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Local understandings of community resilience in earthquake prone Nepal

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Abstract

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The concept of resilience is receiving increasing attention amongst academics, policy makers and practitioners. International frameworks have been developed; position papers drafted; and donor projects formulated with the aim of building community resilience. However this is being undertaken without a clear understanding of what community resilience is, if and how it can be enhanced, and how to measure the effectiveness of interventions with notable political and financial implications.

This thesis sets out to address this knowledge gap, by focusing on local understandings of community resilience to earthquakes in urban Nepal. Underpinned by theoretical engagement with everyday geographies, resilience research and disaster risk reduction, this research set out to address: 1. How is the concept of resilience understood by community members at the local level; and what, in local terms, are the characteristics or components of resilience. 2. How do local, academic and practitioner understandings of resilience vary. 3. Can resilience be enhanced or supported through external intervention? And if so, what form might these interventions take?

Drawing on interviews with a range of stakeholders, the findings highlight the importance of embedding earthquake risk reduction interventions in the everyday lived experience of urban communities as well as the importance of governance structures. However, how communities are defined in urban settings is complex, based on migration trends resulting in extended family networks between the rural and urban settings being viewed as important by the two urban wards. Understandings of resilience varied significantly between the academics, practitioner and local communities. While the case study communities were found to have a high level of resilience to everyday risks, building resilience to infrequent high magnitude events such as earthquakes requires local structures as well as support from local (ward and municipal level) and central government. This presents particular challenges due to fragmented governance arrangements in this post conflict state.

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Table of Contents

APPENDICES

Appendix 1   Fieldwork calendar

Appendix 2   Interview formats

Appendix 3   Nepali versions of interview formats

Appendix 4   Newspaper article concerning earthquake resistant construction

List of Figures

List of Tables

List of Boxes

List of Acronyms and Abbreviations

AD	Anno Domini
ADPC	Asian Disaster Preparedness Centre
BCPR	Bureau for Crisis Prevention and Recovery
CBDRR	Community Based Disaster Risk Reduction
DFID	Department for International Development
DMC	Disaster Management Committee
DRM	Disaster Risk Management
DRR	Disaster Risk Reduction
DRRC	Disaster Risk Reduction Committee
EQ	Earthquake
ESRC	Economic and Social Research Council
EU	European Union
EwF	Earthquakes without Frontiers Project
GDP	Gross Domestic Product
GTZ	Deutsche Gesellschaft fur Internationale Zusammenarbeit
HDR	Human Development Report
HFA	Hyogo Framework for Action
HFA2	Hyogo Framework for Action 2
IFAD	International Fund for Agricultural Development
IFRC	International Federation of Red Cross
IHRR	Institute for Hazard, Risk and Resilience
IDS	Institute of Development Studies
INGOs	International Non Governmental Organisations
IPCC	Intergovernmental Panel on Climate Change
IRIN	Humanitarian news and analysis service of the UN office for the Coordination of Humanitarian Affairs
ISDR	International Strategy for Disaster Reduction
JICA	Japan International Cooperation Agency
MDGs	Millennium Development Goals
NBC	National Building Code
NCDM	National Committee for Disaster Management
NDMA	National Disaster Management Authority
NERC	Natural Environmental Research Council

NGOs	Non Governmental Organisations
NRRC	Nepal Risk Reduction Consortium
NSET	National Society for Earthquake Technology - Nepal
OED	Oxford English Dictionary
SES	Social Ecological Systems
UK	United Kingdom
UN	United Nations
UNDP	United Nations Development Programme
UNICEF	United Nations Children's Fund
UNISDR	United Nations Office for Disaster Risk Reduction
USA	United States of America
USAID	United States Agency for International Development
VDC	Village Development Council

DECLARATION

I confirm that no part of the material presented in this thesis has previously been submitted by me or any other person for a degree in this or any other university. In all cases, where it is relevant, material from the work of others has been acknowledged.

The copyright of this thesis rests with the author. No quotation from it should be published without the author's prior written consent and all information derived from it should be acknowledged appropriately.

Hanna A. Ruszczyk

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DEDICATION

For the people I met in Nepal who graciously shared their opinions with me.

Chapter 1 Introduction

 "Natural hazards are a part of life. But hazards only become disasters when people's lives and livelihoods are swept away." – Kofi Annan, 2003.

1.1   Introduction

Community resilience, Nepal, disaster risk reduction, earthquakes, urban setting, development, everyday geographies, livelihoods, governance and social resilience are the ten key terms defining this thesis. I started the Masters by Research programme in Durham University's Department of Geography with the aim to research a topic that would have a relationship with different types of discourse (climate change, development and disaster risk reduction) in the Global South and that would potentially have practical implications and applications. It was important to me, as a researcher with almost two decades of practical international development experience, that I provide insights that can be useful for policy and practice. Based on my experience of working on livelihoods and development issues in different development contexts, resilience appeared to be an appropriate choice. Resilience is being discussed in different fields – applied and academic – and there appear to be opportunities to utilise the concept to help communities in their development and response to disasters.

At the World Conference on Disaster Reduction in 2005, the Hyogo Framework for Action 2005 – 2015 (UNISDR, 2005) was presented as the strategy to build resilience of nations and communities to disasters and since then, there has been debate concerning how resilience is utilised as a conceptual framework for disaster risk reduction. Donors (EU, 2013; DFID, 2011) have included resilience in their

frameworks for action in developing countries without, it seems, possessing a clear understanding of how to define resilience and how to utilise resilience in support of communities.

My research focuses on the discourse surrounding the contentious subject of resilience (Bene et al, 2012; Birkmann et al, 2012; Levine et al, 2012; Bahadur et al, 2010; Turner, 2010) and its relationships to communities in the event of a natural hazard. My background as a development practitioner has given me a foundation to attempt to understand how the concept of resilience could be utilised to support communities in the event of a disaster. According to the UNDP (2004, 21):

> "The capacity of a household or local community to absorb the impact and recover from a major natural hazard will be seriously limited if already weakened over time by a series of smaller-scale losses".

This relationship is important to understand because until recently, development and disaster risk reduction have been viewed in parallel rather than as an interdependent relationship (Muche, 2012; Dilley et al, 2005).

1.2   Nepal and earthquakes

Communities living on fault lines are not always aware that they are vulnerable to earthquakes. Globally, 130 million people were exposed to earthquake risk annually between 1980-2000 (UNDP, 2004) and the largest number of deaths from earthquakes is in Asia (IFRC, 2009). More than half the world's population lives in urban areas as defined by national statistical offices (World Bank, 2013e). It is therefore critical to understand how urban communities living in highly vulnerable geographic areas understand their vulnerability and resilience, what scientific knowledge they use and value, how they access information, and how communities can effectively build their

resilience in the face of such risks (Fernando, 2012; Agani et al, 2010; Rigg et al, 2008; Gaillard, 2007; Paton and Johnston, 2006).

According to UNDP's 'Reducing Disaster Risk, a Challenge for Development' (2004), Nepal is ranked 11th in the world in terms of vulnerability to earthquakes. Nepal lies in the middle portion of the Hindu Kush Himalayan region, a high seismic prone zone, and the country has a long history of destructive earthquakes (NSET, 2012; Government of Nepal, Ministry of Home Affairs, 2011). The potential damage from an earthquake for the Kathmandu Valley is said to be 'catastrophic' (NSET, 2012). Nepal is prone to other natural hazards as well, such as flooding and landslides. This combination of multiple hazard events poses a severe threat to national development processes (ADPC et al, 2011) and the World Bank (Dilley et al, 2005) consider Nepal one of the global 'hot-spots' for natural disasters (where the most frequent disasters can occur and losses are expected to be the greatest).

1.3   Research questions

This research project seeks to contribute to discussions surrounding the concept of community resilience. The objective is to research the components of resilience and community resilience within the framework of disaster risk reduction and to articulate issues that arise from taking an inductive approach to knowledge production. My research focuses on how two Nepali urban communities view the concept of community resilience in the context of natural hazards and disaster risk reduction to earthquakes in comparison to practitioner and academic understandings of resilience. The research questions that have guided the research are:

1. How is the concept of resilience understood by community members at the local level; and what, in local terms, are the characteristics or components of resilience?

2. How do local, academic and practitioner understandings of resilience vary?

3. Can resilience be enhanced or supported through external intervention? And if so, what form might these interventions take?

The research was undertaken in the Kathmandu Valley, Nepal, which is a high earthquake prone area. Figure 1.1 is a map of Nepal and of the Kathmandu Valley. The study focused on two urban wards, Lalitpur Ward 12 located in the Sub Municipality of Lalitpur and Kirtipur Ward 9 located in the Municipality of Kirtipur. Figures 1.2 and 1.3 are photographs of the two wards where the research was conducted.

Figure 1.1 Map of Nepal and Kathmandu Valley

Figure 1.2 Photograph of Lalitpur Ward 12

Figure 1.3 Photograph of Kirtipur Ward 9

1.4 Thesis structure

This thesis focuses on Nepali understandings of community resilience as well as practitioner and academic understanding of resilience. The role of governance and

everyday lives including livelihoods and social capital are explored in relation to resilience. How community resilience is created and potentially increased is related to cultural norms, social structures and the institutions of government. There are three sections to the thesis. The first section provides an introduction to the topic and the rationale for the research, research aims and the literature review of the concept of resilience in general and community resilience in particular (chapters 1 and 2). The second section covers the methodological approaches utilised and a discussion of the setting for the fieldwork (chapters 3 and 4). The third section provides the empirical data to explore how governance and everyday geographies contribute to the understanding of community resilience in relation to earthquakes, followed by the conclusion which synthesises the material presented to provide recommendations for further research (chapters 5, 6 and 7).

Section 1:

Chapter 1 – Introduction – provides the context for the research, the relationship between disaster and development, Nepal and earthquake hazard, the research questions and structure of the thesis.

Chapter 2 – Literature Review – identifies the relevant literature to provide a context for the research project. This chapter includes an overview of the history of the term resilience, resilience's relationship to key development concepts, a summary of current debates and lastly a discussion of community resilience models and the possibility of operationalising community resilience.

Section 2:

Chapter 3 – Methodology – reviews the methods utilised in this research. This chapter outlines how the research was organised, conducted and how the findings were analysed. It discusses the positionality of the researcher, explains the choice of methods, and addresses ethical considerations, the challenges faced and their resolution.

Chapter 4 – Nepal in the context of disaster resilience – reviews the context for the fieldwork. This chapter provides an overview of Nepal and the two fieldwork locations, informants' views on recent changes in society and their views on disaster risk reduction. The chapter concludes with the concept of resilience defined by earthquake experts, INGOs and the Nepali interpretation of the word resilience.

Section 3:

Chapter 5 – Governing urban community resilience – focuses on the role of governance in relation to community resilience in the urban setting. This chapter provides insight into the importance that government and governance contribute in the urban setting. Governance and disaster resilience in the urban context is discussed through a review of recent academic literature, and a review of Nepal's disaster risk reduction structure and the national building code. The concept of community is explored in the urban context and the relationship between rural and urban Nepal is discussed. The chapter concludes with views on governance from the perspective of informants from the two fieldwork communities.

Chapter 6 – Everyday Geographies and Community Resilience – focuses on everyday geographies and their relationship to community resilience. This chapter provides an

insight into the role of the everyday and the context in which people view their lives, their priorities and views on earthquakes. Community members explain whom they include in their support systems and how social capital can be understood in the Nepali context. The role of community resilience projects is explored and two community resilience models are applied to assess resilience levels of the two fieldwork sites.

Chapter 7 – Conclusion – synthesises the findings of the two empirical chapters. This chapter provides a summary of the thesis and its aims, methods, key findings on the topics of definition of resilience, governance and everyday geographies, relevance to other settings and lastly, provides recommendations for areas of future research.

Chapter 2 Making the most of resilience

"The amount of literature on resilience is now so copious that it is becoming increasingly difficult to summarise." - Alexander (2013, 1270).

2.1   Introduction

The concept of 'resilience' has become a thread that links a burgeoning body of work on poverty, vulnerability and risk, especially in countries in the Global South prone to 'natural' disasters.   There are varied contexts in which resilience is being used, including climate change, disaster risk reduction and development, with scholars, donors and practitioners increasingly researching the subject (Bahadur et al, 2010) with the aim to shape their work.   Resilience gained visibility on the international stage after the Hyogo Framework for Action in 2005 (UNISDR, 2005) and it continues to gain strength.   Over the past decade, there has been significant debate in connection with the concept of resilience, and how it is defined (Manyena et al, 2011; Miller et al, 2010).   With regard to the recent policy discourses on resilience, Brown (2011) indicates that there are many contradictions, confusions and mixed interpretations of resilience, with the concept in policy statements often at odds with scientific understandings of resilience in the social-ecological systems field.   There has also been debate concerning how resilience is utilised as a conceptual framework for disaster risk reduction and how it is operationalised.   For example, Mayunga (2007) notes that it is difficult to define and develop indicators that can adequately measure resilience.

Despite the increasing use of the term, there has been little consensus on which models of resilience are most appropriate for building community resilience, or which operational frameworks are the most effective, particularly in urban settings (Cutter et

al, 2008; Norris et al, 2008; Mayunga, 2007). It is not clear what the entry point for action should be within urban communities, or what role different levels of governance can and should play. Is it a replacement for sustainable development in the international development field? Is resilience a panacea for all development issues? Is it a passing phase that will burn out within a decade? Should we try to put fixed parameters around the phrase and use it more discriminately in partnership with other concepts such as vulnerability and adaptive capacity? These are some of the questions that were considered when conducting the literature review. There are other contrasting epistemological lenses on resilience, for example from the psychological, engineering and economic fields, but these are beyond the purview of this study. This chapter summarises the current state of knowledge primarily from the social science perspective related to resilience and more specifically community resilience in the context of disaster risk reduction. These two concepts frame the research underpinning this thesis.

2.2   Defining resilience

According to Rose (2009, 1), resilience is "either poorly defined or defined broadly as to be meaningless". Researchers utilise comparative tables of definitions of the term resilience (Julich et al, 2012; Bahadur et al, 2010) to provide structure to the numerous definitions of resilience. There is no single, fixed definition of the term and the need for epistemological clarity, therefore, is pressing (Gallopin, 2006). The concept of resilience is currently utilised in a ubiquitous fashion with different definitions in different settings often leading to confusion (Bene et al, 2012; Levine et al, 2012; Aven, 2011; Brand and Jax, 2007, Cumming et al, 2005).

2.2.1   Current definition of resilience

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 structures 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 organising itself both prior to and during times of need.

2.2.2 Evolution of the term resilience

It is commonly accepted that the concept of resilience derives from the ecological field. According to Rival, (2009, 296-297):

> "According to the OED, the English word resilient comes from the Latin word resilience, which derives from the verb resilire (to rebound or to recoil), a compound of re (back) and salire (to jump, to leap). The word first used in English by Bacon in 1626 was formally defined in 1656 as meaning a leaping or skipping back, a rebounding."

Each of the fields below in Figure 2.1 contributes a new source of knowledge to the discussion of resilience. However, the framework for discussion varies within each discipline as Alexander (2013, 1272) argues:

> "It is striking how the term is used in different disciplines without any reference to how it is employed in other fields, as if there were nothing to learn or transfer from one branch of science to another."

11

c. AD 35	**LAW** **LITERATURE**
1529	**STATESMANSHIP**
1625	**SCIENTIFIC METHOD**
1859	**MECHANICS**
	CHILD PSYCHOLOGY
1930	**MANUFACTURING** **ANTHROPOLOGY**
1950	
	SOCIAL RESEARCH
1973	**ECOLOGY**
2000	**MANAGEMENT (ADAPTIVE)** **DISASTER RISK REDUCTION**
	SUSTAINABILITY SCIENCE
2010	**CLIMATE CHANGE ADAPTATION**
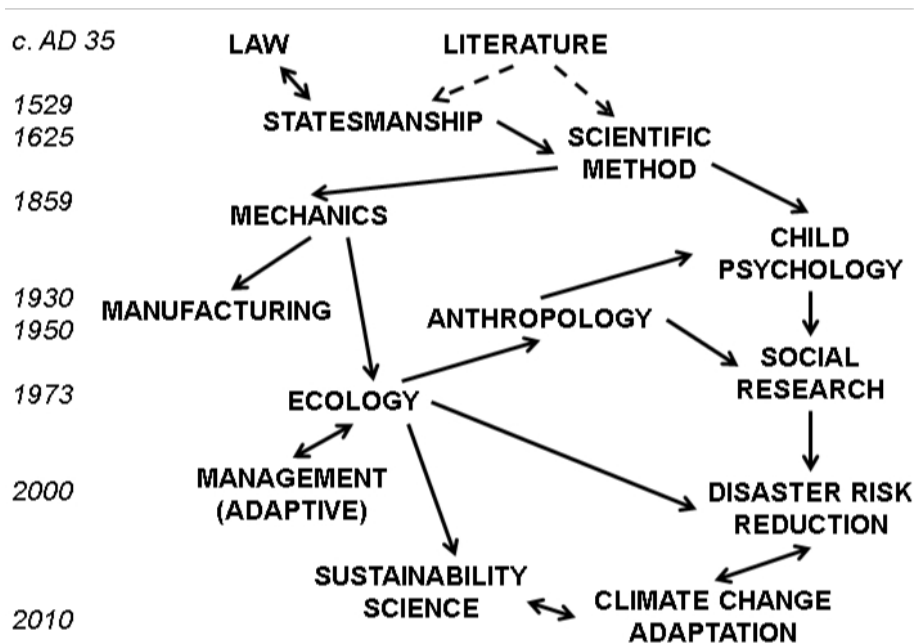
Figure 2.1 Schematic diagram of the evolution of the term "resilience" (Source: Alexander 2013, 1283)

Ecology pioneered a definition of resilience relating to the survival of complex systems in relation to the size of shock that is absorbed. A systems approach has made the concept of resilience enticing to researchers who are interested in exploring resilience and the concept of scale. In a seminal paper (1973), Holling concluded that an ecological system could be resilient and still fluctuate greatly, providing it can absorb shocks without major loss of form and function. Holling included the concept of flexibility in relation to the system. Gunderson and Holling's (2002) equally important concept of 'panarchy' strengthened the concept that resilience is a system by taking into account the fast/slow resilience dynamics and cross-scale interactions and interdependencies that can be found in a system. Brand and Jax (2007) suggest to treat resilience either as a "descriptive" concept (explaining the state of a system based on a specific theoretical basis, for example, ecology) or a "normative" concept (as a way of thinking using a broader meaning across disciplines to identify a set of systems properties) as well as to view resilience as a "boundary object" (platform to link various actors and interests) across natural and social sciences. According to

12

Hutter et al (2011), resilience can change over time; it is variable. Resilience should be viewed as sometimes a static and fixed entity, and sometimes as fluid and more process oriented needing a focus on social context conditions.

In the disaster risk reduction literature, Walker and Westley (2011) note that resilience is the capacity to survive, adapt and recover from a natural disaster. Resilience relies on understanding the nature of possible natural disasters and taking steps to reduce risk before an event as well as providing for quick recovery when a natural disaster occurs. Carpenter et al (2001) give some clarity to the discussion on resilience by focusing on the context of where resilience will occur, 'of what and to what', Carpenter et al's research is helping to steer the discussion to understand the local context of a disaster situation. The researchers (2001, 777) also refer to "flexibility of agents to negotiate local solutions to the problem and the existence of incentives to increase resilience". In order to understand resilience, it can be considered in relation to a potential hazard and the change that will occur (Cumming et al, 2005) and those that are impacted by the change. Carpenter et al (2001) also highlight that little attention has been paid to operational indicators of resilience, subsequently, researchers have attempted to operationalise resilience (Cumming et al, 2005; Cutter et al, 2008; Sherrieb et al, 2010).

Some scholars call for a more integrated approach and the involvement of multiple disciplines and actors to understand and utilise the concept of resilience in a more effective manner (Julich et al, 2012; Carpenter et al, 2009; Cumming et al, 2005). Rival (2009, 299) suggests:

> "Although resilience researchers aspire to link the physical, ecological and social domains in effective ways, they may be neglecting dimensions of the human-environment interface. Different cultural perspectives on human nature,

the biophysical world, society and individual rights, as well as how these may influence behaviour towards the environment" need to be considered.

Gaillard (2007, 531) highlights in a research article on traditional societies:

"The capacity of resilience in the face of natural hazards and related cultural changes are commanded by interrelation of factors that vary in time and space from one event to another. The factors are physical, socio-cultural, geographic and political in nature."

Extreme events affect physical, ecological, economic, cultural and social systems simultaneously (Carpenter et al, 2009). The interrelationships and interdependencies between these systems are essential to understanding how resilience functions. Resilience (as a system) is a neutral term; it is not necessarily positive or negative; attributing qualitative attributes distorts the value of the concept by attributing expectations that the concept cannot achieve (Bene et al, 2013).

2.3   The relationship of resilience to key development concepts

As the term resilience is increasingly used to refer to social and socio-ecological rather than purely ecological processes, its meaning is shifting towards related concepts such as poverty, sustainability, vulnerability and adaptive capacity (Rival, 2009). Hornborg (2009) criticises resilience theorists for a lack of attention to power relations, politics and culture; resilience as a concept cannot replace the long term focus on underlying causes of poverty, risk and vulnerability of people in the global south (Cannon and Muller-Mahn, 2010; Gaillard, 2010; Wisner et al, 2004). The section below highlights the key points of the relationship of resilience to development concepts.

2.3.1   Poverty and vulnerability

Resilience does not decrease or alleviate poverty, it is not 'pro poor' (Bene et al, 2012); people can be poor and resilient at the same time. Often times, the poorest

people are very resilient in their coping strategies (Bene et al, 2013). This does not signify that resilience is a positive concept; for example, strengthening the overall resilience of a particular community may be at the detriment of a marginalised group within that community. Resilience is an analytical framework that does not have a moral compass (Bene et al, 2013); for example, resilience maybe achieved at the expense of wellbeing (Armitage et al, 2012). Development should concentrate on poverty alleviation and wellbeing, not only on resilience building (White, 2010; Lavers, 2007; Colletta and Cullen, 2002). Bene et al (2013) argue that any discussion of resilience needs to take into account agency and inequity and the power dynamics particularly between winners and losers in communities. Resilience researchers need to maintain an awareness of political contexts and the danger of using resilience as a concept if it only leads to reinforcing the status quo (Cannon and Muller-Mahn, 2010).

Historically, the concepts of vulnerability and resilience have been linked in disaster and hazards literature (Gaillard, 2010). According to Birkmann (2006), vulnerability models diverge in terms of explaining the root causes of vulnerability. Pelling (2003) separates vulnerability to natural hazards into three parts: exposure, resistance, and resilience. In the community resilience literature, vulnerability is even more linked to resilience. In some cases, resilience is understood as the opposite of vulnerability (Adger et al, 2005; Folke et al, 2002). Generally, a common ground can be seen in the understanding that resilience describes the capability of a system to maintain its basic functions and structures in a time of shocks and perturbations (Adger et al, 2005). This definition of resilience also implies that the respective system or unit is able to adapt and learn, meaning that the system – for example, social system, ecosystem, or coupled human-environmental system – can mobilise sufficient self-

organisation to maintain essential structures and processes within a coping or adaptation process (Adger et al, 2005).

Some scholars contend that resilience and vulnerability are opposites, while others see them as interrelated (Manyena, 2006). Blaikie et al (1994) and Pelling (2003) define resilience to natural hazards as the ability of an individual to cope with or adapt to hazard stress. Vulnerability is primarily a pre-disaster condition, resilience presents itself in a post-disaster response, the concepts are related but not opposites or the flipside of each other. The increased resilience of people and communities does not decrease vulnerability nor risk (Levine et al, 2012) to a specific event. Resilience is one of several ways to reduce vulnerability, the others are adaptation and the entirely separate strategy of mitigation (Pelling, 2003). Resilience and vulnerability both manifest themselves on various scales and levels (Bene et al, 2012; Gallopin, 2006). According to Manyena (2006), resilience appears positive, but it could push the responsibility of adaptation, mitigation and recovery on the vulnerable themselves rather than focusing on the larger picture. Vulnerability discussions give rise to the topics of "people, power and politics" (Bene et al 2012, 17) which resilience tends to ignore due to its connection to 'system effects' (Gallopin, 2006). Vulnerability tends to have 'negative connotations' (Cannon and Muller-Mahn, 2010) while resilience has 'positive connotations' (Levine et al, 2012). According to Cannon and Muller-Mahn (2010, 633), the discussion from vulnerability to resilience is a "shift of interests and objectives that leaves the poor and vulnerable behind". Both concepts (vulnerability and resilience) are needed in the discussion regarding how to better the reality for people in the global south in the face of disasters.

