedness in Nepal has remained very poor despite of being one among the disaster-prone countries. Community people took part in the community level actions related to disaster response, recovery and resettlement, meanwhile their voice remained absent or very weak at the policy decision making level.

In an interview, the local social worker said "*I have been actively involving in the earthquake response, recovery and reconstruction process form the day one in this*

community, directly and indirectly. I observed the encouraging participation from the community people at various level from providing basic assistance to their families and neighbors to the representation in the decision making and planning role at ward, municipal, and district level from this community."

While asked about the roles he played for disaster risk reduction and management process in his community Sudeep (27) said *"I joined the group of youths of my village for the immediate mobilization and assisted in evacuating the people stuck inside the houses. From the following day, I contributed in setting up the temporary shelters and tents. In addition to that I coordinated for the government grant in my community by assisting the community and the government authorities in collecting the information of the households and the damage incurred."*

Earthquake of 2015 disrupted not only physical infrastructure but also the cultural and social bonds, as the 80% of the homes of the Khokana village have complete or partial damage. In the words of one of the research participants, *"the darkness prevailed before eyes"* of many who witnessed the moment crumbling their own houses. She further noted on the her feeling in the FGD and added:

"I felt that the ground beneath my feet left the place. It was the immediate feeling. But now the people seem that they have forgotten that as there is no any organization – government or nongovernmental organization working actively to promote disaster risk reduction and management activities. I am not aware of the fact that whether the local level DRM committee is functioning at the ward or municipal level."

From her remark, local government needs to make policy process and its implementation transparent by sharing the important information with the local people. Local governments tend to hide the information and avoid engaging local people capacitating them.

Similarly, another interview participant noted the confusions created one after another making people to follow different process and said *"the series of changes one after*

another in the policies created a lot of confusion and delayed the process to get reconstruction related grant for many people in this community even after three years. As a result, many opted to withdraw from the grant claim process and managed the rebuilding their destroyed settlements by selling their productive assets like the agricultural land." The Officer from the Lalitpur Metropolitan City was asked about this and he had a different opinion that *"To make the reconstruction process easy the central government should prepare guidelines. Policies and guidelines related to reconstruction were amended time and again with an aim to cover as many citizens as possible."*

5.6 Current context of Khokana and Community's role in earthquake disaster resilience

The reconstruction process is gradually being completed. According to the ward data base total of 542 families were listed as beneficiary households however only 509 families signed the contract for reconstruction grant and received the first trench of the grant. 183 families have received the second trench and only 182 have received the third trench of the government grant. This means the reconstruction process is moving very slowly in Khokana, as in many other places. The reason behind this slow-moving reconstruction process is the lengthy grant claim and approval process accompanied with the land ownership related counter claims. This study also found the instances, where real victims of the earthquake were left out of the beneficiary lists and that is taking many round-about as the current policies lack provisions to address this in an easy way. The researcher also had an opportunity to talk with few of such families, who complained that they were not provided right information on time. However, people with political and power nexus, easily received the grant.

'Resilience', as suggested by Johan Twigg (2009), *is putting greater emphasis on what communities can do for themselves and how to strengthen their capacities, to move forward after the disaster event. From the literature review it is evident the 'the goal of community resilience is to foster the capacity of communities to mitigate hazards and recurring risks.'* Further, the resilient community can carry out recovery activities in such a way that minimizes social disruption and mitigates the future effects such events and impacts. An active and meaningful collaboration among central, provincial, and local emergency management agencies of the government as well as the related CSOs and the

local communities plays crucial role in promoting community disaster resilience and reduces the risk and vulnerability to disaster events (Shrestha, 2008). This collaboration creates in building the conducive environment to activate the social networks and state efforts towards raising awareness and mitigation efforts among communities at risk.

From the interview with the Ward Chairperson, the community members and development workers it is confirmed that "the main goals of the disaster management related activities are to improve public safety during emergencies and to build resilience against recurring events." To achieve these goals, a number of works need to be done, which include, preparing the minimum standard guidelines on how to become 'resilient' for a community and effectively implementing; recognizing indigenous practices of the communities and promoting their efforts in adopting resilience guidelines; increasing public awareness and understanding of earthquake disaster, its impact and its management; and contributing in improving disaster management planning for community.

From the study it was also revealed that, to effectively execute above identified activities, the local government and local communities require honesty and commitments to ensure inclusive and active participation of the community people in designing of such initiatives. The awareness about the earthquake disaster resilience among the local level is very low. They have been unable to establish clear links between the policy provisions and community's role for the earthquake resilience.

The social structure of the study area is not so diverse, but the researcher felt a widespread dis-trust among the community people in times other than disasters. Thus, the community is little bit weak in its social asset, that has been playing a catalytic role in loosening the relational bonds and social ties resulting in a surficial support mechanism to the needy people in the community further eroding the community's disaster resilient capacity. Community solidarity can be enhanced through the community support system, which is severely disrupted as the households and the community as a whole lost the livelihood and income sources by the earthquake.

The earthquake has pushed many families in to poverty and destitution as it disrupted the income and livelihood of many people in Khokana. The damaged schools, mustard mills, and private houses are yet to be completely rebuild and thus limiting the overall progress of the area.

CHAPTER VI

SUMMARY AND CONCLUSION

This study on "Community's role in earthquake disaster resilience: The case of Khokana village from Kathmandu Valley" has attempted to explore the role of community in earthquake disaster resilience with a hope that this study may contribute to the existing knowledge related to this subject as Nepal is increasingly being highly susceptible to the various natural disasters including the earthquakes. Meanwhile the study also embodies a set of limitations with regards to the methodology, study area and expertise among others.

The study clearly confirmed that earthquake has provided severe impact on population, built structures, livelihood, and overall local economy of the study area. Majority of the houses were damaged partially or fully in Khokana by the 2015 earthquake providing the heavy toll on the entire population of the village impacting their economic and social system. Moreover, the community's role in all aspect of the disaster risk management found to be very important in strengthening the resilience of the community at large. Community people have shown significant strength and persistence to recover from the damages.

The reconstruction of damaged houses has been slow and very few are completed at the time of this study. The delay in the reconstruction was attributed to the frequent changes in the process, defective identification process for the beneficiaries, and changing deadlines for both registering and confirmation of their identification.

It is found that government has attempted to formulate legal foundation to enhance the disaster governance. But there is a wide gap between policies and actual practice to translate the policy provisions into reality in such a way that the community people can feel a kind of change that makes their living easy.

Despite the community did not receive any prior assistance to advance its resilient strategy, it has well activated it's all possible social ties and networks in responding the immediate emergency needs, and medium recovery needs. It has also clearly indicated to

the need for local governments to include local communities in the disaster related planning and implementation of such plan strategies for the better results.

In this study the greater effort has been placed on analyzing national and international key policy frameworks adopted to respond to the disaster risk reduction and management in general and in particular, to the earthquake disaster resilience in Nepal. This has shed light to the significant gap in the policy provisioned at national level and their implementation at the local level.

The study also identifies the clear research agenda for rigorous academic engagement for future scholars in earthquake disaster specially on the NEPAL's disaster resilience as structural issue. The earthquake has pushed many families in to poverty and destitution as it disrupted the income and livelihood of many people in Khokana. The damaged schools, mustard mills, and private houses are still to be rebuilt, providing limits to the prospectus of the socio-economic development of the area.

Disproportionate distribution of opportunities, wealth, and services is found to be determining the overall resilience capacity and depth and breadth of the impact of the disaster and status of recovery among the disaster affected households. One of the key factors also affecting the resilience capacity of the communities is their prior awareness of the disaster event. This is very weak in the study area where the local government can intervene as part of the preparation for the future disaster. Thus, it can be concluded that, the impact of the disaster is mostly shaped by the socio-economic context of the particular society or the household. This researcher observed many cases, while compared, households with relatively weaker status encountered severe impacts than those of households with sound economic base that strongly correlates with their resilient capacity.