2.3.2 Sustainability

The resilience of a community is inextricably linked to the condition of the environment and the treatment of its resources; therefore the concept of sustainability is central to studies of resilience (Cutter et al, 2008b). The environment and national resources are important considerations when analysing resilience. At the present time, the international focus is on climate change and disasters rather than sustainable development. Sustainability refers to long-term survival of people and communities; resilience as a concept can be a component of sustainable development, not the replacement of sustainable development as a guiding concept.

2.3.3 Adaptive capacity

Considerations for human societies to adapt to environmental extremes leads researchers to consider the relationship of resilience to adaptive capacity (Gaillard, 2010; Gallopin, 2006). As Klein et al (2003, 43) argue, "maintaining and enhancing adaptive capacity should be the overall goal of resilience". As Birkmann (2006, 15) discusses:

> "Resilience is defined as the capacity to absorb disturbances or shocks and is thus more linked to the understanding of resistance or whether the term refers to the regenerative abilities of a social or an eco-system, encompassing the ability to learn and adapt to incremental changes and sudden shocks while maintaining its major functions."

This definition relates to the coping and adaptation phase (Adger et al, 2005). Losing resilience implies loss of adaptability. Adaptability in a resilience framework does not only imply adaptive capacity to respond within the social domain, but also to respond to and shape ecosystem dynamics and change in an informed manner (Berkes et al, 2003). A system characterised by diversity, potential for change, level of redundancy and by connectedness (feedbacks, flexibility) usually has better adaptive capacity

(Folke, 2006). There has also been discussion about whether or not resilience and adaptive capacity are the same concept (Gallopin, 2006). The IPCC (2007) views adaptation as the system's capacity to absorb and recover from the occurrence of a hazardous event. There is no consensus (Bahadur et al, 2010), therefore, regarding the relationship between adaptive capacity and resilience.

2.4   Current debates concerning resilience

The prevalence of resilience in policy discourse and academic debates suggests that resilience has become one of the leading ideas to deal with uncertainty and change in our times (Hutter et al, 2011). Schipper and Pelling (2006, 19) discuss the "theoretical and policy linkages among disaster risk reduction, climate change and development". They find:

> "Not only does action within one realm affect capacity for action in the others but also that there is much that can be learnt and shared between research (in disaster risk reduction, climate change and development) in order to ensure a move towards a path of integrated and sustainable development."

There is a real danger of mis-use of the term resilience, as it seems to be increasingly co-opted to accommodate rather than to challenge forms of development that have clear responsibility in climate change and other global environmental problems (Bene et al, 2013; Cannon and Muller-Mahn, 2010). Another concern is expecting that resilience can provide more insight and greater modeling capacity than it is capable of furnishing (Alexander, 2013). Rival (2009, 294) explores:

> "Some of the reasons why resilience has become such a powerful word in the last few years, and why, despite the obvious problems linked to its popularity and its co-optation in the development discourse, resilience is a useful concept that helps us overcome dichotomous thinking when we attempt to theorize the intractable linkages between the natural world and the social world."

Levine et al (2012) question the relevance of resilience and Bene et al (2012) question whether resilience is a new utopia or a new tyranny. According to Alexander (2013, 1271), there will be disillusionment if the "term is pushed to represent more than it can deliver, the problem lies in attempts to make resilience a full-scale paradigm, which it is not" (Alexander, 2013). Resilience is a valuable concept when utilised in conjunction with other key concepts such as sustainability, vulnerability, power, adaptive capacity and agency in relation to disasters.

2.4.1 Resilience in international discourse

As noted by Alexander (2012), the International Decade for Natural Disaster Reduction (1990-2000) began to look at reducing the disaster risk of communities at risk to natural disasters. The emphasis slowly began to shift from reaction to pre-emptive action, and thus emerged the concepts of disaster risk reduction and resilience (UNISDR, 2005) according to Alexander (2012). Since 2000, the International Strategy for Disaster Reduction has been promoting the links and synergies between, and the coordination of, disaster reduction activities in the socio-economic, humanitarian and development fields, as well as to support policy integration. This was concretised in the Hyogo Framework for Action at the World Conference on Disaster Reduction in January 2005, where strategies to build the resilience of nations and communities to disasters were agreed and committed to by 168 governments (UNISDR, 2013a). The HFA attempts to promote a strategic and systematic approach to reducing vulnerabilities and risks to hazards. Currently consultations are taking place on a Post-2015 Framework on Disaster Risk Reduction (HFA2). From the implementation of the Hyogo Framework for Action, resilience has been redefined (UNISDR 2013a, 4) to be more inclusive:

"A common outcome that integrates poverty reduction, disaster risk reduction, sustainable livelihoods and climate change adaptation, as integral to sustainable development, although the indicators of resilience need to be further articulated."

UNISDR's comment above reflects the ability of the concept of resilience to create dialogue space for different actors. Theory comes from interaction with the world; resilience work has a role to play in addressing the needs of policy makers, developing nations, practitioners and NGOs working in developing nations. In disaster risk reduction, resilience refers, by analogy with materials testing, to the ability of the social system to resist a shock and absorb its effects (Berkes, 2007). As Bahadur et al (2010, 4) argue, "the climate change and disaster communities have created their own specialist lexicon". Bahadur et al (2010) detail 16 different conceptualisations of resilience in social, ecological and socio-ecological systems for tackling climate change and disasters. As the previous discussion has demonstrated, the term 'resilience' is complex and ambiguous.

The word resilience plays a central role in national policy papers (DFID Defining Disaster Resilience: A DFID Approach Paper UKaid, 2011) and in the international arena (EU, 2013; IPCC, 2007). DFID aims to embed resilience into all its country programmes by 2015 (DFID, 2011). The EU (2013) stresses that it is primarily a national government's responsibility to build resilience. The EU (2013, 3) also stresses the need to:

"Invest in capacity strengthening across all relevant sectors and ensure that analysis and solutions are rooted in local ownership and the experience of affected communities, countries and regions. Stress the importance of working closely with local communities, civil society, local authorities, research institutions and the private sector in devising and implementing policy responses, while retaining state-building and international co-operation as central elements of the resilience framework."

Resilience is being discussed on the international policy level, position papers have been developed and donor projects are being formulated to build disaster community resilience, but without a clear understanding of what it is, how best to increase it, how it can be achieved and how it is measured for evaluation purposes (Levine et al, 2012). There are many unknowns with tremendous political and monetary implications.

2.4.2   Resilience as a mechanism for bouncing (back or forward)

Disasters always change the local reality (Wilson, 2012a). In terms of recovery from disasters, resilience was originally conceptualised as the ability to 'bounce back' (Twigg, 2007) and restore normal lives and livelihoods rapidly after a disaster in keeping with its original Latin definition. People want to get back to 'normal' after a disaster but it is near impossible. As Cumming et al (2005) highlight, that the past cannot be reinvented. The notion of 'bounce back' does not signal change, it could signal bouncing back to the conditions that caused the disaster in the first place (Sapountzaki, 2007).   The positive side of a disaster is that, in revealing vulnerabilities, it provides the opportunity to reduce them (Birkmann, 2006). Wilson (2012a, 85) states after a disaster, the period of readjustment and recovery:

> "May not benefit all stakeholders in a community equally, and that the 'new' transitional trajectory after a transitional rupture is almost always qualitatively different from preceding community structures with regard to shifts in power structures and networks of decision-making."

In contrast, Manyena introduces the concept of "bounce forward" (2009, 261):

> "Resilience-oriented capacity building processes comprises specific approaches, strategies and methodologies to transform the ability of individuals or groups, including the most vulnerable individuals groups, so they can perform functions to 'bounce forward' or 'move on' following a disaster event. This thinking has psychological and practical implications. The 'bounce forward' conception is optimistic. For instance, in the pre-disaster stage potential victims can develop attitudes of hope and self-assurance of surviving the destabilising events with minimal or no assistance

> at all. In other words, emphasising 'bounce forward' can have an impact on behaviour change of potential disaster victims and service providers."

Resilience has evolved to mean the ability to move to a higher state of preparedness, as exemplified in the campaign to 'build back better' (Practical Action, 2013) and thus not to recreate pre-existing vulnerabilities. This has added a new element to the discussion on resilience because it suggests a new possible state after the disaster. Wilson (2012c) supports the view of resilience as the process which allows people to take responsibility and control of development pathways in order to progress to a better state. Similarly, Bene et al (2013) interpret resilience as a framework that includes absorptive capacity, adaptive capacity, and transformative capacity. Bene et al (2013) define absorptive capacity as the ability to cope with and absorb the effects of shocks and stresses, adaptive capacity is the ability of individuals or societies to adjust and adapt to shocks and stresses but keep the overall system functioning in broadly the same way and lastly transformative capacity is the ability to change the system fundamentally. Most recently, 'transformability' has received attention as the new 'bounce forward' because it highlights new pathways that can be explored to enable communities to change their reality (Bene et al, 2013). Transformability is the capacity to evolve into a fundamentally new system when existing conditions are untenable (Walker et al, 2004; Folke et al, 2010). Resilience in this context is seen as a guiding vision, rather than a strong analytic and theory based tool or concept (Julich et al, 2012).

Despite this shift, Levine et al (2012) question whether to bounce back better is possible and they are uncertain if the literature substantively supports this thinking. "Building back better for whom?' is a relevant question; who decides which component of the community is supported? Christoplos (2006) reviews the

assumption that the post-disaster recovery phase provides a 'window of opportunity' for DRR in post-disaster recovery arguing that there is little confirmation that this window exists in practice and questions whether there have been positive outcomes. There is conflicting data whether disasters are indeed opportunities for social change and whether they can be transformative. In order to bounce forward, the conditions need to be present for the change to be made. It is unclear what those necessary conditions are to facilitate transformative change. If decades of development support has not been able to facilitate this change, what feature of the resilience concept facilitates the possibility of transformational change?

2.5   Community resilience

Increasingly, community resilience is at the focus of academic research, policy dialogue and practitioner engagement. Resilient communities are the goal of the Hyogo Framework for Action and government agencies, and subsequently, donors have developed resilience papers including DFID (2011) and the EU (2013). Practitioners, including NGOs such the British Red Cross (Kyazze et al, 2012), Practical Action (2011), and Oxfam (Hillier and Castillo, 2013), are engaging in community resilience initiatives and beginning to document their lessons learnt and recommendations for future interventions. However, there remains significant debate and uncertainty regarding how to support community resilience. 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 if and when they occur, which emphasises anticipation, preparedness and recovery rather than prevention and hazard risk mitigation." As Wilson argues (2012c, 12), "resilience is not 'made' and does not emerge out of a vacuum, but it is transferred through complex processes of policy and other exchanges between communities and wider society". The relationships

between different scales and pathways is important to the concept of community resilience because the different scales impact levels of resilience, type and composition of resilience in other scales.

2.5.1   Models of community resilience

Community resilience has been explored by scholars from various perspectives, as presented below. The social-ecological system's (SES) resilience perspective is useful for developing a community resilience framework. The SES links systems of people and nature and it highlights the interconnectedness of different systems. It has the advantage of not only focusing on the bouncing-back capacity of a system, but also on the capacity to learn and adapt as argued by Turner (2010). Two of the 16 resilience models for climate change and disasters reviewed by Bahadur et al (2010) are described below and have components of the SES:

The first model is Berkes (2007), which builds on the work of Folke (2006) to focus on four components of resilience (attitude to change and uncertainty, degree of diversity, variety of knowledge employed in learning processes, and ability of self-organisation and cross-scalar linkages) that are seen to be important in building the resilience of socioeconomic systems (communities).   This socially oriented framework is useful in highlighting the range of attributes that are needed for a resilient community but may not include other possible elements of a resilient system (for example, the relationship with government, the environment, or infrastructure).

Twigg (2007) is the second model reviewed, which describes a systems approach to community resilience as the capacity to: anticipate, minimise and absorb potential stresses or destructive forces through adaptation or resistance, manage or maintain certain basic functions and structures during disastrous events and lastly, recover or

'bounce back' after an event. Twigg defines characteristics of a disaster resilient community utilising the Hyogo Framework for Action; the five thematic areas for action include: governance, risk assessment, knowledge and education, risk management and vulnerability reduction and disaster preparedness and response. Twigg views resilience as a broader concept than 'capacity' because it goes beyond the specific behaviour, strategies and measures for risk reduction and management that are normally understood as capacities. However, one drawback is the diverse range of thematic areas upon which to focus, making it difficult to choose what to focus on at the community level.

Other scholars not found in the Bahadur et al review of resilience models are also considering community resilience. Tobin (1999) reveals that resilience is a function of building capacities of communities and individuals. He stresses that development and humanitarian interventions present opportunities to build local capacity through training, technical assistance, technology transfer, information exchange, network development and management skills and professional linkages. These characteristics can be utilised as benchmarks for building community resilience initiatives at a local level; a limitation of this model is there is minimal reference to social resilience.

In contrast, from a systems perspective, Walker et al (2004) supports the assumption that accessing and utilising the major forms of capital (social, economic, physical, and human) are important factors in building community capacities to deal with disasters. Norris et al (2008) view community resilience as a process and not an outcome that emerges from four primary sets of adaptive capacities or components: (1) economic development, (2) social capital, (3) information and communication, and (4) community competence. According to Norris et al (2008), these capacities, when taken together, provide a strategy for disaster readiness. Communities are perceived

to be composed of built, natural, social, and economic environments that influence one another in complex ways. Norris et al (2008) focus on the relationships between different scales and different components of a system; they suggest that post-disaster community health depends in part on the effectiveness of organisational responses. Tobin, Walker et al, and Norris et al focus on the interrelationships between different systems on different levels and the necessity to view the relationships between various components.

From a vulnerability and risk perspective, Wisner et al (2004) discuss the concept of community resilience to earthquakes by highlighting social mechanisms and institutional capacities. They suggest people are resourceful, have capabilities and try to protect their livelihoods and assets. They argue "in the absence of grassroots and neighborhood organisations, vulnerability increases" (Ibid, 316). From the Wisner et al perspective, supporting communities impacted by an earthquake but not controlling the communities is essential; local institutions should be strengthened, tapping into local coping mechanisms and knowledge, and lastly, efforts need to support community leaders after a disaster. Manyena et al (2011) propose that the essential elements for community resilience are effective governance, diversification of livelihood assets and relationship with the environment supporting the position of Wisner et al.

The emBRACE working paper 1.2 (Birkmann et al 2012, 7) notes that the "spatial context of resilience is as yet unaddressed in studies that measure social-ecological resilience". Context specific indicators are valuable to consider when discussing the concept of community resilience because they help to give information about the setting in which people live and conduct their daily lives. According to Manyena et al (2011, 419), "the ways in which societies have prepared themselves to deal with

uncertainties and change have shaped norms, values, customs and practices and governance systems". Murphy (2007) argues that communities, whether or not tied to particular places are essential, but often overlooked resources in both proactive and reactive phase of emergency management. Communities need to be at the centre of any external efforts to build capacity to deal with natural hazards and possible disasters.

From the experience of Buckle, Marsh and Smale (2003b, 42-46) there are a set of principles for nurturing resilience: communities should have good governance and policies should reflect community needs and aspirations; there should be adequate resourcing (financial, skills and knowledge) of resilience-building programmes; lastly, change is inevitable and resilient communities need to incorporate mechanisms for change and adaptation. Buckle (2006, 99) proposes that community resilience programmes should "ensure that there is integrated development of social, economic livelihoods, environmental and cultural dimensions to community life". These concrete principles can be considered and utilised in interventions to increase resilience of communities to hazards.

Buckle (2006, 97) has identified the following elements that support resilience at the community level from his investigations in Australia:

- **Knowledge of hazards** and of community characteristics essential in developing and maintaining capacity to avoid or reduce the impacts of disaster.
- **Shared community values** include a positive sense of the future, a commitment to the community as a whole and agreement, broadly, on

community goals. This does not exclude diversity, but does exclude competitive and antagonistic goals and values.

- **Established social infrastructure** includes information channels, social networks and community organisations (e.g., churches, sporting clubs).

- **Positive social and economic trends** include a stable or growing population and a viable economy, both contributing to sustainability. Positive trends and sustainability assist the community to deal with adverse conditions.

- **Partnership between government, community groups and private sector** or any combination facilitates innovation, shared knowledge, experience and resources.

- **Resources and skills** can be generic attributes (e.g., management or financial skills, human resource potential). These can be measured by their cost, availability and ease of access.

Similarly, research in Australian communities highlight the following issues from the perspective of the community members (Buckle et al 2003b, 15-16): the need for empowerment of local people and their communities so that planning and decision-making is a combination of top down and bottom up; the need for local leadership; the need for a focal point, a physical building where trust and mutual support can be fostered; trust in the government, local and national, including high levels of trust and social capital within networks and across networks; the need to develop and maintain networks; and, lastly, the need to ensure effective and open, accessible communication processes are in place in which all stakeholders may participate. Individuals and their communities could be considered the focal area for community

resilience. The research in Australia presents what people find relevant for community resilience and this could be utilised in efforts to operationalise and build community resilience in other settings.

2.5.2   Operationalising community resilience

> "The resilience construct has increasingly gained space in the disaster and development discourse. Strengthening communities, by building on their existing capacity, to recover from disasters quickly with minimal or no assistance, has gained currency in recent years amid the increase in disaster losses and impacts. Thus, development and humanitarian resources can be a catalyst in enhancing resilience of the communities affected by or at risk to disasters." – Manyena (2009, 63)

This comment by Manyena highlights some of the issues related to resilience in the context of development and disaster risk reduction narratives. Resilience is being utilised as a mechanism to support communities in the aftermaths of a disaster. Building up the capacity of communities to help themselves become resilient could be a long term goal but in the short term, outside intervention is critical to build capacity and embed resilience.

Practitioners increasingly need operational indicators of resilience due to the significance assigned to resilience by the donors (DFID, 2011; EU, 2013) and the need to quantify results and impact value for money. Consensus has not been reached whether it is possible to operationalise resilience and, if it is feasible, how best to operationalise this nebulous concept. According to Bahadur et al (2010), "while reviewing literature on the resilience concept has yielded insight into the essential components, characteristics and possible indicators of resilient systems, a number of gaps in understanding remain". A key challenge and gap is to address the quantification and measurement of resilience in all its interrelated dimensions. Clear criteria and parameters of resilience for specific uses still need to be defined. The

initial attempt to underpin an operational approach to resilience by Bahadur et al (2010) highlight characteristics of resilient systems based on the frequency of reference in the literature they reviewed. They include: High diversity of the people, Effective governance / institutions / control mechanisms, Acceptance of uncertainty and change, Community involvement and inclusion of local knowledge, Preparedness, Planning and readiness, High degree of equity, High degree of equity, and lastly, Adoption of a cross-scalar perspective. This work needs to be taken forward and enhanced so that it can be tested in interventions.

2.6   Summary

This chapter has focused on understanding the concept of resilience, its relationship to key development concepts, current debates concerning resilience, reviewing models of community resilience and reviewing issues related to attempts to operationalise community resilience. Resilience as a system includes three elements: preparation, response and recovery and the concept is also a bridging tool to open dialogue on wider development issues. Resilience has the potential to offer a systemic and crosscutting approach to disaster risk reduction, climate change adaptation and the humanitarian sector (Bahadur et al, 2010; Levine et al, 2012). Resilience is a unifying and useful term in the development context. Bene et al (2013, 2) describe the resilience approach as requiring:

> "us to consider a number of different issues and perspectives all together. It helps us therefore, to think holistically and encourages us to adopt cross-sectoral and inter-disciplinary approaches that enable us to see the bigger picture."

In addition to this, Carpenter et al (2006) draw attention to the importance of cross-scale effects of key variables and to the hierarchy of linked social-ecological processes operating at different temporal and spatial scales. Bene et al (2013) discuss

the emphasis of resilience on holistic and cross-sectoral approaches, thus giving us the opportunity to understand the consequences of shocks on different levels (local, global) and across different scales since disasters will affect people and environments simultaneously. Analysis of broader spatial and temporal scales will strengthen understanding of community resilience; according to Walker et al (2004, 299), "resilience can operate at different scales, and it has been noted that there can be losses of resilience at some scales thereby increasing it at other, higher scales". According to Wilson (2012b, 3), resilience is a process that can change over time; it is "a relative attribute characterised by responses to disturbances which can only be assessed by looking at changes in a system over time". Resilience thinking (Bene et al 2013, 2) can "help policy actors realise how actions at one level can have implications at others, and how intervention into one part of a system can help (or hinder) another part." This is one of the primary elements of resilience that has made resilience one of the key concepts in the past decade in disaster and development work.

Community resilience can be viewed in a system's approach, a system that can adapt to, respond and then be changed. The new reality may be similar to the pre-disaster situation or it may be fundamentally different, this may be considered alternatively as bouncing back, bouncing back better or lastly, transformational change. These outcomes are aspirational goals; theoretically, such change is possible, although on a local level, power issues, the agency of individual and the severity of the disaster may not lend themselves to transformational changes. As Armitage et al (2012, 14) state, "resilience is complex, context-specific and highly dynamic". The change that will occur after a disaster will be based on the context in which it occurs - the event, the response and the recovery processes in place. Resilience can be seen / assessed after

the disaster event, it cannot be fully evaluated beforehand. The Synthesis Report (UNISDR 2013a, 6) for preparations for HFA 2 discusses the need to understand risk perception and resilience on a local level where the disasters strike, especially:

> "The importance of characterising risk and resilience in ways that non-specialists relate to for example by describing risk as it relates to people's everyday concerns of job security, housing, health, education and infrastructure."

Several scholars (Murphy, 2007; Buckle, 2006; Wisner et al, 2004; Buckle et al, 2003b) highlight the necessity to look at the local level and what is found within people and within groups. These aspects are significant in relation to the concept of community resilience. There may be proxy tools by which we try to increase community resilience by building the capacity of individuals and groups in the community to deal with the natural hazard event. Resilience levels also change depending on the hazard, severity of event and groups. A limitation of the resilience concept as a system is that it takes discussion away from power of the people and individuals. The assumption is that the system will function in a specific manner. The resilience framework is a neutral systems approach (Bene et al, 2012) and we should not attempt to put positive attributes onto the concept therefore not subjecting it to unrealistic expectations. Resilience researchers could make the effort to learn from different disciplines (Levine et al, 2012), this will strengthen the resilience concept in how it can frame discussion on community resilience and attempt to increase community resilience to disasters. Alexander (2013, 1270) proposes that there are also many difficulties in operationalising resilience and in "designing strategies to achieve it in diverse, complicated and changing circumstances influenced by many variables".

A series of questions are raised from the literature review: How are resilience pathways built? Who influences the pathways? Can the elements of resilience be created, what is the role of outside intervention, can resilience be strengthened, replicated, operationalised, how dependent on local context, culture, society, governments, donors/practitioners is the concept of community resilience? These are all questions that need to be answered in order for resilience as a concept to be more relevant in the disaster risk reduction and development fields. This research provides some information on how resilience is understood by communities and practitioners who support community resilience in Nepal.

The next chapter reviews the methods utilised in this research. The chapter outlines how the research was organised, conducted and how the findings were analysed; it specifies the positionality, choice of methods, ethical considerations, challenges faced and resolution to the challenges.

Chapter 3 Methodology

"Ask them." – Robert Chambers, personal communication (June 14, 2013).

3.1 Introduction

The research objective and questions have guided the choice of methodology and the identification of the most appropriate ways of gathering the information required. My research questions concern the understanding of the word resilience in the Nepali context within two urban communities, the characteristics of resilience, as well as how donors and INGOs/practitioners who implement disaster risk reduction projects in Nepal consider resilience. These three groups of stakeholders - communities, donors/INGOs/practitioners and academics – provide insights into understanding how the concept of resilience can be viewed and supported in urban settings.

The Kathmandu Valley fieldwork was undertaken over a period of three and half weeks in January 2013. This chapter outlines how the research was organised, conducted and how the findings were analysed. In order to acquire data that had an emphasis on depth rather than quantity due to the short period of fieldwork, a number of methods were utilised with different types of participants. All attempts were made to utilise the most appropriate method for the type of information to be collected. My own positionality is examined and I provide a reflexive account of how the methods were used. A review of the challenges faced during data collection and how they were resolved is also presented in this chapter.

3.2 The epistemology of researching community resilience and disaster risk reduction

The type of research being explored and the research questions posed guided the social science research methodology employed. A qualitative approach to building knowledge is utilised in order to ask exploratory questions and the thesis is empirically driven. My epistemological approach is based on the theoretical engagement with everyday geographies, resilience research, and disaster risk reduction literature. Grounded theory (Glaser and Strauss, 1967) and an inductive approach were used to provide the conceptual framing and to investigate the research questions while the field research served as a guide to what needed to be understood and learnt. An inductive approach to theory was utilised, striving for theory to emerge from the "ground"; the concepts emerged, were tested and fed back in an iterative manner. Rigg (2012, 187) highlights the significance of the inductive approach "to understanding, interpreting and explaining development… need[ing] to start with people's actions and choices, not with large questions which encourage large and simplified answers." People's everyday actions and decisions are complex, contextual and give rise to larger answers (Rigg, 2007). Community resilience is focused on people, what they value when making decisions and how decisions made impact them and their communities.

This qualitative research contains engagement with everyday geographies (Rigg, 2007) as well as an analysis of livelihoods (Scoones, 2009; Scoones, 1998; Chambers, 1995; Chambers and Conway, 1991) and the relationship with disaster risk reduction efforts (Alexander, 2013; Wisner et al, 2012; Birkmann, 2006; Wisner et al, 2004; Ozerdem, 2003). This research has allowed me to engage with different types of discourse and to learn about the relationships between everyday living, focus on

livelihoods and disaster risk reduction. This proved valuable in making the links between people, their lives, INGOs and government. I also assessed the topics of social capital (Aldrich, 2012; Murphy, 2007; Coleman, 1998; Putnam 1995) and governance in the context of urban communities (Dodman et al, 2013; Valdes et al, 2012; Satterthwaite et al, 2007). Storey (1997, 4) proposes "methodology is dependent on the environment the researcher finds himself [sic] in with all the opportunities and constraints confronted." This research takes into account everyday realities and is dependent on the local, national and cultural variables (Storey, 1997). It is through this process of dialogue between theory and practice that knowledge and understanding are furthered (Graham, 2005) in this research project.

3.2.1 Positionality

Skelton (2001) highlights that in cross-cultural research, there are issues of positionality, power and race. She includes in the definition of positionality components such as our race, gender, levels of education, sexuality, age and whether we have children or not. A researcher needs to be aware of positionality and what it means to the process of conducting research. Positionality is important to consider because it impacts upon the type, quality and quantity of data generation as well as influencing the whole research process. Paying attention to positionality acknowledges the role the researcher has in influencing the research process and outcome. I have been a development practitioner for almost two decades, having managed livelihoods projects for the United Nations for almost ten years and having lived and worked in different development settings for 15 years. On a personal level, I am married with children. My professional background may have resulted in a more unequal power relation between the researcher and the participant if the informant felt I was more knowledgeable or more experienced. I tried to put participants at ease by

explaining I did not know much about Nepal and had much to learn from the participants.

Storey refers to legitimacy: "It is crucial to gain legitimacy outside of direct fieldwork in order to be an effective researcher" (1997, 17). The municipal leaders, the ward secretaries and the community members asked me directly or they asked my research assistant what my background was and often times asked if I had a family. My background gave me a level of credibility and legitimacy with the interviewees because I could understand some of the issues they faced in their lives (as a wife and mother) and I could ask more relevant questions. The interviewees appeared to appreciate my background, they were willing to share their views with me and I believe that in a relatively short time (three and half weeks) I was able to collect rich data from a variety of sources. I strived to build a rapport between myself as a researcher and the community informants. Occasionally, before the interviews began, we spoke in an informal manner if time permitted and if the person wanted to converse. Often times, this informal dialogue occurred after I formally concluded the interview and the interviewee was more relaxed. I was conscious of the fact that my thesis would be based on what they decided to communicate to me and the story I would be creating through this thesis (Mansvelt and Bert, 2005).

Lavers (2007) argues that respondents are likely to say what the researcher wants to hear; I did not find this to be the case. I have worked in many different countries and have learnt how to ask questions and to listen carefully in order to ask for clarification and expansion of comments when necessary. The information gathered was triangulated with information from other people in the same community and from other key informants as well as from sources such as reports and statistics where possible. My position as an outsider helped me to engage with both men and women;

men did not have an issue talking with me and women also were willing to share their views with me because of my identity as a woman (Dyck, 1997). Dyck refers to the difference in being a woman as a researcher and as an informant and as being other. Nepali culture is significantly different to mine and I was acutely aware of my differences to the informants. I was aware of my status as a foreigner, my wealth compared to theirs, my level of education, my access to a functioning government and infrastructure, access to healthcare, the higher level of control I had over my everyday life and the relative ease in earning money compared to the informants. My positionality was less apparent and did not pose a barrier when interviewing INGOs and academics because I understood the technical language they were using and could easily relate to the issues they were attempting to address through their professional engagement.

3.3   Research practicalities and logistical arrangements

My research into community resilience was conducted in conjunction with a project of Durham University's Institute for Hazard, Risk and Resilience (IHRR) and the National Society for Earthquake Technology – Nepal (NSET). NSET facilitated the selection of fieldwork communities and access to local gatekeepers. Permission was received to conduct research in the communities from the municipalities and participants have their consent to be interviewed. A research assistant had a valuable role in explaining the purpose of the research, organising the meetings, and serving as my interpreter.

3.3.1   Partners

The IHRR hosts a project titled, "Earthquakes without Frontiers: A Partnership for Increasing Resilience to Seismic Hazard in the Continents" (EwF) that began in July 2012. I was given the opportunity to conduct my fieldwork with advisory support

from this project. EwF provided me with an important element for my research – I was able to narrow the focus of the thesis to local understandings of community resilience to earthquakes and research to disaster risk reduction.

My fieldwork in Nepal was facilitated by one of the EwF Project partners, the National Society for Earthquake Technology - Nepal. The Department of Geography at Durham University and NSET have a long-standing relationship of collaboration. NSET is very well respected in Nepal for their work in earthquake risk reduction efforts and disaster mitigation and their reputation eased access to the communities for my fieldwork. Box 3.1 gives an overview of NSET's activities in earthquake risk reduction awareness and mitigation practices. The issue of interpreting and fieldwork support were addressed with NSET. In exchange for an interpreter and fieldwork support, I agreed to provide a one-hour training program for 25 members of NSET staff on the topic of monitoring and evaluation at the end of my fieldwork. I also committed myself to providing my reflections to NSET on the impact of the earthquake awareness raising projects implemented in the communities I visited. My positionality was shaped by the awareness that I needed to provide reflections for NSET on the work they implement in the communities. I paid particular attention to the discussions with participants when the topic revolved around disaster risk reduction and NSET. At times, the interpreter had to balance her role as an NSET staff member and being my interpreter when people expressed their opinions about additional support they wanted from NGOs.

Box 3.1 Description of NSET

The National Society for Earthquake Technology – Nepal (NSET, 2013) is the leading organisation in Nepal addressing the subject of earthquake risk reduction

awareness and mitigation practices. Their mission statement is "To assist all communities in Nepal to become earthquake-safer by developing and implementing organized approaches to managing and minimizing earthquake risks". To execute this mission, "NSET has developed and implemented several innovative initiatives and processes. NSET plans and programs constitute a broad spectrum ranging from technological innovations and academic as well as policy level interventions to upgrading disaster awareness among school-children, house-wives, and commoner people and promoting capacity building of construction activists at grass-roots level."

NSET was created in 1993 to address two key areas. "First, new approaches were needed for empowering communities with scientific knowledge on disaster risks and risk reduction measures and to help them in implementing the measures by enhancing communities capacities in disaster preparedness. And secondly, it was also necessary to advocate for disaster risk reduction and assist central and local governments to develop and implement appropriate strategies, policies and programs."

3.3.2 Selection of Lalitpur Ward 12 and Kirtipur Ward 9

My expectations for my fieldwork before arrival in Nepal were centred on the premise that it would be conducted in the Kathmandu Valley. I would conduct a comparative study - one of the fieldwork sites would be a rural community that NSET has engaged with concerning Earthquake Resilience and Community Based Disaster Risk Management, the other fieldwork site would be in close geographic proximity to the first project site but would not have had support in Community Based Disaster Risk Management and Resilience. As far as this would be possible, I would strive to select villages that would be broadly comparable in social, cultural and livelihood terms. A

comparative study was envisioned in order to assess how resilience is understood locally, how ideas of resilience vary within the communities, which aspects of resilience can be taught or brought into the community by an external intervention (donor project on disaster risk management), and what types of interventions might successfully produce / increase community resilience.

After consultation with NSET and with the United Nations Nepal Risk Reduction Consortium[1]'s Flagship 4 Community Based Disaster Risk Reduction Coordinator, I decided to change my focus from the rural setting to the urban setting. This was largely due to NSET and Flagship 4's interest in learning more about the interface between the urban setting, resilience and disaster risk reduction mitigation strategies. To date, little research has been conducted in the urban context in Nepal; most research and many development projects have been implemented in rural areas. I was concerned how to define a community in an urban setting and what geographic area I could realistically address during my time in Nepal. After some discussion, NSET and I decided to undertake a comparative study utilising a community that had an intervention in disaster risk reduction awareness and a community that had not had any external support. This would provide a framework to understanding "resilience of what, to what" (Carpenter et al, 2001) with the variable being earthquake / disaster awareness raising program. This led to the final decision to conduct fieldwork in two urban wards of two different municipalities in the Kathmandu Valley.

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[1] The Nepal Risk Reduction Consortium (NRRC) is a government led coordination mechanism that brings partners together to support the government in its effort to strengthen disaster risk reduction and response.

NSET suggested two municipalities - Lalitpur was chosen because there have been many disaster risk reduction awareness raising interventions implemented and Kirtipur was chosen because it was in the Kathmandu Valley (in close proximity to Lalitpur, 10 kilometres away) and there had not been many disaster risk reduction activities implemented. NSET facilitated access to a gatekeeper in each of the communities. This gatekeeper was a differently ranked governmental official in each municipality. The gatekeepers served a crucial role in framing the data that emerged from the fieldwork due to their role in establishing who I would ultimately gain access to interview (Scheyvens et al, 2003a). It took days and multiple visits to the gatekeepers to gain access to the communities. This affected the research by limiting the amount of time I had to conduct the interviews in the two wards, ultimately limiting the number of interviews in each community. The municipalities and wards wanted to know what would be the value for them and their interviewees in participating in the research. See Appendix 1 for an overview of the fieldwork calendar. In each of the two municipalities, one ward was chosen by the municipality as my fieldwork site. The ward is the lowest level of government in a municipality and is comparable administratively to a village development committee. This will be discussed further in Chapter 5, Governing urban community resilience. The other variable (in addition to the exposure to disaster risk reduction interventions) to explore was inward migration. Would a historically long settled "core" ward with minimal inward migration be different in terms of resilience compared to a fluid peri urban setting, where people were not imbedded into the community due to their recent arrival into the community. I was interested to explore how resilience develops over time in a closed community versus how it evolves in a more open, fluid place. What is the role of social capital? What is the nature of resilience in two settlements? Are

there different challenges to building trust and resilience? Is it possible to intervene to build resilience in the same way?

3.3.3   Participant Consent

I prepared and orally communicated my ethical statement to all the participants involved in the fieldwork before the interviews began. This statement can be found in Appendix 2.   I received oral informed consent from all the interviewees (Scheyvens et al, 2003a) and I highlighted the fact that I would give anonymity and utilise pseudonyms (Scheyvens et al, 2003b) for my thesis. I had prepared different questions for the various types of individuals (key informants and individuals) I would interview in the communities. I also had a set of questions for the donors, INGOs and practitioners that I was able to successfully utilise with minimal adjustments (the interview formats can be found in Appendix 2, the Nepali versions can be found in Appendix 3).

3.3.4   Research Assistant

For my two weeks of fieldwork in the two communities, NSET assigned to me an educated, female member of staff (an engineer by training), in her mid-twenties, married, who spoke Nepali, but not Newari (the first language spoken in the two municipalities I conducted my fieldwork). I organised the meetings with the INGOs and other national partners and Jana[2] was responsible for the relationships with the two municipalities and wards. Jana spoke relatively good English and before we started the interviews within the communities, we discussed my research focus, my

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[2] All facilitators and respondents are anonymised and pseudonyms are utilised throughout the thesis.

43

research questions and my revised fieldwork questions. It was important to me that she understood what I was interested in investigating and learning. Jana translated my fieldwork questions into Nepali and her supervisor at NSET reviewed and adjusted the Nepali version. We then discussed the questions and terminology again to ensure consistency in translation. The issue of how far to involve the interpreter is addressed by Temple and Young (2004). In reality, Jana would be an additional set of "eyes and ears" for me and would function as my "cultural broker" (Temple and Young 2004, 171). Jana arranged the meetings in the communities and I asked her opinion on statements where I needed clarification. I asked her for clarification on cultural, social, technical and environmental topics. I was heavily dependent on her ability to get the communities to commit to meeting with me, her willingness to engage with the research project and only by working together would the fieldwork be successful (Turner, 2010). I was aware of her positionality during the fieldwork and how her views and attitudes towards the topics discussed and the participants interviewed would impact the way she interpreted and clarified any concerns that I had during the fieldwork.

3.3.5   Language and Interpretation

Language can be an insight into culture and relationships. Language is one way to begin to appreciate the nuances of another person's view of the world (Geddes, 1989) but it can be a barrier as well to understanding another worldview. Lalitpur Ward 12 and Kirtipur Ward 9 were comprised of Newari Brahmin and Newari Buddhist castes (historical inhabitants of Kathmandu Valley) that spoke Nepali as a second language. During the fieldwork in the two wards, the Newari people spoke Newari to each other and Nepali to others. At some meetings, three languages were spoken - English, Nepali and Newari. The format that I used in the interviews consisted of me posing

the question in English, Jana interpreted the question into Nepali and after the interviewee responded a few sentences at a time, Jana interpreted the answer back into English. I was acutely aware of possibilities for misinterpretation that can lead to inappropriate or invalid data (Leslie and Storey, 2003) and asked for clarification or asked the question in a slightly different manner if I was unclear of what I had heard in English. Often, the interviewees wanted to speak in English to highlight their ability to communicate in my language. They were trying to make it easier for me by not having to utilise an interpreter but this was a challenge when their English was not to a level that I could fully understand. When this situation occurred, I asked Jana to repeat some of the questions in Nepali and then she reported back to me in English the response. This was a method to verify what I thought I had heard and documented.

3.4   Methods Chosen

After my research questions were formulated, a selection of methodologies to explore these questions in detail were identified. Better quality qualitative research can be generated by the use of multiple research methods (Robson, 2011; Brockington and Sullivan, 2003; Storey, 1997). I found that I could triangulate findings between the different research methods (Mason, 1996) and this was useful to give substance and credibility to my findings. Table 3.1 provides an overview of the research questions, methods chosen to explore the questions and type of information gleaned from each method to answer the question.

Table 3.1 Choice of research methods

Research Question	Type of method	Information provided to answer research question
1. What does the concept of	Semi	Semi-structured interviews were a

Research Question	Type of method	Information provided to answer research question
resilience, or its closest equivalent, mean to stakeholders of a Nepali community?	structured interview	valuable tool to understand the context of daily lives, issues that concern people, views on government and changes in the past 10 years, disaster risk reduction efforts and awareness about earthquakes.
	Focus group	Women's groups and a youth group discussed their daily lives, disaster risk reduction efforts, and whom they rely on in difficult times.
	Fieldwork diary	The fieldwork diary detailed my impressions of the interviews and any questions that arose after the interview. This was valuable in the analysis and writing up stage of the thesis.
	Observation and walks	Observing the communities in daily life, watching people in their daily interactions and walking in the communities to understand how physical space was utilised was important to understanding how

Research Question	Type of method	Information provided to answer research question
		resilience is contextualised.
	Other methods such as photographs, locally found books	Locally sourced books in English and English language newspapers gave insight into society and culture. Current events were put into context and created a background image for the fieldwork. Photographs were valuable for the analysis and writing up stage to refresh my memory.
	Secondary data analysis	Information about the municipalities and wards was useful in defining what is a community and who lives in the ward.
2. What, in local terms, are the characteristics or components of resilience?	Semi structured interview	The semi-structured interviews allowed the interviewees to answer questions about social capital and who the interviewee relies on in difficult times and then the conversation was able to encompass topics that were relevant to the interviewee and that provided additional insight to the research

Research Question	Type of method	Information provided to answer research question
		questions.
	Focus group	Women's groups and a youth group discussed what was important to them and what they would like to see changed in their communities.
	Fieldwork diary	The fieldwork diary detailed my impressions of the interviews and any questions that arose after the interview. This was valuable in the analysis and writing up stage of the thesis.

3. How do local, academic and practitioner understandings of resilience vary?
 	
    a. How is resilience produced and enhanced in local contexts?
 	
    b. Can resilience also be enhanced or supported through
	Semi structured interview	Semi-structured interviews with INGOs, national NGO, a university and practitioners gave detailed answers to these questions. The semi-structured interviews were valuable to start the discussion and to continue on topics that became relevant during the course of the interview.

Research Question	Type of method	Information provided to answer research question
external intervention? c. What forms might this support or intervention take?		
	Fieldwork diary	The fieldwork diary detailed my impressions of the interviews and any questions that arose after the interview. This was valuable in the analysis and writing up stage of the thesis.
	Secondary data analysis	Reports received from the INGOs, NGOs and practitioners were valuable in understanding their work and issues they are facing.

3.4.1 Semi structured interviews

I found semi structured interviews to be useful and insightful in my fieldwork. These enabled me to have flexibility to explore topics in depth (Crang and Cook, 2007). Semi structured interviews have the following format: the researcher has a topic(s) to focus on, there are a limited number of questions prepared and then follow-up

questions are raised based on the discussion (Rubin and Rubin, 2012). Crang and Cook (2007) propose the researcher needs to be prepared and to pilot test questions. I pilot tested the questions with a key informant in Lalitpur Ward 12 and found it to be useful in understanding how certain words were utilised, how the questions were interpreted and the format of the answers. It was interesting to learn which questions were easy to understand by the informant, which questions needed to be adjusted and which questions had emotive responses.

For the key informants of the two communities (e.g. Municipal officials, members of the Lalitpur Ward 12 Disaster Management Committee, business community representatives, a teacher, NGO worker) the key informant questions were utilised as part of the semi structured interviews. I attempted to be cognisant of the power relations between the researcher and the interviewees (Hay, 2005). Due to the power relations at play, I was aware that they did not know how I would interpret their answers and I did not know to what extent they would be honest with their answers. I attempted to put the interviewees at ease with my body language, I focused on how the questions were posed and I tried not to misinterpret comments from interviewees by asking Jana additional questions after the interview was completed. Several of the community interviewees wanted to view the questions before I began. Due to ethical considerations (Mason 1996), I agreed to show them each time. All interviewees looked at ease during the interviews and willingly engaged in conversation with me. Some had questions for me concerning American disaster mitigation practices (the role of insurance and government incentives to build disaster resistant structures) and also the situation of women in the UK and in the USA.

For individuals (e.g. housewife, student) from the community, I initially utilised a separate group of questions designed especially for them in order to understand their

views on social capita, livelihoods and earthquakes. After pilot testing these questions with a woman in Kirtipur and subsequently in Lalitpur, I found that some of my social capital / resilience questions regarding challenges, how the individual overcame them and how long it takes to recover from challenging situations were culturally inappropriate. People do not feel comfortable answering the questions or they asked why they had to answer the questions. Considering ethical considerations and - 'do not harm', (Babbie, 2013; Kellehear, 1989), I stopped asking the questions. Subsequently, I used a combination of the key informants questions, the livelihood and other social capital questions and additionally some questions about earthquakes and disaster awareness questions. When I conducted debriefings with various international researchers with experience in Nepal, they were surprised about my problem with the social capital questions. All had conducted research primarily in rural areas and stated that they had no such problems. My research assistant confirmed to two of the researchers that this problem occurred during the fieldwork and she was unsure what had been the cause. I am unsure if this was an issue of urban setting being different from the rural context, if the Newari Buddhist and Hindu castes did not find the questions appropriate or if the Nepali fatalistic attitude (Bista, 1991) was part of the issue (if you talk about bad topics, they will come to fruition).

I accumulated more information than originally envisioned. I did not ask all the interviewees all of the questions if time did not permit or if they were not very knowledgeable on a specific question (e.g. earthquakes). I formally interviewed 41 individuals in 38 meetings. Table 3.2 lists the breakdown of the 41 interviewees. Thirty-one of the 38 formal interviews were audiotaped; during the remaining seven interviews, I took notes during the meeting and subsequently filled in any gaps in note taking. In some settings, it was not feasible to audiotape. Additionally, I had three

informal conversations with donors and one informal conversation with an international organisation that specialises on earthquake preparedness in numerous countries. I also had several informal conversations with taxi drivers and hotel staff about earthquakes and disaster risk reduction awareness. Table 3.3 lists the breakdown of the 30 interviewees in the two communities.

Table 3.2 Breakdown of the 41 interviewees

Interviewee	Number
INGOs	6
NGOs	4
University	1
Lalitpur	16
Kirtipur	14

Table 3.3 Breakdown of the 30 interviewees in the two communities

Interviewee	Number
Women's groups	4
Youth groups	2
Municipality officials	7
Disaster management committee ward level	3
Ward secretary (government position)	2
Businessmen	3

Teacher	1
Folk singer	1
Inward migrants	3
NGO worker	1
1934 earthquake survivor	1
Elder	1
Housewife	1

3.4.2 Focus groups

Crang and Cook argue that focus groups highlight "contradictory and competing views that individuals and groups hold" (2007, 90). Focus groups are important because they allow the researcher to understand how people work out their thoughts and feelings about certain matters in social contexts (Crang and Cook, 2007; Bedford and Burger, 2001) and also insight can be gained into cultural, social, political, economic and personal dimensions of a particular issue in a way that semi-structured interviews do not allow for (Bedford and Burger, 2001). I conducted two focus groups with women's groups and one youth group because they had been involved in disaster risk reduction activities. The focus groups were held in the same location as most of the community interviews in Lalitpur Ward 12, they were audiotaped and Jana provided the interpreting services. The focus groups were informative; I learnt how the organisations function and the increasing roles that the public sector would like the groups to fulfill (this is discussed further in Chapter 4 - in the context of disaster resilience). Stewart and Shamdasani (1990) highlight the value of focus groups in exploring a topic where there is little known about it. This was the case

with the women's groups, where tremendous insight into the role of women in society and how the groups empower women and gave them increased visibility in new initiatives such as disaster risk reduction was learnt. It was not easy to get people's time but I found focus groups (Bedford and Burger, 2001) a useful complementary tool to the semi-structured interviews. Within focus groups, there are power dynamics not only with the researcher and the participants but also within the group, often with one participant dominating the discussion. I did not find significant differences in the amount of time different participants spoke. They highlighted different issues but all participants were engaged. Figure 3.1 is a photograph of representatives of women's groups that I interviewed in focus groups. Originally, I had envisioned conducting focus group discussions with teachers as well but unfortunately they were not available due to school holidays. I had also wanted to meet with representatives of different political groups but given the length of time needed to arrange interviews with community members in general, it was not surprising that I did not have any focus group discussions with local politicians.