Since the government's earthquake recovery and reconstruction program was facilitated following a top-down model that limited the adequate participation from the community level in the disaster risk recovery, management and reconstruction process with significant roles and responsibility. As a result, this effort of the government remained incomplete or faced significant delays further eroding the resilience capacity of the

community people. It did not notably contribute to their capacity enhancement and livelihood improvement. However, this study confirmed community is the crucial actor in disaster risk reduction and management and it has critical role to play in earthquake disaster resilience. To enhance community's resilience to earthquake resilience, the existing legal frameworks and governance structure also requires improvement and reform.

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ANNEXES

INTERVIEW GUIDE USED IN PERSONAL INTERVIEWS AND FGDS

This interview guide is prepared to conduct the study on '*Community's Role in Earthquake Disaster Resilience: The Case of Khokana Village in Kathmandu Valley*' for the partial fulfilment of the degree of Masters' in Sociology from Central Department of Sociology, Tribhuvan University.

Major Research Questions

- a) How a community successfully recovered/not recovered from the negative effect of 2015 earthquake in Khokana Village?
This question not only seeks to identify the roles of the community people played which contributed or not contributed significantly to recover from disaster but also explores their involvement in the entire disaster management process at the community level.
- b) How the people in Khokana perceived 2015 Earthquake?
This question largely focuses to assess the awareness and perception about the earthquake they encountered in 2015.
- c) Why are community's roles important/not important in earthquake disaster resilience?
This question leads to the exploration of the importance and effectiveness of the community peoples' role towards building resiliency.

Objectives of the Study

The overarching objective is "to understand role of community in earthquake disaster resilience in Khokana village in Kathmandu Valley'.

Specific objectives of this study are:

-) to study the roles of community people to recover from earthquake disaster.
-) to explore the perception of community people related to disaster recovery.
-) to contribute to the existing knowledgebase related to the 'community's role in earthquake disaster resilience in Khokana.

Vulnerability and Risk

- a) Explore the root causes of peoples' vulnerability (social, cultural, political and/or economical?) within Khokana.
- b) Identify the community member's knowledge of natural disasters and the concept of disaster resilience.

General Questions:

- i. What happened to you and your family on the 25th of April and 12 May of 2015?
- ii. How did you perceive earthquake?
- iii. What was the impact of earthquake?
- iv. Did you receive any help during the first day, week and month? If yes, from whom? (government, national organizations and/or international organizations).
- v. What resources were made available to you and who provided these resources?
- vi. What resources was most important for you?
- vii. Do you think, women and men in this community have equal access to resources? Has the access to resources changed after the earthquake?
- viii. How has the 2015 earthquake affected your life when it comes to social relations, family relations and household? (Is it the same, or do you have different chores, responsibilities etc.)
- ix. Are you more vulnerable today as compared to before the earthquake? If yes, in what way?
- x. What do you think can or should be done in order to decrease vulnerability in your community? And who should be in charge?
- xi. Have the local government, or any organizations, prepared you for a new disaster?
- xii. What do you believe are the most important factors/means in order to reduce the effects of future disasters?
- xiii. Do you believe people are aware of the risk that exists in this community?

Role of Community in disaster Resilience

Participation in Earthquake disaster resilience. The community members perception about the participation of community people and I/NGOs.

-) People's perception about Community's effort in DRR.
-) People's perception about Government Organizations' effort in DRR.
-) Identify the level of peoples' participation in the Disaster Resilience process

Questions:

- a. How does the people living in Khokana perceive the role of CSOs/ Government/ Community in general?
- b. Are you familiar with the term Disaster Resilience? (if not explain it/ use different words)
- c. Did you participate in any DRR activities? **If yes:** - What roles did you play in responding to the 2015 earthquake?
- d. How many community organizations does your community have? Can you say something about these organizations?
- e. What activities have been carried out after the earthquake, and who initiated these activities?
- f. Do you feel that both women and men are included in such programs? If yes, in what way?
- g. What do you think as the most important challenge to participate in the DRR programs?
- h. How could this challenge be overcome?
- i. Are you aware of any local organization or institution that promotes DRR activities or people who are engaged in such activities?
- j. Have the government promoted any DRR activities within this community?