Figure 3.1 Women's Groups Representatives

3.4.3   Fieldwork diary

A reflective electronic field diary was utilised throughout the fieldwork. This was an essential tool for the fieldwork. My efforts to be reflexive and my positionality were documented. It highlighted my evolving knowledge, thoughts, emotions and opinions (Storey, 1997). My understandings and misunderstandings of people were documented in the field diary. Descriptions of the physical and emotional space were important. This diary was useful when the analysis of the data began. Field notes were also taken during and after the interviews. Although this was time intensive while in Nepal, these notes were important when transcribing and analysing the data produced because I was able to recall information and insights that I had forgotten.

3.4.4   Other methods

I walked large distances in both municipalities and in particular in the wards where I conducted my interviews. I took transect walks with a key informant from each ward in order to quickly gain knowledge of the sites (including where the schools, hospitals,

shops, temples, bus stations and open areas were located). These transect walks provided essential background information regarding natural hazards, building codes enforcement, new construction patterns and understanding the context for everyday living.

Additionally, the use of photographs, documents, English language books found locally alongside other methods of data generation (Mason, 1996) were useful to contextualise the fieldwork. I took photographs of both field sites in an attempt to document the surroundings. Attempts were made during the fieldwork to take photographs that represented regularly occurring images or scenes in the communities. Crang and Cook propose that photographs taken 'in the field' (2007, 106) can usefully complement the writing of field notes and highlight to the reader what became normal because the researcher became desensitised to the surroundings during fieldwork. Upon my return from the fieldwork, I noticed aspects of everyday life in the photographs that I did not consciously acknowledge while I was in Nepal. These methods also provide an alternative to the information received orally in semi structured interviews and focus group discussion.

Storey (1997, 10) refers to the culture shock we can experience and how "yet another obstacle to research in chaotic Third World megacities is the process of discovering, gaining access to, or even being aware of, valuable resources." I found locally published books in English on Kathmandu Valley, culture, politics and folklore only after I had been in Nepal for a few weeks. English language newspaper articles were a valuable insight into the culture and current debates on government and disaster risk reduction efforts. These resources have been invaluable as background reading.

3.5   Ethical Considerations

My fieldwork and the study were conducted in accordance with the ethical principles set out by the Graduate Committee of the Geography Department, Durham University. I did not hide my identity and I did not make inappropriate promises to the interviewees. I strived to be aware of my reflexivity and the role I played as a researcher as well as the research process as noted by England (1994). Following England's suggestion, I attempted to utilise "a more reflexive and flexible approach to fieldwork [that allowed me] to be more open to any challenges to [my] theoretical position that fieldwork almost inevitably raises," (1994, 81). I briefed interviewees about the scope of the project before interviewing and their right to participate or withdraw at any time.

I was aware of the power relations in the research encounter (Dowling, 2005) and attempted to ensure the interviewees remained in control of the processes. I attempted to be cognisant of the specific conditions in which the interviews took place and I strived to undertake all measures necessary to make the interviewees feel comfortable with participating in the research including conducting the interviews in their communities, conducting the interviews in a physical space that is familiar to them and also having the gatekeeper physically near by during the interview. We sat in chairs near each other and did not have a desk between us to minimise aspects of power relations. I obtained informed oral consent from all the interviewees. All respondents remain anonymous and I have not identified interviewees without their consent. I made all attempts necessary to ensure that the format for the fieldwork was rigorous. I attempted to avoid bias and strived to acknowledge for whom the respondent was speaking. I paid close attention to the spatial, political and cultural setting from which the knowledge emerged. In terms of utilising data, I attempt to be

sensitive about generalising my findings. I am also cognisant of what my research findings can allow me to say about people, places and processes outside of my sample.

3.5.1   Challenges

There were many challenges to the fieldwork - the change in focus from the rural to the urban setting, repeated meetings with municipal leaders and gate keepers in order to gain access to the communities and lastly, the delay in interviewing community members in both wards. When I despaired that I would not be able to interview a significant number of community representatives, the words of one of my supervisors came to fruition. "It all comes together in the end, this is Nepal" (Dr. Katie Oven, personal conversation, January 22, 2013). I was able to conduct my interviews in quick succession in the last days of the final week of my fieldwork. Both wards followed the same pattern. In Lalitpur Ward 12, the Ward Secretary brought me to a school (quiet due to school holidays) in the ward and I was seated in the head teacher's office. The social activist brought interviewees to me for interview and I conducted ten interviews in one day. This was not the format I would have chosen but this was the format the community gatekeepers were offering and the fieldwork required compromise. In reality, the Ward Secretary and the social activist chose whom I would interview. They had influence on the data I collected. In Kirtipur Ward 9, Jana and I arrived at the Ward Secretary's office, uncertain if I had any interviews lined up. I was offered a chair and interviewees were brought to me by the NGO worker, one after the other. I interviewed seven individuals in one day. In Kirtipur, the Ward Secretary and the NGO worker served as local gatekeepers by influencing whom I would interview and the data I gathered. This influenced the type of data I was able to collect, the gatekeepers influenced who received the opportunity to vocalize their opinions and what they spoke about.

3.5.2   Data collection and analysis

Most interviews were tape-recorded once the interviewee agreed to be recorded. However, the informal interviews with high-level interviewees from the donor community were not recorded because I did not feel they would be forthcoming with their opinions if they were recorded. It was more valuable for me to hear their uncensored views than to have a tape-recorded formal interview. Tape-recording helped to maintain the integrity of the data collection. In the event that an interview could not be tape-recorded, efforts were made to take detailed notes during and subsequent to the interviewing session. I have also incorporated knowledge gained from informal conversations that I had with other people in the communities (taxi drivers, tourist guides, hotel staff). I transcribed all of the key informant and INGO interviews.   These transcripts are a synthesis of the interview-notes and audio recordings. I reviewed the notes of all the interviewees conducted. Transcripts were coded, categorised, and analysed through the use of an inductive technique (Crang, 2005); the 'codes come out of the data' (Glaser and Strauss, 1967). Subsequently, analysis was conducted after a small period of time was taken to distance myself from the "research setting and from the issues and people in it" (Muetzelfeldt 1989, 53).

3.5.3   Dissemination of thesis findings

I agreed the following format for dissemination of knowledge gained during the fieldwork and the thesis with the National Society for Earthquake Technology – Nepal.   A short report will be disseminated in Nepal through NSET to the two communities where the research was conducted and to all the donors and practitioners who participated in interviews. The two communities are keen to learn from the research findings how to improve their disaster risk reduction efforts and also to learn from each other and this report will serve this purpose. A workshop will also be

organised in November 2013 in Kathmandu under the auspices of the NRRC –
Flagship 4 during which a presentation will be made based on the findings of this
thesis. I will participate via video link from Durham University or in person.   I
believe this will be an effective way to communicate the findings to the communities,
INGOs, and donors. Photographs taken of the interviewees and of NSET activities
during the fieldwork in January have been given to NSET to distribute in March 2013
(via a researcher traveling to Nepal) per my agreement with the community
interviewees and NSET.

3.6   Summary

After the research questions were formulated, the research methodology was chosen
to best elicit findings that would inform the research questions. The methods chosen
were appropriate for qualitative research and were appropriate culturally. A mixed
methods approach (semi structured interviews, focus groups, fieldwork diary,
observation and transect walks, taking photographs, sourcing locally published books
in English, and accessing other secondary data analysis in the form of statistics and
reports) was chosen in order to triangulate the findings and this proved to be
appropriate in the Nepali context where the culture is different from my own. In this
chapter, I explained my epistemological position, I reflected on my positionality and
how it impacted upon my research.   I described the methods chosen and linked them
to the research questions as well as describing the methods in detail during the
fieldwork implementation. I concluded the chapter focusing on ethical issues that
emerged from the fieldwork process. Research is a process in which events and
characters shape the process and influence the outcome. During the fieldwork, I felt
at times not in control of the process and uncertain as to the outcome of the fieldwork.
Changing the focus of the research from rural to urban and then understanding how

powerful the gatekeepers were in the communities was a surprise. The gatekeepers decided who would speak to me and ultimately the quality of the data I gathered. I attempted to respond to the environment in the best way I could and claim ownership over this output. The following chapter gives an overview of Nepal and the fieldwork communities, community members' views of their communities and the government as well as a definition of the concept of resilience from different stakeholders.

Chapter 4 Nepal in the context of disaster resilience

"Whose reality counts? The reality of the few in centres of power? Or the reality of the many poor at the periphery? " - Robert Chambers (1995, 175).

4.1 Introduction

This chapter provides a description of Nepal in terms of its development gains, the economic and disaster context as well as a description of the two urban communities where the fieldwork took place. Informants' views on recent changes in society are described and their views on disaster risk reduction activities are discussed within the context of municipalities and the urban setting. The chapter concludes with the concept of resilience defined by earthquake experts, INGOs and donors and finally, the particular ways the word resilience is being utilised in Nepali. This chapter addresses the following research questions: 'How is the concept of resilience understood by community members at the local level; and what, in local terms, are the characteristics or components of resilience' as well as 'How do local, academic and practitioner understandings of resilience vary?'.

4.2 Description of Nepal

Nepal is a landlocked country bordering China to the north and India to the south, west and east. Nepal has a population of over 26 million people according to the most recent census of 2011 (Government of Nepal, National Planning Commission, 2012) although the World Bank states the population is 30 million (World Bank, 2013a). During my fieldwork, the interviewees referred to a population of 30 million. Over 80 percent of Nepal is mountainous or hilly while the remaining 20 percent is in low-lying fertile Terai. The past 60 years have introduced significant changes to this former kingdom. For example, in 1950, Nepal had few roads, now over 17,000 km

of road length exist (World Bank, 2013b). Since the introduction of democracy in 1990, Nepal has had 20 governments. The 10-year Maoist insurrection ended in 2006 and a Maoist-dominated government took control in August 2007. Long-term political instability has reigned and the country is struggling to overcome the legacy of the conflict. The politicians continue to disagree on a new constitution and argue about the restructuring that was to lead Nepal into a federal state. The World Bank states that Nepal's economic growth continues to be adversely affected by the political uncertainty (World Bank, 2013a).

4.2.1 Development Gains

In 2012, Nepal had a human development index ranking of 157 (out of a total of 187 countries); this ranking has stayed constant for the past six years. In comparison, China is ranked 101, India is 134, and Pakistan is 146 (UNDP, 2013). In some aspects, Nepal has made significant development gains for its people; Nepal is viewed as a success story in terms of MDGs by the United Nations. According to the Millennium Development Goals Needs Assessment Report for Nepal 2010, (Government of Nepal, National Planning Commission and the UNDP, 2011) despite the decade–long conflict and political instability, progress has been significant in a number of areas. For example, the percentage of people living below the national poverty line has declined from 42 percent in 1996 to 25 percent in 2010 (Ibid). Net primary school enrolment rate has increased to 93.7 percent from 81 percent in 2002, gender parity has been achieved in enrolment for primary education and under five mortality has reduced to 50 per 1000 live births (Ibid). In comparison, the figure for under five mortality in India was 64 per 1000 live births in 2009 (Gandhi et al, 2011). The MDGs such as education and mortality highlight the gains Nepal has made for its

population although this has not been fairly distributed from the geographical dimension and income inequality is increasing as well.

4.2.2 Economic Situation

Along with agriculture, which contributes 30 percent of GDP, remittance and the service sector have emerged as major contributors to GDP. Remittances are estimated to be equivalent to 25-30 percent of GDP (World Bank, 2013a). Remittances are one of the factors behind Nepal's remarkable success in human development in the last 40 years and have contributed significantly to the reduction of poverty since 1995 (UNDP, 2010). The Nepali households receiving remittance has increased from 23 percent in 1995 – 1996 to 56 percent of all households in 2010 – 2011 (Government of Nepal, 2011). Of the households receiving remittances, remittances comprise 31% of the household's income (Government of Nepal, 2011). Daily consumption utilises 79 percent of total remittances received by households. The sources of remittances are broken down as follows: 20 percent from within Nepal, 11 percent from migrants working in India and 69 percent from other countries - primarily Malaysia, Saudi Arabia and Qatar (Government of Nepal, 2011).

4.2.3 Urbanisation

Nepal is largely a rural country, with only 17% of the population living in urban areas, but it is urbanising rapidly (IFAD, 2013) with urban population growth rates of up to 7% (World Bank, 2013c). There are 2.5 million people living in the Kathmandu Valley, it is the first region in Nepal to face the unprecedented challenges of rapid urbanisation and modernisation at a metropolitan scale, and is also one of the fastest growing metropolitan areas in South Asia. Thieme and Wyss (2005) suggest that remittances are primarily from male migrants who live abroad; these remittances are

then utilised by women and their children to move to urban settings for better educational opportunities according to informal information received from a donor.

The World Bank (2013c) proposes that the sustainability of urbanisation in Nepal is threatened by a lack of effective planning and large and growing infrastructure deficits (including electricity and water). Expenditures are biased against Kathmandu and the largest cities, where infrastructure needs are the greatest (Ibid). Managing rapid urbanisation poses challenges that require urgent policy attention. It has increased vulnerability to disasters, making Kathmandu one of the most earthquake-vulnerable cities in the world (World Bank, 2013a; UNDP, 2004). Nepal needs to prioritise the "where, what, and how" of public investments based on development outcomes, promote the development and regeneration of the Kathmandu Valley, and enhance the competitiveness of strategic clusters – such as cultural tourism, handicrafts, and agro-processing – to foster sustainable growth and create economic opportunities in urban areas, according to Elisa Muzzini, Senior Economist in the South Asia Urban and Water Unit (World Bank, 2013c).

4.2.4   Disaster risk in Nepal

Nepal has significant exposure to disaster risk and has had several natural disasters in the last two centuries including earthquakes, floods, and frequent landslides especially during monsoon season (Government of Nepal, Ministry of Home Affairs, 2011). In 1833, two major earthquakes were experienced in the Kathmandu Valley. The towns of Thimi and Bhaktapur were damaged (housing, road network and temples). In 1834, four major earthquakes were felt in the months of June and July. In 1934, the Great Nepal Bihar Earthquake struck the kingdom of Nepal and Bihar, India around 2 pm on the 16th of January. The magnitude of the earthquake was 8.4 on the Richter scale; 2,244 people died in Lalitpur. In the recent past, on September 18, 2011, an

earthquake measuring 6.8 on the Richter scale struck Nepal's Eastern Region, as well as the capital Kathmandu, in the Central Region. This resulted in damage to houses, buildings and schools in 13 districts.

The combination of the multiple hazards "poses a severe threat to national development processes" (ADPC et al 2011, xii). As mentioned in Chapter 1, Nepal is ranked 11th in the world in terms of vulnerability to earthquakes (UNDP, 2004). Figure 4.1 shows the level of natural hazard risk for Nepal. If a 7.0 magnitude earthquake hit Kathmandu Valley, it would kill an estimated 40,000 people, severely injure 100,000 and displace 1 million people (Government of Nepal, Ministry of Home Affairs, 2011). The disaster would also damage 60 percent of homes beyond repair, seriously damage 95% of water pipes (Ibid). An IRIN report (Knight, 2013) offers projections for an earthquake of nine magnitude (Mercalli scale measure) that include the final death toll of 380,000 people, 2 million people displaced, and 80% of buildings damaged or destroyed. In all scenarios, the recovery and reconstruction periods would be very difficult.
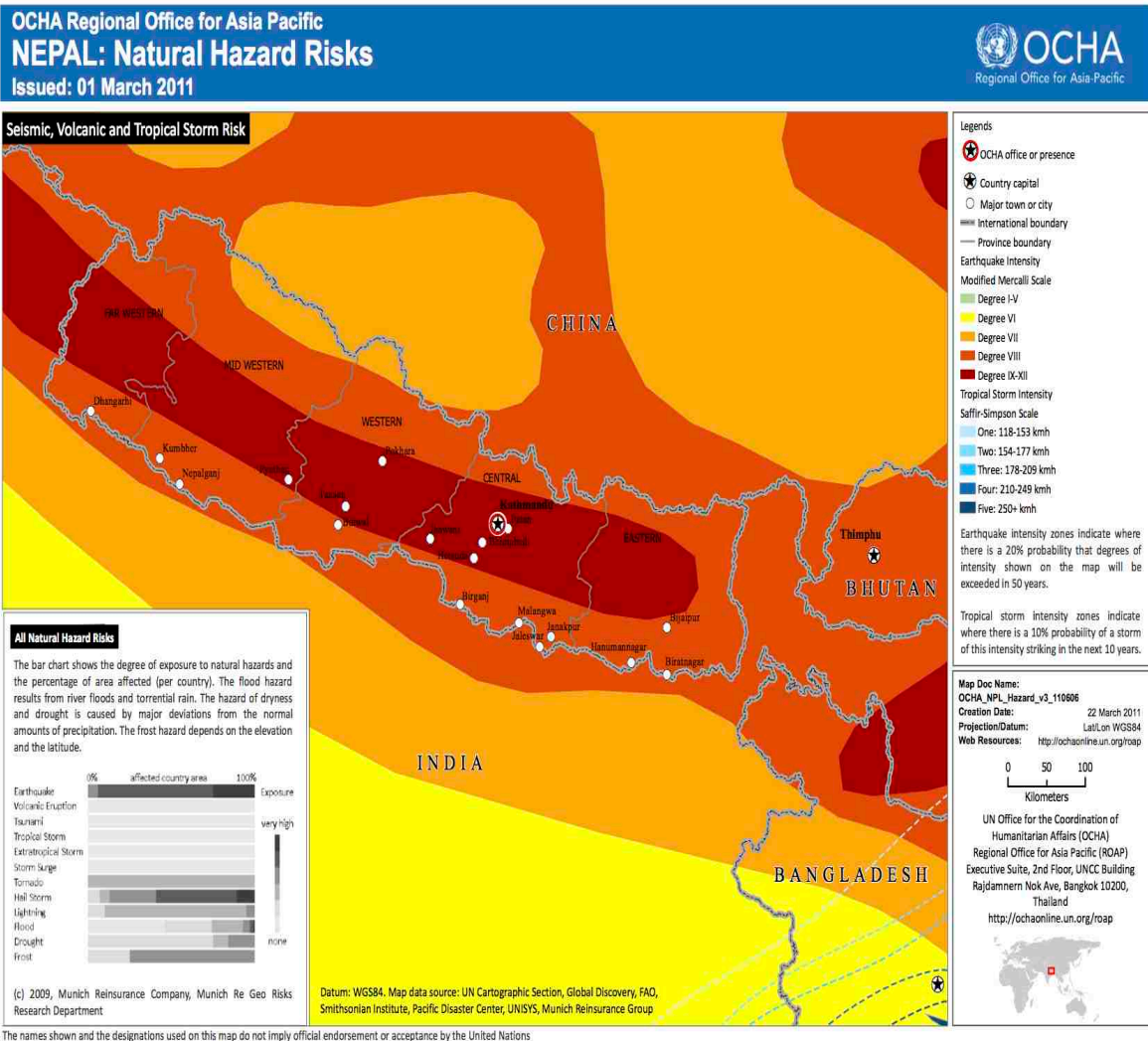
Figure 4.1 Map of Nepal: Natural Hazard Risks (Source: United Nations Office for the Coordination of Humanitarian Affairs, Regional Office for Asia Pacific, 2011).

4.3   Lalitpur

Lalitpur is the oldest city in the Kathmandu Valley and is also known as the "City of Fine Arts" (Amatya, 2011).   Based on an inscription of the Manga Hiti (water spouts), Lalitpur (also known as Patan) dates to 570 A.D. (Joshi, 2003).   The native inhabitants of the city, the Newars, called it "Yela", a historical name derived from the word "Yupagram" which means a village having a victory pole (Joshi, 2003). Most of the World Heritage sites in Patan Durbar Square are from the 16th century and onwards.   Lalitpur is one of the most important and largest cities in the Kathmandu Valley (the others are Kathmandu and Bhaktapur).   There are many types

of buildings here including monasteries, temples, traditional Newari houses, and the old royal palace. The district of Lalitpur has 41 Village Development Councils and a population of 467,000 according to the 2011 census. The Sub-Municipality of Lalitpur (second largest city in Nepal after Kathmandu) has 22 wards. Figure 4.2 is a map of Lalitpur Sub-Metropolitan City and Lalitpur Ward 12 where the fieldwork was carried out.

LALITPUR SUB-METROPOLITAN CITY
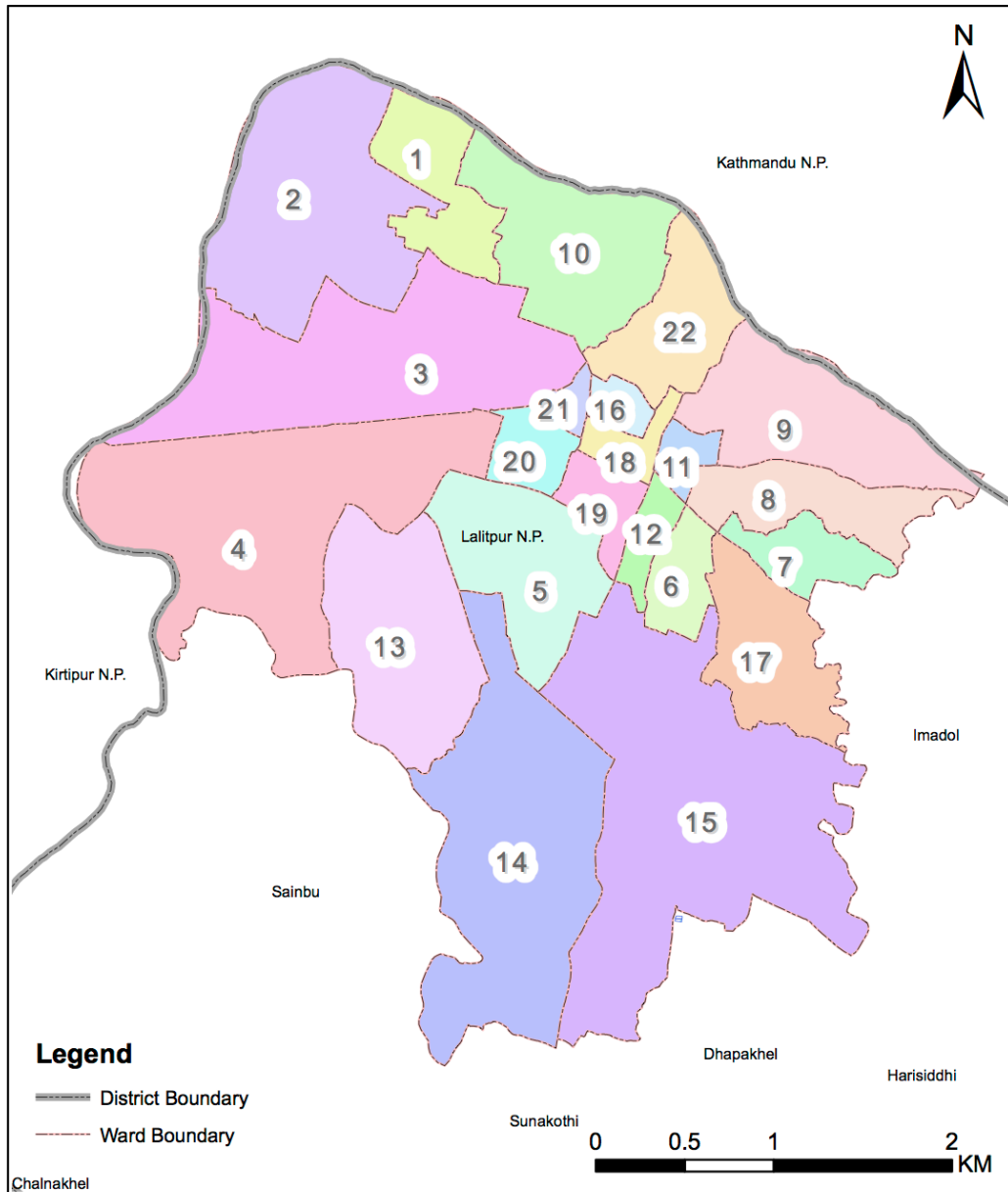
Figure 4.2 Map of Lalitpur Sub-Metropolitan City and Lalitpur Ward 12

The Lalitpur Sub-Metropolitan City website (Lalitpur Sub-Metropolitan City, 2013) expresses local views on earthquake preparedness:

> "The deep faith in religious practice has psychological impact on common people of the [Kathmandu] valley... Nepal is believed to be dwelled by 330 Million different Gods and Goddesses… Obviously, we cannot just sit down and pray for god to avoid such terrible disaster like earthquake. We have to take measures to minimize the risk of such incidents… and identifying the

areas to be taken seriously by various stakeholders of the society in case of an earthquake. There are many areas we have to initiate on community level in cities like Lalitpur for minimizing public lives and property in case of earthquake. Since Lalitpur Sub-Metropolitan City, over the years, has developed a strong community groups inside the core area, the more vulnerable part of the city, an effective campaign on minimizing risk from earthquake can be run with support from experts in this field and organization like Nepal Society for Earthquake Technology."

This statement highlights the relationship between religious beliefs, the increasing awareness of earthquake risk by the government and by society, the active role people can play in addressing earthquake risk and minimizing risk, as well as the acknowledged role of communities and social groups on a local level in awareness campaigns. The Municipality is trying to balance its social and cultural framework in relation to taking proactive approach to earthquake mitigation, preparation and response.

4.3.1 Description of Lalitpur Ward 12

Lalitpur Ward 12, also known as Gabuhal, is a mixed residential and commercial area. It borders Ward 11 containing the former royal palace and the UNESCO World Heritage sites and is also bordered by Ward 19 to the West, Ward 6 to the East and Ward 15 to the South. Ward 12 is divided further into 19-20 toles (neighbourhoods). The Lalitpur Sub-Metropolitan City considers Lalitpur Ward 12 as a 'core area', one of the oldest parts of Lalitpur Sub-Metropolitan City. Ward 12's congested shopping streets, full of pedestrians and motorcyclists, act as boundaries with the adjoining wards. The housing areas are located in the interior of the ward. Figure 4.3 is a photograph of an entrance into one of the neighbourhoods. The narrow houses are made out of brick, or a combination of cement and mortar. In the event of an earthquake, the narrow streets and alleys would be vulnerable to being blocked by debris from damaged buildings.
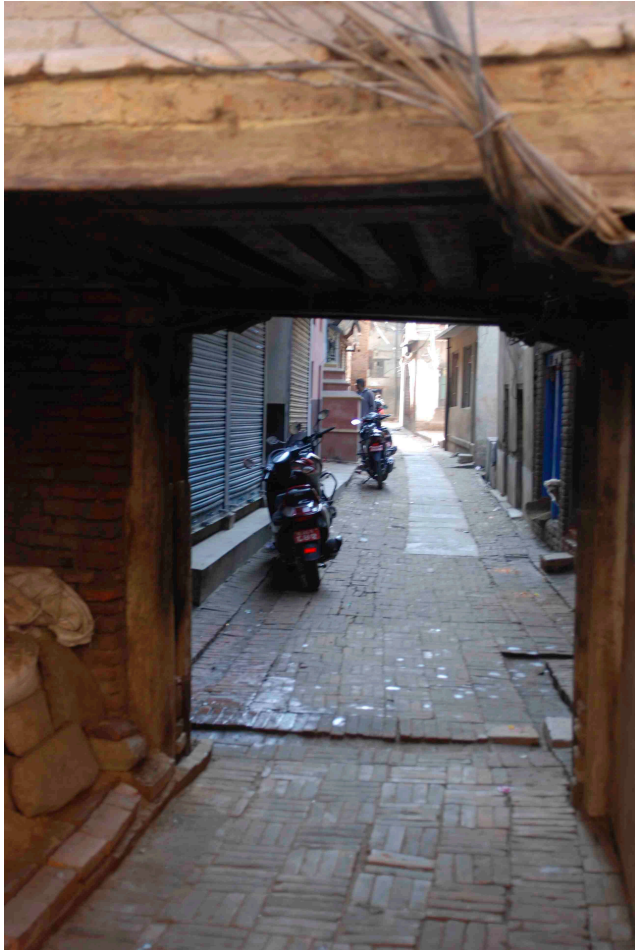
Figure 4.3 Typical neighbourhood entrance in Lalitpur Ward 12

The Secretary of the Ward (lowest government level representative of the central government, non-elected) stated that there are 1,129 households in Ward 12. According to the 2001 census, six thousand people lived in the ward who were registered to vote (he did not have the information from the most recent 2011 census on this detailed level). It is difficult to get a breakdown on the number of renters in the ward from the Ward Secretary; he states the information is not compiled:

> "There is migration from all over Nepal into Lalitpur [Sub Municipality]. There have been drastic changes in the past ten years. Ward 12 is a 'core area', no inward migration here. Renters are vulnerable and fragile though."
>
> *Lalitpur Ward 12 government official, male, age 65*

There is little migration into the ward but some outward migration of affluent people who move for the "cleaner air and water in Kathmandu Valley" according to the Ward Secretary. This type of outward migration is noted as well in the UNDP 2004 Reducing Disaster Risk Report. Ward 12 is affluent, homogeneous and crowded, 95 percent of the inhabitants of Ward 12 are Newari Buddhists and Newari Hindus. There are seven groups within the Newari caste. Interviewees proudly stated that their families have lived in Ward 12 for generations. Retail and trade in general are the main sources of income and there is no manufacturing base except for the handicrafts. The primary source of income is from handicrafts production (bronze and copper) and the selling of these goods. The municipality provides handicrafts training programmes to young people to preserve the cultural heritage and skills.

Access to water from the municipal water supply is limited to two – three hours per week. Most people have access to underground water through private wells that are located in the inner courtyard, they access water from public taps or they purchase water from private tankers that come to the Ward. Electricity is limited to 12 hours a day, on a rotating schedule that is published by the government. The "load shedding" is an issue for most people and businesses, few have their own generators for electricity. Most households have mobile telephones and about 50 percent have Internet. One interviewee mentions that they own a washing machine but it is useless since there is neither water available nor electricity to power it. Schools are accessible to all children and in Lalitpur Ward 12 there is one government school where the labourers' children attend, two primary private schools, three higher education private schools and one school for the handicapped. Students are not required to attend school in their ward, parents strive to put their children into the best school they can afford. Education appears to be a priority for parents. The media is

viewed in a positive light by several interviewees, "The media has brought very positive changes, they create awareness" in a variety of topics (including earthquake preparedness) according to a Lalitpur government official.

The government officials are well versed in development issues and there is a strong INGO and NGO presence in Lalitpur Sub-Metropolitan City and Ward 12. Lalitpur Sub-Metropolitan City is known throughout the country and in the donor community for its pioneering role in striving to implement the National Building Code since 2003 (Government of Nepal, Ministry of Home Affairs, 2011) and the necessity to build earthquake resistant buildings. New construction in the Sub-Municipality has been decreasing over the past four years due to the deteriorating economic situation. In 2010, 1,200 new buildings were built which needed approval from the Municipality, "most" are earthquake resistant according to an interview with a representative of the Earthquake Safety Section of the Sub-Municipality. In 2012, 850 were built and the lower projection for 2013 is 800 new buildings.

4.3.2   Informants' views on infrastructure and government

Key informants respond to questions regarding what types of changes have occurred in Ward 12 during the past ten years (social, economic, migration, education, health). The most common response is the deteriorating state of infrastructure:

> "Ten years ago, there were no issues with the infrastructure. People had access to water and electricity. The traffic was not severe...The situation is worse now in terms of infrastructure. Day to day life is getting harder."
>
> *Lalitpur Ward 12 DMC member, female*

A representative of the youth group highlights several "wishes" for his Ward:

> "Clean environment, proper drinking water, the rubbish to be cleaned up and lastly, for the electrical wires to be better."

Youth group member, male, age 17

"Over the past ten years, the infrastructure has been improved. Sewage treatment is better."

Lalitpur senior government official, age 60

The last respondent highlights sewage treatment, a responsibility of the municipality and an issue they have strived to address. The interviewee highlights this as a good practice of the municipality providing a service for its residents. The situation regarding water and electricity is severe. Access to water is limited, the affluent can purchase water from tankers, in some neighbourhoods *(toles)* families have communal wells in their courtyards and the remainder of the residents queue at public water facilities. Queuing is primarily the responsibility of women and children. The electricity situation impacts and restricts everyday living and the capacity to earn a livelihood because the electricity is available different hours each day. At times, the electricity is planned to be available and suddenly it is shut off. At the present time, people have no control over access to basic infrastructure but have developed coping strategies; they are resilient in their everyday living.

Attitudes and expectations towards the government have changed. Ten years ago, people's attitudes towards the role of government were different; one interviewee explains it in this manner:

"What government did was God [not to be questioned by people]. People now question the role of the government. What is government? Cannot trust it. Who is controlling it? The local government should be responsible to its people. There should be 'needs based development' as the foundation for local government…. The ward level and the municipal level are beginning to listen to us now."

Lalitpur Ward 12 DMC member, female

She argues further that the local government should identify their needs, prioritise them and then ask for support from the central government, NGOs and INGOs. Lower level public sector officials support her views. They comment on the necessity for public sector officials to be elected rather than appointed by the central government.

> "Municipal officials would be more responsive if they were elected."

> *Lalitpur Ward 12 government official, male, age 65*

Interviewees comment on the political situation in this way, "There are political problems in the ward" according to various levels of government officials.

> "There is no political stability. Economic growth is not at the expected level. The economy has stalled."

> *Lalitpur government official, age 40*

Two individuals (one formal interview and the other, an informal conversation with a donor) speak of "waiting for an event to occur". They both declare an event "trigger" (e.g. large-scale fire, epidemic) in the future will result in a revolt against the government. Interviewees are dissatisfied with the infrastructure and they want a government that listens to their needs and acts on them. In their views, there is a disconnect between the municipality and the people on a local level.

4.3.3   Women and youth

The situation for women in Lalitpur has improved over the past ten years:

> "Women are not under the influence of their in-laws as before. Women have the freedom to wear trousers…there are more markets; life is easier for women."

> *Social activist*

In Lalitpur Ward 12 there are 18 or 19 community groups, of which the women's groups, numbering six or seven, are the most active. There are also youth groups and health groups. The primary community groups in Ward 12 are women's groups known in Nepali as 'Mothers' groups'. In English, they are translated as 'Women's groups'. They are organised by ethnic class according to the Women's groups' members. The Women's groups were first established in 2000. They have group lending micro financing schemes and some also focus on health programmes. Box 4.1 provides additional information on the community groups interviewed in Lalitpur Ward 12. These women's groups and youth groups are elements of social capital that the community can consider in developing further in the future. They work with significant portions of the population and can play a valuable role in social resilience development.

Box 4.1 Description of community groups in Lalitpur Ward 12

Women's Group 1 from Lalitpur Ward 12

This Women's group is 10 years old and started as a group lending micro financing scheme. There are 72 members who reside in Wards 11 and 12. There is a selection process to become a member – "no outsiders", only daughters and daughter-in-laws are allowed. Originally, 25 Nepali rupees (£.18) were collected a month, at the present time (January, 2013) 100 rupees (£.70) is collected from each person. Almost all of the members have a loan and the average size of loan is 50,000 rupees (£350). The range is often from 10,000 to 30,000 rupees (£70 to £210). These are unsecured loans to develop a business idea, for consumables or for an event (e.g. wedding). The maximum repayment period is 12 months. Accessing credit from the group is much easier than from a bank according to the members and to municipal government

officials. In addition to financing, the group supports its members in business development, they implement new ideas together, and the women jointly exhibit products during festivals.

Over time, the women's group has been asked by the public sector (municipal and ward level) to get involved in other topics such as earthquake awareness training. The women have been trained as trainers in disaster risk reduction activities and subsequently are training others in the community. The women's group helps in raising awareness on other topics including health. They serve a valuable role in community development and are well regarded by the Ward and the Ward Disaster Management Committee.

Women's Group 2 from Lalitpur Ward 12

This Women's group is eight years old and started with 17 members. There are 45 members now. The initial amount per month collected was 50 Nepali rupees (£.35) and now it is 200 rupees (£1.40) per month. Some women take loans for household expenses such as tuition fees. "It is difficult to depend on men. Women need to save, a little at a time, need to take care of themselves and their family," stated one of the group's members. "Women should be independent and should do anything they want. Women need to be strong," stated the other representative of this women's group. This group has no other activity except for the group-financing scheme because they do not want to undertake additional activities.

Youth Group from Lalitpur Ward 12

This youth group was established 14 years ago. There are 25 members at the present time. The group plays games; sports and sometimes they tidy up rubbish according to

the focus group. The group works with different parts of society and the youth group is open to different schools and different ages. There is an affordable one-time fee to become a member of 25 rupees (£.18). The group meets once or twice a month at its own club space. Members of this youth group have been trained in disaster risk mitigation activities.

4.3.4 Disaster Risk Reduction activities in Lalitpur Ward 12

The Disaster Risk Reduction Committee has been created by request of the municipality and functions on a ward level. The DRRC is comprised of volunteers and there is significant demand for their support from residents who want DRR information according to the DRRC interviews. Representatives of the Lalitpur Ward 12 Disaster Risk Reduction Committee describe their activities and plans for the future. "There is much [DRR] work to be done," said the members of the ward level committee. A member of the DRRC believes there have been significant changes regarding disaster risk reduction in the past ten years:

> "Ten years ago, people did not talk about earthquakes. Now, awareness has been raised through training programmes. We are proud of this. People have been trained, especially women. They know how to act in the event of an earthquake. People have learned to gather in open spaces. People are aware but do not implement [earthquake resistant] techniques because of the money issues. Earthquake resistant homes cost 20% more to build… There should be an incentive to build earthquake resistant homes in the form of a tax decrease."

> *DMC member, male*

A Lalitpur Sub-Metropolitan City official explains that the National Building Code has been introduced and building permits are issued according to the National Building Code. According to this government official, difficulty lies in monitoring the implementation of earthquake resistant measures:

"The National Building Code is fine, the implementation / application of it is the issue. This needs to be the priority for the future. Challenge is the budget and human resources of the municipality. Need to increase the technical capacity of the municipality. There is few staff assigned to this task. Long-term solution would be to licence engineers who would be required to ensure compliance with the National Building Code."

Lalitpur government official, age 40

"Nepal is poor, people cannot afford to build earthquake resistant buildings. The additional costs are high. People have said that they need a subsidy to build earthquake resistant homes and commercial buildings."

Representative of Lalitpur Municipality Earthquake Safety Section

These comments reflect the commonly held view that the issue with earthquake resistant construction is enforcement of the National Building Code. There is insufficient human resource capacity within the public sector to enforce the NBC. The other issue is related to the additional costs associated with earthquake resistant structures. Several interviewees mention a desire for financial subsidy or tax decrease in order motivate people to adhere to the NBC.

4.4   Kirtipur

Kirtipur is located in Kathmandu District on a hill in the southwestern part of the Kathmandu Valley. Kirtipur is one of the five municipalities in the valley in addition to Kathmandu, Lalitpur, Bhaktapur and Madhypaur Thimi. Kirtipur is a small city with 45,000 residents and is the home to Tribhuvan University with 10,000 students. Kirtipur has 19 wards. It is an ancient city and dates back to 1099 AD when it was part of the Lalitpur territory. The religious makeup of the municipality is Hindu, Buddhist and Christian. There has been some inward migration over the past ten years (approximately since 2000) from different parts of the country. About 15% of the population are migrants. The main sources of income are from trade, agriculture

and day labourers working in other parts of the Kathmandu Valley. There is also a tradition of stonemasons and woodworkers. Eighty percent of the people are literate.

4.4.1   Description of Kirtipur Ward 9

Kirtipur Ward 9 is also called Panga and there are 6,000 residents. Ward 9 is in the centre of the city and it is ethnically homogeneous with Newari people and some inward migrants (not of Newari background). It is considered a "semi-core area" by the municipality. Figure 4.4 is a map of Kirtipur Municipality and Kirtipur Ward 9. I had been led to believe by the Municipal leaders in my initial visit to Kirtipur that Kirtipur Ward 9 would be heterogeneous, comprised of mixed ethnic groups and with some inward migration. This is not the image of Ward 9 that was created during my fieldwork. There have been 500 – 600 Newari and Hindu people who have migrated into the Ward over the past five to six years (from 2006) from different parts of Nepal. Migrants into Ward 9 have settled in, are integrated and face the same issues as other residents – infrastructure (electricity and water) deficiencies according to government and community informants. The predominant economic activity is trade. The residents primarily purchase food and do not grow it. "This area was a village for over 50 years before it became a Kirtipur municipality ward 16 years ago," according to a Kirtipur Ward 9 government official. There is one primary government school and one secondary private school in Ward 9.
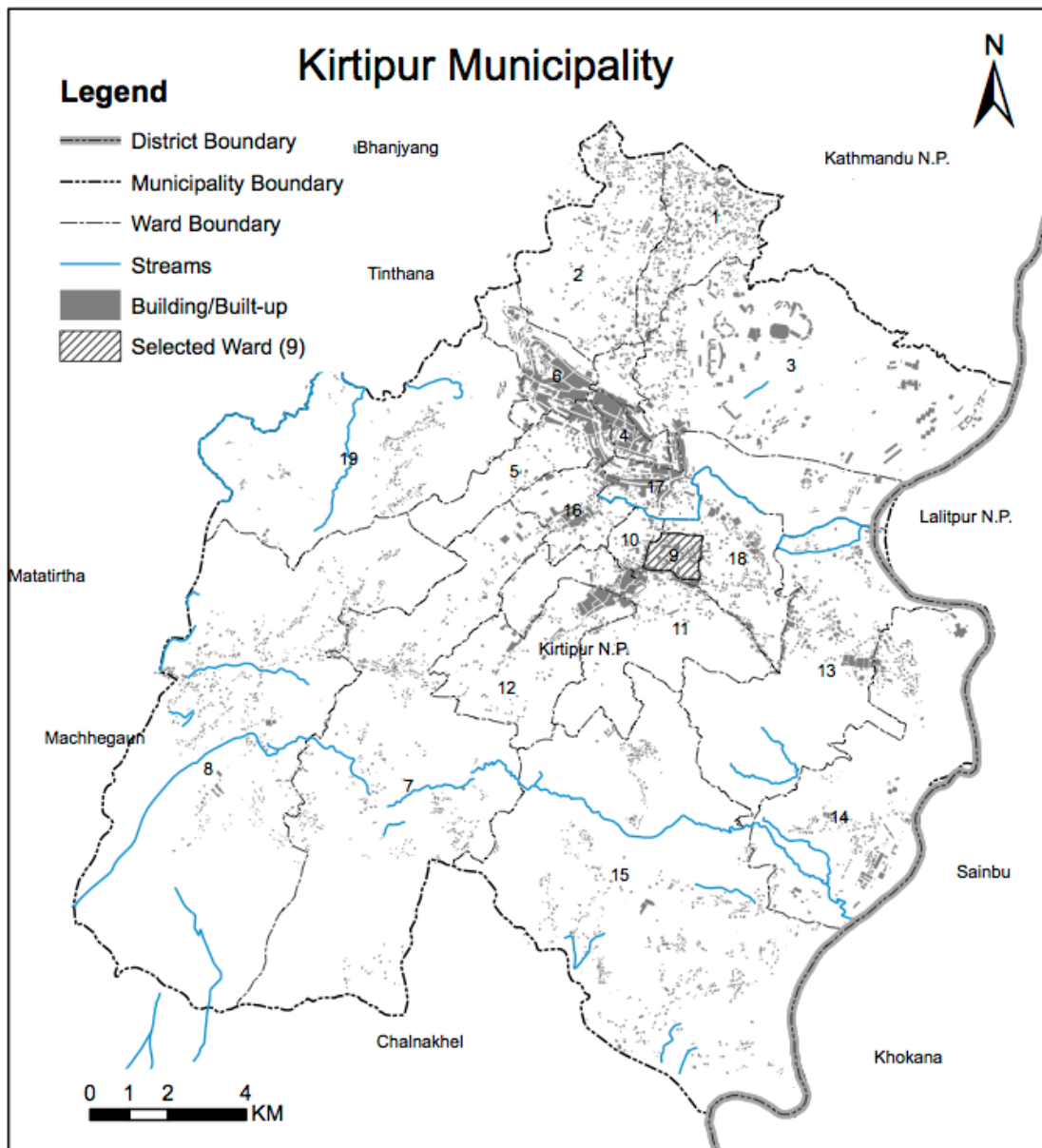
Figure 4.4 Map of Kirtipur Municipality and Kirtipur Ward 9

Ward 9 is spacious, peaceful, and not chaotic. The streets are generally wide (three

metres wide), clean. There is primarily pedestrian traffic and occasionally a bus can

be sighted in Ward 9. Residents access water from private wells or bore holes.

Access to electricity in Kirtipur Ward 9 is identical to Lalitpur Ward 12, it is provided

according to the published schedule on a 12-hour rotating basis. The buildings are a

combination of the old traditional buildings and some slightly newer buildings.

Houses are made from cement, brick and sand. There is some new construction in the ward but my host informed me it is not earthquake resistant. I was explicitly shown the one new residential building near Ward 9 that is being constructed to be earthquake resistant.

The Kirtipur government official interviewed believes it is important to sensitise people about the building code and earthquake safety but is unwilling to enforce the national building code in relation to earthquake resistant construction due to the increased cost of construction. The interviewee states that the municipality is "willing to try to implement the national building code." There are two issues mentioned by the government official: awareness raising needs to be enhanced for construction industry (e.g. masons and building designers) and financing of the additional cost of construction (10 – 15% increase in construction to make an earthquake resistant building). Figure 4.5 is an entrance to a housing area that historically had agricultural land behind the houses but the land has been sold and new houses are being built, therefore restricting access to the existing houses and increasing pressure to utilise entrances such as this one.

Figure 4.5 Entrance to housing area in Kirtipur Ward 9

4.4.2 Informants' views on infrastructure and community development opportunities

Key informants explain what has changed in Ward 9 during the past ten years (social, economic, migration, education). The respondents highlight rapid growth in population and construction. One interviewee explains:

> "There have been lots of changes in the municipality. There is a 50 percent increase in new building construction. There is some migration into the municipality. Ten percent increase in population in the new settlement areas of the Kirtipur Municipality, very little into Ward 9."

> *Elder, male, age 70*

"There has been infrastructure growth as well," according to a Kirtipur government official. Another government official from the ward level explains that although there is infrastructure investment on a municipal level, on a ward level, the improvements have been minimal in Ward 9.

Kirtipur Ward 9 has burgeoning community groups. The Ward Secretary explains there are many community groups including women's groups, youth groups and Guthi (historical social gathering of the Newari people) in Ward 9. Most of these groups started in the past 15 years with the exception of Guthi which have existed for a much longer period of time. "Nowadays, people talk about their rights", according to a Kirtipur Ward 9 government official. According to a NGO worker, "Things have changed. Youth groups are now developed and they are used". A representative of one of the Women's Groups states she is interested in creating a community centre. The elder interviewed explains why an old people's home is essential for the community. Another interviewee explains a new community organisation is being created to address solid waste management in several wards. Box 4.3 provides additional information on the community groups interviewed in Kirtipur Ward 9. The burgeoning community groups are a source of social capital that the government and community leaders can utilise to further development goals and disaster risk reduction efforts for the community. The residents are organising themselves to address topics that are relevant for them and an enhanced relationship with the government can strengthen their efforts. Community resilience can be strengthened by community groups, representing the interests of the community, working with other groups, government and or residents.

Box 4.2 Description of community groups in Kirtipur Ward 9

Women's Group 1 from Kirtipur Ward 9

This women's group has 680 members and was established five years ago. There are 11 other groups in four wards. Once a month, 100 rupees (£.70) is collected from each member. They provide loans to members from 50,000 rupees (£350) to

50,000,000 rupees (£350,000) per loan. Without a deposit, 50,000 rupees can be given as a loan, over 50,000 rupees a deposit is required. All the members repay. There are three individuals who must serve as guarantors for a large loan: the person herself, a family member and a member of the society / group. The group serves as the main source of access to financing for women. Examples of loans include: children's education fees, financing education abroad, house construction. The group is getting more concerned regarding the possibility of an earthquake and they are planning on getting advice on earthquake resistant construction.