General Knowledge

Questions:

- i. How many people live in the community?
- ii. Give an example of risk in this community. How would this risk affect your community to cope with natural disasters?
- iii. Do you know the meaning of Resilience?
- iv. What do you know about risk and disasters?
- v. What does a catastrophic event mean for you?
- vi. Do you know the term vulnerability?
- vii. Was the institutional (non)governmental intervention after the 2015 earthquake timely (i.e., how soon after earthquake did activities begin)?
- viii. What needs were identified after the 2015 earthquake. Did these needs vary by gender ?
- ix. Were available resources adequate to meet the communities need after the earthquake?

Community inclusion

- i. Has there been any complain from other communities regarding their exclusion from the process?
- ii. What are the main activities carried out by your community related to DRR programs?
- iii. Do you think that these programs have short-term solutions or sustainable solutions?
- iv. Do you feel like there exist a mutual relationship between the organization and the community members? Describe the relationship.
- v. What are the local capacities to respond earthquake disaster today?
- vi. What role do the community members play in local DRR activities?

- vii. What key lessons can be taken forward that promotes local capacities, including women, in building the community to resist a new disaster?
- viii. What are the main barriers (social, political and economic) of vulnerability facing people within this community, according to you?

Current Context

- i. Has the reconstruction process completed?
- ii. What about water, sanitation, roads, schools, health posts etc.?
- iii. How is the public service delivery?
- iv. How is community life and livelihood: settlement, employment and food security etc.

Check list for Ward Chair Person/Social Mobilizer/Municipal representative

Vulnerability and Risk

Questions:

- i. Give us general scenario of this area; earthquake damages, recovery and reconstruction?
- ii. Do you think, women and men in this community have equal access to resources? Has the access to resources changed after the earthquake?
- iii. How has the 2015 earthquake affected the social, and family relations? (Is it the same, or do you have different chores, responsibilities etc.)
- iv. Is the people in Khokana are you more vulnerable today as compared to before the earthquake? If yes, in what way?
- v. What do you think can or should be done in order to decrease vulnerability in your community? And who should be in charge?
- vi. Have the local government, or any organizations, prepared for a new disaster?
- vii. What do you believe are the most important factors/means in order to reduce the effects of future disasters?
- viii. Do you believe people are aware of the risk that exists in this community?

Participation in Earthquake disaster resilience.

Questions:

1. Did you participate in any DRR activities? **If yes:** - What roles did you play in responding to the 2015 earthquake?
2. Can you say something about the community organizations existing and working in this community?
3. What activities have been carried out after the earthquake, and who initiated these activities?
4. Do you feel that both women and men are included in such programs? If yes, in what way?

5. What do you think as the most important challenge for disaster resilience for this community?
6. How could this challenge be overcome?
7. Has the government promoted any DRR activities within this community?

General Knowledge

Questions:

1. How many people live in the community?
2. Give an example of risk in this community. How would this risk affect this community to cope with natural disasters?
3. Has the reconstruction process completed?
4. What about water, sanitation, roads, schools, health posts etc.?

Community inclusion

1. Has there been any complain from other communities regarding their exclusion from the process?
2. What are the main activities carried out by your organization related to DRR programs?
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4. Do you feel like there exist a mutual relationship between the organization and the community members? Describe the relationship.
5. What are the local capacities to respond earthquake disaster today?
6. What role do the community members play in local DRR activities?
7. What key lessons can be taken forward that promotes local capacities, including women, in building the community to resist a new disaster?

8. What are the main barriers (social, political and economic) of vulnerability facing people within this community, according to you?