Women's Group 2 from Kirtipur Ward 9

This women's group has 70 members and was established five years ago with women from Wards 9 and 10. The members had to pay an initial membership fee of 700 rupees (£4.90). In the beginning, the members had to contribute 110 rupees monthly (£.70), now it is 220 rupees (£1.50) monthly. The average size of a loan is 30,000 – 40,000 rupees (£210 – 280) and is used for small-scale business development (sewing or confectionary business) or for family emergencies. "When the municipality has asked us to get involved with community projects on a volunteer basis, we have declined. They should pay us," explains the representative of Women's Group 2.

Youth group from Kirtipur Ward 9

This youth sports club was established in 1990, has 50 – 60 members and it involves four wards, (Wards 9 – 12). They meet once a month in the premises below the Ward 9 office and there is no charge to participate. The Red Cross trained 20 – 25 youth group members in the topic of earthquake first aid and fire fighting.

4.4.3 Disaster Risk Reduction activities in Kirtipur Ward 9

One of the questions I had before I started fieldwork in Kirtipur related to the possibility of unrealistic expectations of earthquake safety due to the fact that Kirtipur fared well in earthquake situations in the past. For example, the 1934 earthquake did not cause much damage. During my fieldwork, I found people to be concerned and aware of the possibility of significant damage due to an earthquake. Hundreds of people have been trained by INGOs and NGOs including youth groups, women's groups, masons and local house owners on disaster risk reduction measures, fire fighting after disaster and first aid. The awareness levels on a community level have not been institutionalised by the government: Kirtipur Municipality does not have a Disaster Risk Reduction Committee and Ward 9 also does not have a Disaster Risk Reduction Committee, there were no explanations given by government officials as to why these structures do not exist.

4.4.4 Contrasting Lalitpur Ward 12 and Kirtipur Ward 9

The wards have similarities in terms of demographics (ethic groups, middle class, little inward migration) and both wards have community groups (women's groups and youth groups), which are being engaged in disaster risk reduction activities. The private sector was not visible in community development activities in either community. The public sector and the community are beginning to work together, but the private sector is noticeably absent from engagement in community related activities. This may be due to the difficulty for businesses to survive in the current economic situation. The two wards were different in terms of their leadership in disaster risk reduction efforts. Lalitpur Sub-Metropolitan City is recognised as a leader in Nepal for striving to implement the National Building Code, they have Disaster Management Committees on a municipal and ward level. Kirtipur

Municipality is aware the National Building Code exists and is considering implementing the code in the future. Kirtipur does not have Disaster Management Committees on a municipal nor on a ward level. Lalitpur Ward is densely populated, few open spaces and the houses are very close together. Kirtipur has diversity in housing stock, has open spaces and is not as densely populated as Lalitpur (see photographs of the two wards, Figure 1.2 and 1.3 in Chapter 1). Table 4.1 is an overview of the two wards in the areas where they differ. It is a synopsis of the information provided in previous sections of this chapter.

Table 4.1 Comparisons between Lalitpur Ward 12 and Kirtipur Ward 9

Lalitpur Ward 12	Kirtipur Ward 9
Sub Municipality has been implementing the National Building Code since 2003	Municipality considering implementing the NBC
Disaster Risk Reduction Committee on municipal level exists	Does not have a Disaster Risk Reduction Committee on a municipal level
Active Disaster Risk Reduction Committee on ward level since 2007	Does not have a Disaster Risk Reduction Committee on a ward level
Very densely populated	Moderately densely populated
Core ward	Semi core ward
Few open spaces	Has some open spaces
Entrances to housing stock are narrow and low	Entrances to some housing stock are narrow and low
Most housing stock is over 50 years old, narrow and increasingly over 5 stories high	Diversity in housing stock (traditional and new construction) and differing heights of buildings
Ward budget £75,000	Ward budget £7,100

4.5 Defining Resilience in Nepal

During my fieldwork, I asked earthquake experts (national and international), key informants on a national level (INGOs, NGOs and an University academic) and key

informants on a community level what the word resilience signifies in the Nepali context. The following section highlights the range of views on the concept of resilience.

4.5.1 Earthquake experts' views on resilience

During the EwF Project Workshop on January 16, 2013, there was an introductory activity that I led on the topic of earthquake resilience. I asked the 12 representatives of the eight project partners at the workshop to write their views on the following question "What does earthquake resilience mean to you and your organisation?" Each participant was supplied post-it notes and was given 10 minutes to write their views anonymously. At a later point in the workshop, I summarised the information. The breakdown of the eight participating organisations can be seen in Table 4.2

Table 4.2 Profile of EwF Project partner organisations participating in resilience exercise

Institution	Number
University	2
Government agency	1
Donor project	1
Donor	2
INGO	1
NGO	1

The participants' views on the question of "What does earthquake resilience mean to you and your organisation?" were in two distinct groups: the systems approach to resilience and resilience as an interdisciplinary conceptual framework. This divide is similar to the divergent approaches of academic researchers on the concept of

resilience. Most respondents who viewed resilience as a systems approach mentioned three components of earthquake resilience, the remaining respondents listed two or three of the elements listed below:

1. Adapting, resisting or accommodating the disaster event,

2. Maintaining functions during the earthquake, ability to respond and

3. Recovery, to ultimately come back stronger after the event.

These are a sample of the systems approach answers given:

- Resilience is the capacity to absorb, respond to and recover from a shock

- Minimal damage and loss that my organisation and I will have to suffer and after which my family and my organisation can still function without further loss. If there is some damage and loss, even then I can quickly come back to normal without significant support from outside

- Resilience is the capacity to bear the situation created by an earthquake together with earthquake resistant buildings, preparedness plan and other mitigation measures. Resilience is the improved capacity of a community to tackle the situation created by an earthquake

Some participants referred to earthquake resilience as a relatively new interdisciplinary conceptual framework which allows for linkages with other hazards work and which allows for community participation. Respondents also viewed resilience as a mechanism to access funding. These are a sample of the answers given:

- Resilience is a way of approaching and addressing risk, it is also a mechanism to attract funding

- A multidisciplinary concept that is relatively new and we are still trying to fully understand it

- Needs community participation for awareness, capacity development of community stakeholders, structural and non structural vulnerability, linkages with other hazards

The experts working in disaster resilience had two parallel views on the definition of earthquake resilience; they referred to resilience as a systems approach that had three components of preparation, response and recovery or the experts referred to resilience as an interdisciplinary inclusive term that involves community participation. There were two responses (of the 12) that had a combination of both but due to anonymity, it is unclear which type of an institution they represented.

4.5.2   INGO and Donor views on resilience

During the fieldwork in Kathmandu Valley, I interviewed INGOs concentrating on disaster risk reduction programmes and queried their views on resilience, community resilience, and whether it is possible to increase community resilience to hazards. The INGOs express their views in the following two quotes:

> "Resilience is used to describe everything at the moment, it is in vogue. Resilience is not a useful term because a clear level of understanding of the term is needed in order to assess if a community has resilience... Need context to be relevant - resilience of who, to what, when? Retrospectively to define resilience is easier."

> *INGO 4, international representative*

Within the interviewee's organisation, community resilience is defined in a specific way in relation to DRR: "people who are aware, organised and trained for a disaster". The community is involved in defining what to achieve in the disaster risk reduction project.   The interviewee suggested reviewing the components of community

resilience as defined by Flagship 4's characteristics of a Disaster Resilient community in order to get an overview of what INGOS and NGOs are working on in disaster resilience in Nepal.

> "Resilience is the improvement of livelihoods and building capacity of people. On the ground the same type of work is being done as before but presentation is different [rebranded as resilience]. Need to understand vulnerability of whom, which community and which hazard."

> *National representative of INGO 5*

INGO 5 views resilience as an inclusive phrase and the INGO is incorporating it into their existing portfolio of work. They integrate the concept into efforts that address livelihoods capacity building of people and communities to a potential disaster. In INGO 5, resilience as a concept was introduced after the Hyogo Framework for Action was ratified in 2005 and resilience is mainstreamed into all projects by the organisation. The interviewee explains that resilience is not a word in the Nepali language. People do not understand it and the best translation would be "ability to respond to a disaster" or to "rebuild their lives after a disaster".

The conversations I had with donors were informal and not taped. The views of the donors are similar to the views of the INGOs:

> "Resilience is used in so many contexts. It is not clearly defined and is overused. It is in policy documents but the definition will come later. This is an easy way for projects to be repackaged."

> *Donor 3, informal conversation*

> "The concept of resilience has not penetrated my work. It is more important to focus on protecting development gains. Resilience does not move forward the discussion, resilience is not worthy of a high status, it is not livelihoods. …Resilience will not replace sustainable development."

> *Donor 1, informal conversation*

I learnt that the word resilience is utilised ubiquitously in the donor and INGO community focusing on disaster risk reduction efforts in relation to natural hazards. The donors and INGOs do not fully understand how to utilise the concept of resilience nor are the definitions clear and unified. The INGOs are learning by practice. All the donors and INGOs interviewed expressed interest in this thesis and are keen to be informed of the findings from this research. The academic literature has different interpretations of the concept of resilience, experts highlight the systems approach, the donors refer to the systems approach and the interdisciplinary approach, and the INGOs are adapting their work or language to adjust to the emerging situation. The environment surrounding the concept of resilience is changing and adaptation to include new knowledge gained from the implementation of initiatives with communities needs to occur.

4.5.3   Nepali view on resilience

The concept of resilience has been recently introduced into Nepal. During 2002 – 2004, NSET embarked on gathering and compiling a Disaster Vocabulary comprised of numerous Nepal words and acquiring some key words from different languages in the area of Hazards, Disasters and Risk Reduction. At the Dhulikhel workshop organised in 2008 by the Ministry of Home Affairs, in association with ActionAid and NSET, consensus was reached on the etymology of Nepali words pertaining to Disaster Risk Reduction (Government of Nepal, Ministry of Home Affairs, 2011). These 20 keywords include: hazard, disaster, risk, vulnerability, exposure, capacity, resilience, resistant, recovery, response, relief, fore shocks / pre-shocks / after shocks, retrofitting, reinforcement, mitigation, reduction, earthquake "go bag", shaking table, and lastly, duck, cover and hold. The word resilience was one of the 20 keywords that needed a standardised definition. This standardisation of disaster risk reduction

terminology is important because it creates a context where different stakeholders can communicate utilising the same language to communities.

The INGOs introduced resilience into their work in Nepal after 2006. The INGOs and other national stakeholders told me that the concept of resilience is not commonly used in Nepali, the University academic explained that Nepali people do not understand the word resilience. The informant explained personal resilience is different from community resilience. Phrases such as "sustain, capacity, collective capacity to overcome" are utilised instead on a community level. One informal interviewee questioned whether resilience or adaptive capacity is more relevant in Nepal, capacity building is easier to understand in Nepali and this is the phrase NSET utilises in its work on earthquake awareness.

In the Nepali language there are two phrases (one has positive connotations and the other negative) that can be defined as resilience but these phrases are not used in the communities nor are they used by NGOs working on community resilience projects.

'*Utthan Shilta*' has positive connotations and is defined as:

- Standing up and capacity, used in dictionary for disaster

- Rising, back to previous state, back to normal condition.

'*Jyadro*' has negative connotations and is defined as:

- To try to suppress and come back to a new state

- Does not change - no matter how hard you try (negative meaning)

A senior official at a national NGO communicated to me an example of *jyadro* in the form of a tale about a female dog with a litter of puppies. The dog repeatedly came to the kitchen begging for food and attempted to steal food. The Hindu family threw the

94

food out due to contamination from the dog. The children (in this story, the children are the 'disaster') hit the dog. They stoned her, locked her up. After the dog repeatedly stole food from the kitchen, the teenagers put the dog in a bag with stones and threw her into the river. Three months later, the dog came back wagging and wiggling her tail. They could not get rid of her, no matter how hard the people tried. The official's interpretation of the story is that disasters cannot keep people down permanently; people are resilient.

4.6   Summary

In this chapter, Nepal is described in relation to its development gains for the population as well as the economic situation and the earthquake hazard facing Nepal. A description of the two fieldwork communities highlights their similarities and differences. Community informants give their views on infrastructure and government in Lalitpur and in Kirtipur, community informants express their views on the infrastructure and community development opportunities. The increasing role of women's groups and youth groups in disaster risk reduction activities is highlighted in both communities as an emerging source of social capital. The chapter concludes with the definition of resilience from different perspectives, the earthquake experts, INGOs and donors who work in community resilience programmes and the Nepali perspective on the concept of resilience. The concept of resilience and its characteristics varies amongst academics, donors/INGOs/practitioners and the communities; the disconnect between stakeholders is tangible. The words utilised in Nepali do not fully address all the aspects of the systems approach (before, during, and after an event), and the concept of adaptation is most commonly referenced.

In the next two empirical chapters, I discuss two main themes that arise from my discussion with donors, INGOs, and representatives of two municipalities and two

specific wards. These topics are the role of governance (urban context, Nepali government and views of community stakeholders about government and governance) and everyday geographies (livelihoods, cultural and social implications of resilience and tools to enhance community resilience). These topics relate to community resilience in diverging ways but highlight the necessity to look at community resilience in the context of where people spend their daily lives and the relationship with government.

Chapter 5 Governing urban community resilience

Governance is a term "that covers the ideologies, power relations, formal and informal networks, and resource flows that determine the relationship between the state (at various levels; national, sub-national, local/municipal) and civil society. 'Good governance' has aspects that are cultural, political, social and economic." - Wisner et al (2004, 345).

5.1 Introduction

The previous chapter describes Nepal (development gains, economic situation and earthquake hazard) and the two fieldwork communities from the views of informants. The increasing role of civil society groups in disaster risk reduction activities is highlighted in both communities. The chapter concludes with a description of the concept of resilience from various perspectives: earthquake experts, INGOs who work in community resilience programmes and the Nepali perspective on resilience.

In this chapter, I discuss the role of governance in relation to community resilience in the urban setting. Governance and disaster resilience in the urban context is discussed through a review of recent academic literature, and a review of Nepal's disaster risk reduction structure and the national building code. The concept of community is explored in the urban context and the relationship between rural and urban Nepal is discussed. The chapter concludes with views on governance from the perspective of informants from the two fieldwork communities. This chapter addresses the following research questions, 'How is the concept of resilience understood by community members at the local level; and what, in local terms, are the characteristics or components of resilience?' and 'Can resilience be enhanced or supported through external intervention? And if so, what form might these interventions take?'.

5.2   Governance and disaster resilience in the urban context

Studies are being published on resilience and governance in the urban context providing guidance on the role of the government, in particular the emerging importance of local government and its role in creating a disaster resilient city (Dodman et al, 2013; Malalgoda et al, 2013; UNISDR, 2013a; Valdes et al, 2012; Campanella, 2006). A disaster resilient city is a combination of infrastructure and human dynamics. Disaster risk reduction is contextualised in Nepali government structures, and the national building code and its relationship to earthquake mitigation is also explored.

5.2.1   Recent literature

In the recent past, researchers have published several articles of the topics of resilience in the urban context and the emerging concept of a 'resilient city'. Malalgoda et al (2013, 75) provide a definition of a disaster resilient city in terms of physical and human elements:

> "A city which is capable of withstanding at a time of disaster, with minimal, or without any, effect to the city, its physical systems and human communities, while incorporating planning and mitigatory measures to avoid or limit the adverse impact of hazards and developing advance measures to ensure effective response at a time of a disaster."

This section highlights emerging ideas related to disaster resilience in the context of urban settings, cities and the role of governance. Urban areas in low- and middle-income nations contain a third of the world's population and are increasingly vulnerable to disasters (Satterthwaite et al, 2007). The city is a social and historical construction, a place where power functions through specific channels including the municipal and the central government, private sector and civil society therefore power dynamics have multiple pathways (Wilson, 2012b) and this urban reality needs to be

contextually understood (Dodman and Mitlin, 2011) in order for external support to be effective in the urban context. The "resilient city" is a comparatively new term, but is now increasingly used in disaster related literature and policy documents, Valdes et al (2012, 5) explain:

> "Local governments are the institutional level closest to the citizens and to their communities. They play the first role in responding to crises and emergencies and in attending to the needs of their constituencies. They deliver essential services to their citizens (health, education, transport, water etc.), which need to be made resilient to disasters."

Valdes et al (2012, 6) continue on the subject of urban resilience:

> "Making cities resilient to disasters is an opportunity to improve local governance, increase participation and foster a culture of safety and sustainable urbanisation."

Dodman et al (2013, 27) discuss cities where risks to stresses and shocks have been greatly reduced through 'accumulated resilience', a combination of good local governance and community-based responses:

> "These responses can be more general development activities that contribute to the building of resilience (through reducing exposure to hazards, reducing sensitivity to the effects of these, and building the capacity to respond)…This includes investment in physical infrastructure, public health infrastructure and education; as well as strengthening of citizen rights and social safety nets."

Dodman et al (2013) suggest that there are key components of resilience for cities — for instance, flexibility (ability to change, evolve, try new solutions), redundancy (spare capacity to accommodate increasing demand or extreme pressures), building local capacity, resourcefulness, responsiveness and the capacity to learn. Urban risk is often created or exacerbated by local government's incapacity to act in the public good and ensure infrastructure and service provision to its residents. In 2009, the UN Secretary-General Ban Ki-moon stated:

"I call for the need of world leaders to address climate change and reduce the increasing risk of disasters – and world leaders must include Mayors, townships and community leaders."

To support the UN Secretary-General's comments and to encourage local governments to implement DRR measures, the UNISDR launched a campaign titled *'Making Cities Resilient – My City is Getting Ready'* in May 2010 to improve resilience of cities (Malalgoda et al, 2013). The UNISDR subsequently developed a toolkit for local governments containing 10 essentials for making cities resilient (UNISDR, 2013b).

Essential 1: institutional and administrative framework.

Essential 2: financing and resources.

Essential 3: multi-hazard risk assessment-know your risk.

Essential 4: infrastructure protection, upgrading and resilience.

Essential 5: protect vital facilities: education and health.

Essential 6: building regulations and land-use planning.

Essential 7: training, education and public awareness.

Essential 8: environmental protection and strengthening of ecosystems.

Essential 9: effective preparedness, early warning and response.

Essential 10: recovery and rebuilding communities.

These 10 essential components are a guide to building a sustainable and resilient city to disasters. There is a handbook for local government leaders that provides a framework for risk reduction and highlights good practices and tools that are already being used in cities (UNISDR, 2012) in order to achieve a resilient city. There is no literature available to assess the impact of the toolkit at the present time. The UNDP (2004, 62) argue for the key role to be played by municipalities:

> "Municipal government are a champion for governance — linking public, private and civil society actors in the city and bridging the gap between international and national level actors on the one hand, and urban or community level organisations on the other."

According to the 2004 UNDP World Disasters Report, effective and accountable local authorities are the single most important institution for reducing the toll of natural and human-induced disasters in urban areas. Malalgoda et al (2013) state that although there is growing interest in the role of local governments in making cities resilient, unfortunately local governments are not taking the lead role in initiating DRR strategies due to "financial and human resource scarcity and by the capture of local level responsibilities by the central government" (2013, 78). Malalgoda et al (2013) stress the necessity to empower local governments so that they can effectively contribute to making their cities more resilient to disasters. According to Campanella (2006), there are three main factors affecting a city's resilience - political and economic conditions, city planning and the resilience of its citizens. To facilitate effective planning, a city needs to have a strong governance system where the leaders can empower citizens to act responsibly and to organise themselves in the recovery and reconstruction phases (Malalgoda et al, 2013).

International organisations have not had much success in supporting local development in urban areas in relation to good local governance and disaster risk

reduction (Satterthwaite et al, 2007). Many humanitarian agencies have little experience of working in urban areas, or of negotiating the complex political realities that exist in towns and cities (Kyazze et al, 2012). The British Red Cross Urban Learning Project Scoping Study (Kyazze et al, 2012) focuses on five municipalities including Kathmandu. Their study not only focuses on disasters, conflict and violence but also 'everyday risks' and gives concrete suggestions on how best to work in the urban context in relation to disasters (Ibid, 7):

> "For most people, 'everyday risks' – for example, the risk of not getting enough to eat, not being able to pay to go to the doctor, uncontrolled fire ripping through the slums, are far more significant than disasters. In the British Red Cross' work with the Nepal Red Cross Society in preparing for earthquakes, the more frequent emergencies experience by people, - such as fire, flash flooding, epidemics, storm damage, water shortages and landslides – seemed 'more real' for communities…Vulnerability in urban areas is heightened by inadequate and/or unstable income, high unemployment, the need for cash to meet basic needs in urban markets, and inadequate, unstable or risky asset bases. The built environment can be a major source of vulnerability, with poor choice of construction systems and building materials as well as poor design and workmanship leading to significant risk of disaster."

The relationship between disaster risk, development shortfalls and vulnerabilities as well as the everyday risks and hazards people face create a very complex reality in cities. According to Dodman and Mitlin (2011), the distinction between 'development' and 'risk reduction' in urban areas is not clear. Interventions to strengthen livelihoods and to improve the provision of basic governmental services make significant contributions to the abilities of individuals, households and communities to weather shocks and stresses related to disasters. Satterthwaite et al (2007) also make the link between development, local governance structures and the capacities and abilities of the residents to address the hazards impacting urban communities.

5.2.2 Government of Nepal and Disaster Risk Reduction

Nepal was a closed society until 1950 when the Rana prime ministers were overthrown and replaced with a democratic government. Governance and the role of government have undergone rapid changes in Nepal since the country first became accessible to foreigners and foreign aid began flowing in (Mihaly, 2002). The decade long insurrection that finished in 2006 has led to significant changes throughout Nepal. There have been frequent changes in the Maoist led government and the Maoists repeatedly postpone central government elections. At the present time, there is a care-taker government which cannot pass laws and is working on a new constitution. The last local elections occurred in May 1997. Elected officials had their posts until July 2002 when they were replaced with central government nominated individuals. District and local government officials including the ward secretary are appointed by the central government, which means that they are not representative of the community and their alliance is directly to the central government who can change them at will. This has implications for local governance because the municipal and ward officials are accountable to the central government for their actions rather than to the electorate who since 2002 has not be allowed to elect municipal officials to represent their interests.

Nepal is functioning under legislation for disaster management passed thirty years ago. The 1982 Natural Calamity Relief Act focuses on rescue and response (Picard, 2011) and gave the Ministry of Home Affairs responsibility for formulation of polices and implementation. In 1996, the Government produced the National Action Plan for Disaster Risk Management to address different stages of a disaster including before, during and after the disaster. In 2005-2006, two parallel initiatives, independent of each other, took place to address the needed conceptual changes in relation to DRR

that have been brought to the forefront due to the Hyogo Framework for Action. One initiative was led by Oxfam and the national NGO, National Centre for Disaster Management to draft a new policy and act and the other initiative was led by UNDP and NSET to develop the National Strategy for Disaster Risk Management in accordance with the UNISDR HFA (Jones S., Oven K.J., Manyena B. and Aryal K., in preparation). The national strategy is the national framework that documents the government's commitment to conserve, strengthen and promote natural resources and physical infrastructure. The long-term vision of this strategy is to make Nepal a disaster resilient country. The national strategy has two versions, the second of which was redrafted by the MoHA and approved by the Cabinet. It is unclear how the Policy and Act from Oxfam and NCDM, the National Strategy developed by UNDP and NSET and the MoHA redrafted National Strategy relate to each other (Jones et al, in preparation). The MoHA Act is waiting to be ratified by the Government of Nepal, until then, the country is functioning under legislation that does not provide necessary guidance.

According to an USAID strategy report on DRR (2011, 4), "there is a lack of institutional or technical capacity" in the government in relation to disaster risk reduction. "Awareness of the need for DRR is low on the priority list compared to other challenges in Nepal" (2011, 5). The report reflects the lack of political will in an unstable political climate and lack of proper coordination among key stakeholders. The U.S. DRR Strategic Framework Nepal 2012 – 2016 highlights that community level engagement must be the cornerstone of Disaster Risk Reduction plans and interventions by external organisations because family, friends and neighbors will be the first responders in most communities and they should be empowered.

A senior official at Donor 1 informally voices the following view on the Nepali government in relation to DRR:

> "We have done as much as possible without a strong government, without Nepali leadership. Need to incentivise politicians – the closer they are to the communities, the more responsive they are. Need [elected] mayors; there is no substitute for mayors…[Donors and INGOs] need to be careful and not to terrorise people about hazards. The state expects its people to take responsibility for so much (for example – when building a house, an individual needs to be an expert in construction)."

This comment reflects the views of donors and INGOs who have been working with the government and communities to strengthen their DRR capacity. The donors and INGOs have attempted to build the capacity of communities to deal with a natural hazard in parallel to the government or in isolation due to the fact that the government is not functioning properly. For example, in Kirtipur, hundreds of people have been trained in DRR by INGOs and NGOs with the approval of the municipality (according to my interviews with municipal officials and a NGO worker) yet the municipality and the ward have not institutionalised these efforts in the form of disaster management committees. Jones et al (2013) in their research in Nepal highlight community based DRR activities can be more successful when they are formally viewed as part of the local government structures.

My fieldwork diary entries voice concerns about the government in the face of a major disaster, for instance:

> "No one appears to takes decisions in the government… chaos. It is clear the country will not be able to cope in case of a severe earthquake. There will be massive destruction and loss of life and everyone I speak to is anxious about it. The international development community and national NGOs are serving many of the functions you would expect from the central government. Who will take decisions in the central government in the event of disaster? There is minimal capacity in the government. There is a caretaker government that can pass no new laws, just publish 'guidance notes' and who continually delays elections."

NGOs appear to be frustrated with the central government:

> "Forget the government! Resilience does not rely on government in Nepal. Government should not be bad (this is all we ask), it should not hinder us from a livelihood. [The central government] should not shut off electricity when it said electricity would be on [according to the load shedding published schedule]."

Senior official at a National NGO

> "Government is an obstacle. They agree with things [for DRR] but to get the agreement to be translated into action is a challenge. For years, there have been no elections; the administration is like a politician. They do not actually do the work".

Community Based DRM Official from a National NGO, male

The respondents highlight the powerful role of the central government and the fact that the central government is not fulfilling its responsibilities in relation to DRR. Although the critical role of communities in a disaster is understood and is being developed through training programmes supported by INGOs and NGOs, it is not feasible to ignore the government in a time of disaster. In low and middle income countries that are vulnerable to disasters, much of the exposure to risk faced in urban settings come from the "incapacity of local governments to ensure provision for infrastructure and for disaster risk reduction and disaster preparedness" (Satterthwaite et al 2007, viii). The inability of local governments to be prepared is linked to the failure of central governments and the donor community to support urban policies and governance systems that ensure needed infrastructure is in place for a disaster. Efforts could be made to allow local governments to manage disaster risk reduction initiatives in a way that includes representing the interests of the people, an effective partnership with citizens, community groups and other government entities responsible for disaster risk reduction and disaster preparedness. Community

resilience cannot be effectively enhanced without proper engagement from the government.

Jamil and Dangal's research (2009, 208) into the state of bureaucratic representativeness and administrative culture in Nepal proposes that the typical profile of a bureaucrat is a Hindu male who belongs to the upper castes and comes from an agricultural background. The current situation in Nepal bureaucracy can be characterised in the following way:

> "The bureaucracy in Nepal is characterised by values that are representative of the existing power structure in society, where those belonging to higher castes decide for others. It [the central government] has yet to develop values that may be said to resemble professional and modern managerial values… Public services are the result of lobbying, personal influence, and often extra-legal means."… [This same behaviour] "enhances group values and familial norms crucial for maintain harmony and cohesiveness in a highly hierarchic society." [This type of] "excessive and unresponsive bureaucracy is likely to dwindle citizen's trust on public administration in general."

The political combination of a caretaker government, who can not pass new laws or devise strategic plans for the development of the country, the lack of elected officials, and government bureaucracy led by male representatives who belong to higher castes and from an agricultural background (not representative of the country and also not from an urban setting) make governing, disaster risk reduction and resilience efforts problematic to implement in the urban context of Nepal.

5.2.3   National Building Code

Buildings are a critical factor in seismic risk, over 95% of all deaths in earthquakes result from building failures (Erdik, 2013; Alexander, 1985). Government officials should look at the elements that relate to building safety, with "specific consideration given to the shape, siting, building materials and constructional details of buildings" according to Wisner et al (2004, 278). Formal building codes enforcement and land

use planning controls can minimise significantly the impact of earthquakes (Wisner et al, 2004).

An important aspect for earthquake risk mitigation is the enforcement of the National Building Code regulations by municipalities. The enforcement of the national building code and earthquake resistance structures is affected by policy overlap between the Department of Urban Development and Building Codes and the Ministry of Local Development (USAID, 2011) and due to the regulatory and implementing bodies not being under one authority, inspecting and enforcing the codes is difficult. This is compounded by the lack of government capacity to enforce codes (USAID, 2011). Lalitpur Sub-Metropolitan City is the leading municipality in Nepal regarding the enforcement of the national building code (Government of Nepal, Ministry of Home Affairs, 2011), they are encouraged by their initiative but highlight during our interview, a lack of human resources to address the scale of work to be done. In Kirtipur, the Municipality is not enforcing the national building code in relation to building new earthquake resistant structures; a Kirtipur government official states, "we are considering implementing the national building code, it is too expensive to build earthquake resistant structures." In the government official's view, people are too poor to absorb the additional costs and it is not worthwhile to even attempt to enforce the national building code.

The lack of capacity to enforce the code is a common problem in low-income countries according to the UNDP (2004, 61). Based on research in Turkey and Algeria, one possible solution to the issue of enforcement of the National Building Code is to transfer construction supervision to the private sector with costs being carried by developers (UNDP, 2004). This could be considered in Nepal if the private sector is given the training and support by the government in the initial states of

implementation. The Lalitpur Sub-Metropolitan City suggested that a long-term solution would be to licence engineers who would be required to ensure compliance with the National Building Code. In Lalitpur, the municipality and a member of the disaster management committee spoke of tax reductions or subsidies to motivate people to build earthquake resistant homes and commercial buildings. From the research, it becomes apparent that the government, NGOs and community members are aware of earthquake disaster risk and are considering ways to engage with the topic but at the present time, the government lacks the capacity (financial and technical) and structures to implement policies, enforce the national building code, or properly establish effective relationships with community members and external support.

5.3   Concept of community

Researchers have written extensively on the issue of community in relation to space and scale (Day, 2006; Delanty, 2003; Gilchrist and Taylor, 1997; Hoggett, 1997). It is necessary to understand resilience at the local community level since it is at this level that resilient pathways are implemented 'on the ground' (Adger et al, 2005). It can be argued that it is important to understand the "local level first, before scaling–up to regional, national and global …decision-making levels" proposes Wilson (2012b, 1). It is valuable to consider local realities because the new approach to hazards and disaster management programs focuses on "a local consideration of the problems rather than being limited to a transfer of technology from industrialised to developing countries" explains Gaillard (2007, 539). As was discussed in the section above on resilient communities, the relationship between the government and the community level must be considered in disaster risk reduction and community based responses to a crisis. Bahadur et al, (2010) suggest that programmes or projects

aiming to build resilience should engage locally or use the community as an entry point for starting initiatives. This highlights the importance of community participation in policy processes and decentralised institutions, and conceptualisations of resilience often use the community as the unit of analysis (Bahadur et al, 2010; Cutter et al, 2008; Mayunga, 2007; Nelson et al, 2007; Manyena, 2006; Adger et al, 2002).

The concept of power emerges in Hoggett's (1997) discussion of community development, he states that community development is related to power and empowerment, power is not a finite entity held by one party, channels are created by which power flows over time. Dodman and Mitlin (2011, 8) propose that communities are not homogenous entities, "individuals frequently belong to multiple communities with different members, boundaries and contrasting or even competing agendas". There are many different stakeholder groups or individuals within 'communities', and these actors are embedded within complex networks of power (Allen, 2003; Calhoun, 1998) and with often highly divergent aims related to resilience. This focus on power is transferable to the notion of community resilience and the flow of power through spatial levels, Wilson (2012b, 2) explains:

> "Community resilience, therefore, is often associated with the quest for multiple resiliences within a community pursued by highly varying stakeholder networks, some of which may be directly contradicting and undermining efforts by other groups in the community to achieve maximum resilience."

In the Nepali context, Bista (1991, 143) refers to the concept of community in Nepal:

> "People's conception of society extends little beyond that of the village, notions of government, of the state, nation and patriotism and of the people and the public are often difficult to grasp. There is a concept of community, but is a localised concept."

110

In Nepal, the concept of community also includes family members who are not located physically nearby; this is important to consider in attempting to build urban resilience. The concept of community needs to be clearly understood in order to build upon it. Local communities and individual pathways are "embedded in nested hierarchies of scales with close scalar interconnections between the community and the regional, national and global levels" (Wilson 2012b, 2). Increasingly, research has been focused on understanding the relationship between community resilience, power, pathways, whose resilience matters, hierarchies of scale and interconnections between people in different spaces. The relationship between resilience and community is valuable to explore because resilience of a system needs to take place in order for people to be resilient in the face of a natural hazard. The relationship between a person and the community and the government is interlinked and necessary in an urban environment.

5.3.1 Ward as the community

During my fieldwork I was uncertain if I was focusing on the appropriate government level for my research on community resilience. In order to understand community resilience in an urban context, to assess it and to learn how to enhance resilience, was the ward level (lowest level of government) appropriate as a unit of analysis? Should I have been looking at the municipal level or alternatively on a lower level called the "tole" (neighbourhood)? In rural Nepal, community is more clearly defined. The VDC would have been appropriate based on experience of other researchers. In my fieldwork diary, I wrote:

> "Am not sure at this point if the ward level is the most appropriate level to look at community resilience. It is the closest to the people but the ward has minimal power and minimal budget to manage. Until 16 years ago, Ward 9 in Kirtipur was a VDC. The secretary said that the VDC was more powerful, had more financial resources and was more accountable to the people than the

Ward 9 is at the present time. Both Ward 9 in Kirtipur and Ward 12 in Lalitpur seem to try to represent the people to the next layer of government (the municipality) rather than being able to take any direct action. On what level should we consider community resilience?"

"Have some questions, is ward level appropriate for community analysis since the ward has little authority? Should it be higher? The municipality with its 20 wards? Can any review of resilience be done without understandings of culture and society? Can you assess resilience before an event? Am not sure."

I asked representatives of INGOs, representatives of a national NGO and an academic what their views were on the relationship between a community and a ward. All the interviewees were clear that to understand community resilience, it would be necessary to utilise the ward level in the urban context. When I asked the question, "What is a community?" these were some of the responses:

"When a person dies, who finds out first"? … "Can be a VDC, a ward, distance of 5-6 miles. In the urban setting, could be more narrowly defined, a geographical area. This could be a ward."

Senior official at a National NGO

"Physical boundaries. Ward is appropriate because of ethnicity, housing, population, representation, schools, and community groups. Ward level is appropriate because the information on population is important to consider when making a comparison."

My counterpart at NSET

"Government structure of Ministry of Home Affairs, District Disaster Management Committee and in rural areas, the Village Development Committee (and Disaster Management Committee) but in the urban areas, this ends at the Municipality level, not at the community level. Since the community is the ward level, we look at a community not by population but by useable geographic area."

INGO 4, International representative

In Nepal, the urban community is comprised of people who live in one ward but may commute as a daily laborer into another part of the city (Kyazze et al, 2012). People

in cities use space differently and their concept of community may change depending on the topic being discussed (where are they work and are located during the day versus where they sleep during the night and consider their home). Women generally move to the house of the husband when they marry so their notion of community may also vary. The ward level is the lowest administrative unit of the government and community resilience in Lalitpur and Kirtipur are considered on this level to give a physical boundary and also the level of population is similar in the two communities (6,000). The geographical entity, the ward, may not necessarily be a community (social entity) but resilience may have more likelihood of being enhanced if the geographical entity is also the social entity.

5.3.2   Interdependence between urban and rural Nepal

Cities are interconnected with rural areas via economic and employment linkages as well as food security (Revi and Rosenzweig, 2013). In Nepal, the urban and the rural are closely intertwined. There is a close relationship between the people who live in urban settings and their extended families living in rural areas in Nepal. People living in the urban areas travel to visit their extended families in the villages that may require days of travel in order to celebrate festivals and other special events (birthdays, marriages, deaths) in their village according to my interviews. Discussions about urban resilience versus rural resilience are not the most appropriate. It is more relevant to discuss levels of resilience within urban settings and to understand how their levels of resilience impact rural communities and vice versa. Satterthwaite et al (2007, viii) writes:

> "It is inappropriate to consider rural and urban areas separately, given the dependence of urban centres on rural ecological services, the importance for many urban economies of rural demand for goods and services, and the reliance of much of the rural populations on urban centres for access to markets, goods and services."

There is a strong relationship between rural and urban, migration and remittances. As was mentioned in Chapter 4, 56% of all Nepali households in 2010-2011 received remittances. As Rigg (2012, 167) suggests, the "rural and urban living are interlocked across space". These remittances come from migrants who reside in Nepali urban areas and internationally. The "role of remittances of all forms (financial, political, social and cultural) create a lattice of relationships and dependencies that link people in different places" (Ibid, 173). This makes it difficult to make distinct comparisons between urban community resilience and rural community resilience because the two are interconnected. It is not as delineated as it may have been even 15 years ago in Nepal when the migration flows and the accompanying level of remittances was significantly lower. People have networks in Nepal that are located in multi-sites thus making comparisons between urban community resilience and rural community resilience problematic. The added failure of national governments and the international aid community to act in a cohesive manner (Satterthwaite et al, 2007) also impacts both rural and urban settings in low income countries.

5.3.3   Differences between urban and rural Nepal

It can be argued that there are some tangible differences between urban and rural contexts in Nepal. Historically, most foreign aid has targeted predominately rural Nepal (Mihaly, 2002). It is only recently, that the focus is starting to turn to the urban areas in Nepal. The same can be said for other low-income countries, "most international agencies have chosen to avoid investing in urban initiatives," according to Satterthwaite et al (2007, viii). The urban dwellers are vulnerable in part due to the inability of local governments to provide infrastructure and the framework for DRR to be imbedded. During my interviews with INGOs, NSET and the university academic,

it became apparent that the key informants are apprehensive about the urban context

and how best to work there and to make an impact:

> "The urban setting is more complicated and harder to get time from people."

> *Senior official at NSET*

> "In the rural context, social capital is high... they will come to you to talk…migration flow from rural to urban has been massive into Kathmandu Valley over the past five to seven years. My organisation has worked historically in DRR in rural areas, in urban context, there is a challenge… people do not have time to talk, participants are hard to get for training events, everyone is working hard to have a livelihood."

> *INGO 3, National representative*

> "Community in urban settings… Relationship of people to each other... there are different complicating factors. Belongingness? Live in one ward, work in another ward… in rural setting, people have work, school, farm all in one place… There are urban issues. It is difficult to get volunteers, livelihoods are a daily struggle in urban areas and people are busy. They do not know if they will have time."

> *INGO 4, International representative*

The British Red Cross (Kyazze et al, 2012) discovered from their research in five

cities located in different countries (including Kathmandu) that people in cities use

their time differently than in the rural areas. People have formal and informal ties to

the market economy and daily life revolves around commuting, jobs and other

priorities. It may be more of an issue to get people to volunteer their time if they are

struggling with livelihoods and other everyday hazards such as lack of water in the

city. The British Red Cross also discovered that DRR community meetings and

training activities needed to take place in the evenings or on weekends to ensure there

was not a conflict with livelihood strategies. One of the INGOs I interviewed also

highlighted the need to reorganise training events to accommodate the rhythm of the

urban everyday life. The following comments highlight difficulties in having an

impact on urban communities, the need to compensate participants of training programmes and also the different social fabric in rural areas:

> "In the urban setting, people have been educated about DRR, they will not use it though, more difficult to make a change and to have impact, must have incentive for participants to attend, masons need to be compensated (they are hand to mouth, so could lose tomorrow's income if they come to a training activity on earthquake resistant structures), the [volunteer] DRR committees will not come to trainings without allowances. In rural settings, there is more cohesiveness found than in urban settings but this has decreased somewhat due to politics, the conflict, the revolution (it was not a civil war), small investments can give a lot of impact in the rural areas."

> *Community Based DRM Official from a National NGO, male*

> "In the rural setting, people are altruistic; there is more spirituality, 'doors to heaven will open' if you help others. People do not feel alone in the rural areas when a hazard happens. People will rebuild a house of someone who was in an earthquake without vested interests. People are not tainted by 'individualistic thought'. In urban setting, people do not want to volunteer."

> *University academic, male*

The urban context does not resemble the rural context for DRR activities. The INGOs and NGOs are learning about the difference and are attempting to adapt to the urban context of Nepal. The time constraints and livelihood priorities of urban residents make it problematic for individuals to focus on volunteering and to learn about disaster risk reduction activities. Donors working on DRR in urban settings need longer term projects to accommodate the shorter training events spread out over a longer time frame to address urban livelihood constraints, the projects need to pay participants (to compensate for lost wages), and also need to understand from the community perspective which hazards are most critical to address. Analysis needs to be made to understand what constitutes a community to the residents, how and who is in their definition of community in order to build resilience to a specific hazard and possible disaster. If resilience can be built or enhanced through DRR interventions,

what is the learning that can be taken from the rural setting and incorporated into the urban setting? Are there any? Should the discussion on community resilience be reframed to include urban and rural? What do the differences mean for resilience building activities in urban areas? Practical issues need to be addressed such as where do people want the training activities to be held, where they work or where they live? During the day, evening or on the day of rest?

The pressures on people in urban areas tend to undermine community resilience. The concept of urban community resilience is based on multi-sited networks. In the event an earthquake does strike the Kathmandu Valley, community resilience can be considered on a limited geographic area (ward) and support neighbours, family and friends located in the immediate geographic area can provide and as well as support government can supply in the short term, in the response phase of a disaster. The community resilience that is based on extended family networks located in different physical locations will be important for the long term recovery of the community after a disaster.

5.4   Views of key informants on local governance

I interviewed key informants in Lalitpur and Kirtipur and solicited their views of local government and the relationship it has with the residents. The municipality is led by an Executive Director (not a mayor) and the ward is led by a Ward Secretary. The answers are consistent from respondents although the two wards differ in some aspects (see Chapter 4).

5.4.1   Lalitpur Ward 12 key informants' views on governance

All interviewees comment on the drastic deterioration of infrastructure during the past 10 years leading to the situation where at the present time there are issues with access

to water and minimal electricity. The respondents carefully consider how to explain the role of the ward government in local development of the community. The purpose and role of local government is evolving, the government's obligation to citizens is being discussed and long term strategic planning are in the nascent stage. These comments highlight the range of opinions about local government and its relationship to residents:

> "Citizens think the Municipality should do the development. The Municipality should do it all [for the residents]."
>
> *Lalitpur senior government official, male, age 60*

> "There is a lot to do and a lot has been done. The municipality should clean the streets, help businesses and organise marketing of the area."
>
> *Lalitpur Copper Businessman, male, age 65*

The municipality leader states that the residents want the municipality to address and solve all of their problems. In his view, the municipality needs to prioritise and address some of the most important issues that are within its mandate, such as sewage. The businessman has a balanced view, stating the municipality is attempting to support the development of infrastructure (road widening) and is supporting business development through marketing of the ward and training of youth in traditional skills. Other respondents comment on the strategic planning process that is occurring in the municipality and the ward and ways to improve upon it:

> "The ward should listen to the problems of the people and then communicate this message to the municipality who has the budget. The ward does not play a direct role in development but the municipality has a strong role. Municipal officials would be more responsive if they were elected."
>
> *Lalitpur Ward 12 government official, male, age 65*

"The ward assembly is starting local level planning and is compiling information from the ward level. The ward level and municipal level are listening now. Before it was top down only."

Lalitpur Ward 12 DMC member, female

"The government should be aware of the needs of the people. They should look after the community. People are busy and do not ask the government for services. They should establish an earthquake resistant house tax decrease. There should be incentives to build earthquake resistant homes."

Lalitpur DMC member, male, age 30

The interviewees are interested to have a role in the planning for their ward and their municipality. They state that the government should be listening to the residents and addressing their needs (infrastructure and community development). Local level planning has started this year through the ward assembly. In the past, the municipality allocated money to be spent in the ward (e.g. for construction, training programmes, women and education), now the municipality is beginning to listen to the ward level regarding how the funds should be spent in the ward according to a Disaster Management Committee member. One DMC respondent states that people have been disappointed by different levels of government, residents are not engaging with the government, do not ask for services and are relying on themselves for most services (water for example).

Key informants (including members of the DMC, ward secretary business men, social activist), have clear expectations regarding changes they would like to see in Lalitpur Ward 12 for it to be a better place to live. The answers focus on two topics, urban infrastructure and disaster risk reduction measures. The state of infrastructure is poor and it is not feasible to ignore infrastructure as a key concern for the municipality and for Lalitpur Ward 12. In relation to urban infrastructure, the above mentioned key

respondents speak of the necessity of a strategic plan for environmental preservation (green space, open spaces, solid waste management and rainwater harvesting). They frequently mention better roads, cleaner streets, sewage systems, drains and proper drinking water as areas for concern. Key informants highlight the types of support needed for these changes to take place in the ward (technical, financial, political). Financially, the ward has a budget of 10 million rupees (approximately £75,000) annually for local development. It was not clear how the money is being utilised.

In Lalitpur Ward 12, there are international and national NGOs working in disaster preparedness. The respondents specifically mention Oxfam, UNICEF, the Nepal Red Cross and NSET.

> "Many donors are here… Community people are used, manipulated by the government, NGOs, INGOs. Grassroots people are treated poorly… They [the government, NGOs INGOs] think we should be in their pockets [and do what they tell us to do]."

> *Lalitpur Ward 12 DMC member, female*

The interviewee explains that the people in the ward are not consulted before initiatives start, the government/NGOs/INGOs introduce a new initiative and expect the people to be grateful. The DMC give an example of how an organisation recently bypassed the Ward and the DMC. A memorandum was created between the organisation and the Ward 12 Disaster Risk Reduction Committee (also known as the Ward Disaster Management Committee). The organisation subsequently bypassed the Ward DMC, implementing the project and training programme without engaging with the Ward 12 Disaster Management Committee. In this example, the Ward DMC feels they were not respected by the NGO and their role in the community is undermined by the way the NGO engaged with the community.

120

Community members are aware of DRR because of the significance put on DRR by the INGOs and NGOs. The informants would like more hazards awareness raising programs for earthquakes, fires and flood (the last two hazards are considered by the interviewees as more regular occurring). The informants state that the communities should be prepared for a disaster, people are aware of the risks but they need to be more prepared. The informants state they need more technical training from the government or INGOs/NGOs on topics such as vulnerability and capacity training, mason training for EQ resistant houses, and training for women regarding how to build EQ resistant homes. The DMC members express their desire for an additional quantity of tools and materials to be allocated to the communities including 'Go Bags' (for earthquake response) and resources that can be continued to be utilised as demonstration tools to community members after an eternally funded DRR project ends. An issue for INGOs/NGOs and communities is how to train larger numbers of community members in DRR techniques, as well as how to increase the scale and impact of the training programmes.

The relationship between government on a municipal and ward level is evolving and the relationship between government and the community is also evolving. The community members are keen to have a more active and influential role in local development. The disaster management committee on the ward level in Lalitpur is learning that they provide a needed and valued service within the community. Awareness raising about disaster risk reduction tools is welcomed by the community as is awareness about other unrelated topics such as health and cancer screening. The women's organisations are being asked by the municipality and ward level government to take on ancillary roles to their organizational mandate to support DRR

efforts. This work increases their workload but also increases their visibility in the community.

5.4.2 Kirtipur Ward 9 key informants' views on governance

The role of the municipal government is to support social, cultural, historical, education, health and environmental development according to the municipal representative. The municipality of Kirtipur has developed a vision for growth, it aims to make education a priority and to attract tourists. The plan has been developed with support from the German Agency for Technical Cooperation, GTZ. Kirtipur has received technical and financial support in the fields of earthquake management, disaster risk reduction, solid waste management, environment and urban development from external sources, JICA, UNDP, Oxfam and GTZ were specifically mentioned. This level of engagement is difficult to reconcile with my fieldwork diary entry which comments on the level of inactivity:

> "There are no signs of computers in municipal and ward offices. In the municipality, silence, there was paper strewn everywhere. Everything is done by hand, documents with numerous signatures. There are few documents in the ward office. The furniture consists of a desk, table, four chairs and a bench. Extremely quiet."

Kirtipur Ward 9 had been a village for over 50 years before it became a Kirtipur municipality ward in 1997. The Ward Secretary proposes:

> "The Village Development Council had more control, authority and bigger annual budget than the ward does now."

The Ward Secretary continued to say that the VDC in Kathmandu Valley had been more autonomous and represented the interests of the community more effectively than a present day ward in Kathmandu Valley because it had the authority and control. Other respondents comment on the role of the ward in local community development:

"The municipality links directly with people…it does not work through the ward level. The ward is very important for community development."

Kirtipur Businessman, age 45

"We need elections to make a change. There are no elected bodies… It is hard for the ward to work on infrastructure projects; we do not have the funding to do this. We have a community meeting to conduct strategic planning. The ward assembly is comprised of the ward secretary, political leaders, citizens, and civil society. There are 25 – 30 people."

Kirtipur Ward 9 government official, male, age 60

"Government structures are new, not really working for the people. [On the other side], people want to earn money and are not willing to engage [with the government]."

Housewife, age 33

The municipality has a vision for development but is attempting to implement it without utilising the next lower level of government, the ward, which is closest to the people. They appear to be bypassing the ward level management. The community members want the ward level to be empowered, to represent their interests to the municipality and to participate in the development of the community. There are issues with the municipality not fully engaging with its people as well as issues with residents who are struggling to make a livelihood and are leaving the government to do what it thinks is appropriate.

The municipality states that there are many collaborative projects with civil society. The Ward Secretary could not answer questions on examples of collaboration between the public sector, private and community in Ward 9 because in his words, "I have only been in the job for two years". During my walks through Ward 9 and other wards in Kirtipur, promotional signs of INGOs highlighting their activities in the community are visible. This view is from a ward official:

> "There are no donors here, they go directly into the community. For example, a national NGO is working on earthquake awareness training. They should have worked through the ward so that I could have helped in communication, dissemination of information."

Kirtipur Ward 9 government official, male, age 60

It is unclear why the NGOs are not working in partnership with the ward level. The respondents highlighted the fact that many people have been trained in DRR activities including light search and rescue and fire fighting by INGOs and NGOs. People have been trained but governmental DRR structures (municipal disaster management committees and ward level disaster management committees) are not in place.

> "Ward level disaster risk reduction committees are not active yet. The municipality should also train masons on earthquake resistant methods."

Kirtipur Businessman, age 45

> "Proper management of buildings is needed for earthquakes. I continuously request the municipality to enforce the National Building Code."

NGO worker, male, age 45

The capacity of individuals to function in the response stage of a disaster is being addressed by INGOs and NGOs but initiatives to prepare for a disaster are not being institutionalised by the government. The public sector is not enforcing the national building code in relation to the construction of earthquake resistant buildings and the municipality is not establishing disaster risk reduction and management structures which would be responsible for managing the process long term.

A businessman gives an example of a new community based organisation for solid waste management. It is a pilot project in which the Department of Urban Development and Buildings has given seven million rupees (£48,000 pounds, July 2013) for phase one of an environmental project focused on collecting solid waste,

and making organic fertilizer. This pilot project is for four Kirtipur wards (Wards 9 -

12) and a new community based organisation has been established, "Environment

conservation for the society" to manage the initiative. The main caveat is that the

community must find funds for the long-term development of this solid waste

management system.

Key informants respond to what changes they would like to see in the ward for it to be

a better place to live. The Ward secretary proposes that community awareness has

increased on disaster risk reduction and infrastructure issues and now they need to

move forward as a community.

 "Cleanliness, clean water and access to electricity, a community house."

Representative of Women's group 2

"We need better access to water and electricity. The construction of a home
for the elderly is needed."

Kirtipur Ward 9 Elder

"It is difficult in Kirtipur because of the lack of water and electricity. The
buildings are not earthquake safe."

Migrant, male, age 20

Key informants highlight the types of support needed for these changes to take place

in the ward (technical, financial, political). The ward has a limited budget of 50,000

rupees annually (approximately £7,100) to invest in the community. This is less than

a tenth of the £75,000 budget of Lalitpur Ward 12. The government is increasingly

aware of the need to engage with people and community groups to achieve its goals,

for example the newly formed community group receiving government funds to pilot

test a solid waste management scheme for several wards. The governance situation is

fragmented, the municipality does not engage effectively with the ward, the INGOs and NGOs do not engage with the ward, and the ward is trying to represent the interests of its residents to the municipality.

5.4.3   Disconnect within the government and with the residents

Alexander (2012, 2) comments on the term 'governance':

> "In reality it should describe a process of consensus building and participatory democracy that represents the best way to ensure community resilience in the face of disaster risk."

The situation in the fieldwork communities differs from Alexander's view of governance. There is a disconnect between what the municipality is capable of doing for its residents and the expectations of community members. Issues of lack of control, sources of power, budgets, accountability and representation of interests emerged in both fieldwork communities. Neither the government nor the residents are engaging the other as a partner. The municipality has the power from the central government and is not elected, therefore its responsibility and accountability is to the central government and not to the people in the municipality. Historically, governance (proper) has not been an issue. The king was responsible for his subjects. Now people need to understand what their role is in electing officials who can take proper action and how to hold government officials accountable. People's belief in politicians is evaporating due to their inability to lead Nepal in a positive way. The reality in the communities is increasingly more difficult than it was 10 year ago in terms of infrastructure (water and electricity), and the reliance on remittances is increasing.

The communities are struggling to understand and are frustrated with the evolving role of government. The municipality is bypassing the lowest level of government,

the ward, when decisions are made and activities are being implemented in the communities. The ward level would appreciate more influence; they are striving to represent the views of their inhabitants. The ward level is uncomfortable that NGOs work directly with the community and not through the ward level. Both wards commented on this. When this situation occurs, the ward leaders have said there is no NGO activity in my ward, what they mean, is the NGO or INGO did not work through them. Different levels of government are beginning to explore their role and limits of power and influence. The ward level is closest to the people and it is most aware of the issues, strengths and needs of the community members. It represents the interests of residents to the municipality, in a way it has a lobbying role.   In this respect, the VDC level of the rural areas is different to the ward level of the urban area. The VDC has more power and autonomy to act.

In my fieldwork diary, I wrote:

> "I have learnt about the necessity of good governance (and what detrimental impact minimal governance has on the lives of its citizens) and the necessity of a functioning civil society. It is difficult to talk about community resilience if individuals are struggling with their own levels of resilience due to lack of infrastructure."

In the fieldwork sites, there is a government gap and a community gap that needs to be filled and strengthened. Central government has power and the ward, representing people and possessing local knowledge, struggles to influence the municipality and governmental ministries. The residents are learning though if they do not request, demand changes and improvements, the situation may not change for the better. The civil society is starting to emerge in the form of Disaster Management Committee (Lalitpur), women's organisations in both wards, youth groups in both wards and the new NGO for solid waste management in Kirtipur. Donors, INGOs and NGOs are

evident in both communities, it is unclear how well they coordinate and communicate between each other and with the government structures in place (municipal and ward level). The private sector is noticeably absent in discussion about local development. They have not played a visible role thus far. The UNDP (2004) stresses that short term technical solutions (legislation and building codes) for DRR are necessary but the more important issue is long-term institutional development on a local level which requires addressing larger governance issues regarding the distribution and decentralisation of power, structures of decision-making and accountability, and participation of communities in governance as has been also noted by the IPCC (2012). The interviewees from the fieldwork communities voiced similar views.

5.5   Summary

This chapter focuses on the role of governance in relation to disasters and to community resilience. Governance needs to be contextualised and Nepal is in a difficult situation due to exposure to natural hazards, its contemporary politics, deteriorating economic condition and reliance on remittances. Raising resilience in this context is necessary yet difficult. Grindle (2007) discusses the concept of 'good enough governance'. This may be a relevant aspiration for Nepal. A number of aspects of governance are important for disaster management and community resilience. Given the reality where the central caretaker government does not allow elections of mayors, there should be efforts for the enhancement of relationships between the various layers of central government, particularly between the municipality and its lower administrative level, the ward. If the municipal level and ward work together, listen and accommodate the views of residents and ensure external support builds elements of institutional capacity within the government and

in civil society these will be useful elements of 'good enough governance' in urban Nepal in relation to disaster risk reduction.

Sensitivity to context (Kyazze et al, 2012; Rigg, 2012; Pretty, 2007; UNDP, 2004) is an important concept that is beginning to be addressed in the urban setting. The INGOs and NGOs are increasingly focusing their efforts on building cohesion within communities and the capacity of ward level urban communities to prepare and respond to a natural hazard, specifically an earthquake. Disaster risk management in the urban context is more difficult to achieve than in the rural context, engagement with community members needs to be made in the context of everyday lives, people's livelihood strategies, where they use their time and what they consider to be their community. Donors need to contextualise the subject of DRR into people's daily lives (Kyazze et al, 2012). Livelihoods are the most important aspect in people's lives and INGOs interviewed propose DRM initiatives are best received by urban communities when linked with livelihoods or everyday hazards such as fire. In the Nepali urban context, where there is a lack of government capacity and the subsequent creation of a government gap in the urban area, efforts need to be made to build capacity at the local level – both at the ward level and through community level structures.

In Nepal, there is rapid urbanisation, more people are becoming more vulnerable to hazards in Kathmandu Valley due to poor infrastructure (lack of water, inconsistent access to electricity, poor quality roads). Bad governance is more immediately and keenly felt by the urban communities due to reliance on physical infrastructure. The ward level is the least prepared governmental level to face a disaster. The government needs to ensure its DRR governmental structures are in place, training community members in DRR roles is worthwhile but if the government cannot fulfil

its role, people can only do so much. Wilson (2012b) questions whether, if the central government is weak, we can only focus on preserving levels of resilience rather than increasing resilience. Without good governance, it is difficult to have good levels of resilience; community resilience can only reach a certain level before it is inhibited. Without a functioning government, the urban setting struggles to have resilience. The power disconnect between the national and local level has negative ramifications for building resilience when the ward level has the knowledge but not the tools to implement strategies for DRR and community resilience. Central government could be empowering the local level to build resilience but a collaborative approach with civil society and the private sector is needed.

The central government should be empowering local level government to build resilience (Malalgoda et al, 2013; UNDP, 2004). Governments cannot increase resilience, they can create the framework in which community resilience can be produced and be enhanced. Wilson (2012c) proposes governments cannot produce resilience but they can inhibit it. Wilson (2012c, 2) also raises relevant governance questions, "Is it possible for state policy to raise resilience of communities, …and how can resilience at community level be best managed at global level?" These questions are relevant for consideration in Nepal and countries that are attempting to address issues of resilience in relation to disaster risk reduction and climate change adaptation. There are no clear answers but they do need to be considered when discussing the concept of resilience, role of governance and attempting to increase resilience. Without a functioning government, the urban setting struggles, dwellers are heavily reliant on the infrastructure and services the government is expected to supply. In the urban areas, the issue of governance becomes important, the links

established between government levels and civil society and the private sector are essential to a functioning urban setting.

Stakeholders interviewed and the academic literature (Dodman et al, 2013; Valdes et al, 2012) propose the tangible efforts to improve resilience will be made on a local, community level. Good central governance is needed to create the climate in which local governance can function properly. All attempts should be made to build the capacity of the communities to help themselves in the event of a natural hazard and the likely event of a full-scale disaster if an earthquake does hit the Kathmandu Valley with local government support. Local communities nearly always constitute the first line of defence in building resilience; they have the capacities to address hazards if they are empowered with adequate resources (Gaillard, 2010; Tomlinson, 2010) from the central government and external sources.

The next chapter focuses on the second key topic emerging from the thesis - everyday geographies and the relationship between livelihood strategies and cultural and social aspects of resilience in relation to disaster risk reduction. It also explores views of how community resilience can be enhanced.

Chapter 6 Everyday geographies of community resilience

"How much longer can I go on?

In my tattered coat and patched-up jacket,

Holding together heaven and hell?

Tell me, oh respected friend,

With such an evening in my arms,

Should I earn my daily bread?

Or should I write a poem?" - Bishwabimohan Shreshtha (1987).

6.1   Introduction

An earthquake would cause devastation in Nepal. If a 7.0 magnitude earthquake hit Kathmandu Valley, it would kill an estimated 40,000 people, severely injure 100,000 and displace 1 million people (Government of Nepal, Ministry of Home Affairs, 2011). It is within this context, that community resilience to disasters is being researched and disaster risk reduction efforts by NGOs, INGOs, donors and the Nepali government are being implemented.

In this chapter, the role of the everyday and the context in which Lalitpur and Kirtipur residents view their lives, their priorities and views on earthquakes are presented. Community members explain whom they include in their support systems and how social capital can be understood in the Nepali context. The chapter contains discussion concerning if and how to increase community resilience and what elements are needed to increase resilience. Lastly, two community resilience models are utilised to assess resilience levels of the two fieldwork sites. This chapter addresses the following research questions, 'How is the concept of resilience understood by community members at the local level; and what, in local terms, are the characteristics

or components of resilience?' as well as 'Can resilience be enhanced or supported through external intervention? And if so, what form might these interventions take?'.

6.2 Everyday geographies and struggles

In order to understand community resilience and people's views of earthquakes and natural hazards, it is valuable to begin by understanding the context in which people live and on what basis people make decisions (Rigg, 2007). This also extends beyond appreciating how hazard risk relate to, and is situated within, the wider risk context and people's everyday livelihood challenges. To understand resilience, it is critical to understand prevailing cultural norms (Davidson, 2010) and to understand the links between cultural norms and people's decision making (Lavers, 2007; Rigg, 2007). Community resilience is situated in the relations that structure and govern individuals and society. Rigg (2012, 5) highlights the: "power of individual agency", "the mostly poor and generally powerless people... have more of a hold over their lives than their depiction as marginalized and socially excluded, and beholden to rich classes and powerful states, permits". Community resilience provides the opportunity to understand how the individual and the relationship with society influences decision making about everyday events and struggles and the hazards that can occur infrequently. The concept of everyday agency allows us to consider how the majority of the world who are not in power and are not powerful behave in their everyday lives and why (Rival, 2009; Hobson and Seabrooke, 2007).

Blaikie et al (2000, xi) refer to the struggles of poor people in Nepal who survive under "conditions not of their own choosing" but in those conditions established by a complex set of factors – economic, social and political. Few of the poor are able to move beyond decision-making and strategies for survival and the struggle to ensure the fulfilment of basic needs. This focus on everyday needs and the threats associated

with daily life are more relevant to people than risks associated with hazards that have low probability (Buckle et al, 2003a). People often also chose to utilise their resources in ways that may not help them to be disaster resilient (Ibid) such as creating additional housing in existing buildings that are already vulnerable to earthquakes. The current situation in Nepal is difficult, from my fieldwork, it becomes apparent that people are uncertain of all the changes occurring and people have short term planning periods. They focus on the immediate future.

6.2.1 Livelihoods

Everyday life is centred on livelihoods. The concept of "sustainable livelihoods" relates to the poor – their wellbeing, opportunities, capabilities, resilience, and resource bases comprising various assets (DFID, 2011; Chambers and Conway, 1991). Resilient communities are characterised by a relatively equitable distribution of wealth and livelihood assets in the community; livelihood diversification at household and community level and fewer people engaged in unsafe livelihoods (Twigg, 2007). Sustainable livelihoods and resilient communities to natural hazards are interrelated concepts on a local level. The everyday focus on livelihoods does not allow people to focus on the long term and disaster events that may arise. Everyday economic uncertainly and economic opportunities are more important for people than environmental risk and do not justify focusing and preparing for an unlikely disaster (Eakin, 2005; Wisner et al, 2004). In Nepal, Oven (2009, 147) found that the "day to day livelihood insecurity" was more important than natural hazards to the communities she engaged with. From my research, I find that people focus on the immediate future, their livelihood and immediate needs. The everyday struggles absorb all of their time and energy. As one community member in Lalitpur explains:

"People do not worry about earthquakes. People worry how to make money to buy essentials such as gasoline. People had land on which to grow food before, now they are very vulnerable."

Songwriter and Folksinger, male, age 40

In Lalitpur Ward 12, I ask the copper craftsmen questions about their livelihood strategies. They state the work is "day to day", they earn enough money today to survive until tomorrow. The Lalitpur Copper Businessman comments that livelihoods are "self sustaining, short-term [it is hard for people to survive]". The UNDP proposes that access to predictable and higher levels of income can help to build resilience to disaster risk. According to the UNDP (2004, 60):

> "Little is known of the detailed interaction of multiple hazards with livelihoods and coping strategies in cities. For individuals caught up in the immediate concerns of daily survival, disaster risk management is often not a priority."

The urban setting in Nepal is difficult in part because it is cash based (Kyazze et al, 2012). People must earn money in order to purchase essentials for their family. During my interview with the international representative of INGO 4, the following comment is made in relation to disaster risk reduction projects. "If we cannot better livelihoods then we should at least help sustain them… livelihoods is a daily struggle in urban areas. Livelihoods is key for people". The coordinator of INGO 1 discusses the role of disaster risk reduction efforts and explains that above all, "communities want increased economic stability, communities cannot focus on DRR if they do not have livelihoods". As a Nepali respondent explains to USAID (2011, 5) "the mentality is to survive, not to plan ahead". With high levels of poverty, providing food for families and maintaining good health is the primary focus of many respondents to USAID questioning and not considering a disaster that may occur at

135

some point in the future. The everyday struggles and immediate focus on livelihoods could be considered as an entry point for building resilient communities.

6.2.2 Integration of DRR interventions into the everyday context

Disasters are often viewed as separate from every daylife but they can be viewed as extensions of everyday hardships (Gaillard, 2007). I am told in Lalitpur by the Disaster Risk Reduction Committee that men are "too busy earning money" to participate in awareness raising training programmes but some are willing to send their wives who subsequently report findings to their husbands. The national representative of INGO 3 comments:

> "Urban context is harder to work in, women do not have time! The livelihood aspect seems to be a good hook to get to work with women. People do not have time to talk, it is difficult to get participants for disaster risk reduction training events, and everyone is working hard to have a livelihood."

INGO 4 has learnt through the implementation of its urban projects in the Kathmandu Valley that "People do not have time to engage in disaster risk reduction projects, they need to earn a daily livelihood". During an informal discussion with a donor, the representative commented that in Nepal people have agency and the focus on livelihoods colours their views on life, therefore it is essential to incorporate DRR within the everyday issues of people's lives. It is important to understand that in order for DRR interventions to be effective there is a relationship to livelihoods. How best to do this is unclear and the INGOs are investigating how best to combine a focus on livelihoods and DRR.

A recent USAID (2011, 5) report suggests that although disaster risk awareness is increasing on a community level, it is "low on the priority list compared to other challenges in Nepal". These other challenges include insufficient access to water,

irregular access to electricity, pollution, and sustainable livelihoods. Lavers (2007, 3) suggests, "What, in the view of outsiders, is unquestionably of high priority, may not figure in the goals of residents of a particular community, and indeed may be subservient to what may seem trivial or irrelevant to an outsider". At the Lalitpur Sub-Metropolitan City, this reflection on priorities was made:

> "There are not many disasters now, only earthquakes and fires. The Sub Municipality has many responsibilities; DRR is low on the Sub Municipality's agenda, there are other priorities. There is a need to integrate DRR into other relevant issues."

> *Lalitpur Sub-Metropolitan City government official, age 40*

The Lalitpur Sub-Metropolitan City is focusing on infrastructure projects such as road construction and sewage management that meet the urgent needs of people today. It is essential that any intervention to build community resilience to disasters include a comprehensive consultation with all relevant community stakeholders and other relevant individuals to understand their priorities and goals so that a more complete understanding of the environment can be made. Lavers (2007, 29) comments on the role of development:

> "Whilst paternalistic intervention on behalf of falsely conscious 'beneficiaries' does have the potential to improve the quality of their lives, this is at the same time a clear restriction of their freedom to think and to choose for themselves... The ideal role of development must be to create spaces in which people are supported and have access to knowledge."

It is apparent in Lalitpur and Kirtipur that the distinction between 'development' and 'risk reduction' in urban areas is not clear. Development initiatives focus on livelihoods and sustainable development while DRR initiatives need to address livelihoods in order to be effective. According to Dodman and Mitlin (2011), interventions to strengthen livelihoods and to improve the provision of basic services

make significant contributions to the abilities of individuals, households and communities to weather shocks and stresses of various kinds. There is not a choice between the everyday concerns, livelihoods or disaster preparedness. People will always chose livelihoods and living day-to-day rather than preparing for some unknown, unforeseen event in the future. Interventions could consider this context of everyday lives and plan accordingly.

6.3   Social and cultural aspects influence earthquake preparedness

"Things take on different meanings because of context. Not just the thing itself, but its history and memories" (Pretty 2007, 219). The specific context and the accompanying social and cultural aspects are valuable to consider when discussing the concept of community resilience and disaster preparedness because the concepts are intertwined. To date, there has been little research focusing on specific aspects of culture and its impact on the individual, family or community and its adaptation to or coping mechanisms to significant stressors such as poverty, war or disasters (Fernando, 2012). Fernando's examination of the literature revealed only 6 empirical studies on the topic of culture and community resilience in the face of traumatic stress including Agani and Landau's (2010) work in Kosovo with families and communities, Punamaki et al (2001) who found that being politically active during conflict lead to greater resilience in Palestianian youth, and Utsey et al (2008) who found that religious beliefs and family are important for resilience building to stressful life events and race-related stress in African Americans. More empirical research is needed to build on the role of social and cultural implications for community resilience to natural hazards and to earthquakes specifically. In the Nepali context, Bista (1991, 8) writes:

"A great majority of the [Nepali] critics like to focus on politico-economic aspects of the society for every evil of Nepal. Rarely do they look into the socio-cultural and religious values they have imposed upon the national society."

There have been many political changes in Nepal, the type of government has been changing, the political processes continue to evolve and opportunities have been squandered (Shakya, 2009). Economically, the situation is very difficult for most of the population (Nepal is in the bottom most 10% of the world's poorest countries in terms of GDP per capita - 2012) (World Bank, 2013d). Politics and economics are valuable to consider in Nepal but social and cultural aspects of society play a vital role in explaining why people behave in the way they do. The caste system has led to a stifling of the economy because it has imposed a division of labour that is strictly enforced (Shakya, 2009). Seddon (1987) believes that the structure of class relations in Nepal and the social discrimination on the basis of caste, ethnic and gender differences plays a significant role in perpetuating social inequality in Nepal. Jamil and Dangal (2009) discuss how socio-cultural values in Nepali society reflect a strong hierarchical tradition, caste orientation, differentiated rank and status, unequal distribution of privileges and amenities based on family and social backgrounds and fatalism. The details can be found in Table 6.1. Decisions are taken on the basis of informal connections and close bonds rather than by formal rules and regulations. This is reinforced by the existing power structure in society where those in the higher castes make decisions for others. The caste system with its rigid structure and inability to move away from prescribed roles may impact community resilience to an earthquake in a negative way by inhibiting people's actions.

Table 6.1 Dominant socio-cultural values in Nepal as stated by Nepali bureaucrats: percentage who agreed completely or partly (n 86)

	Those who agreed completely or partly (%)
Nepalese society is based on a hierarchy and caste system.	94
People higher up in the social hierarchy enjoy more privileges in socio-economic and political matters than those lower down the hierarchy.	94
Nepalese society is a patriarchal one, where men are more privileged than women.	93
Nepalese people believe in fate.	90
There is a common feeling among the Nepalese that the country is ruled by those who have the grace of God.	52

(Source: Jamil and Dangal 2009, 202)

An informant at a national NGO states that relationships, hierarchy, caste and trust are the most important factors in Nepali culture. Community cohesion is not just the nuclear family unit; it is a larger family that includes tribe and caste. The on-going relationship with the extended family located in a village is a source of strength for people in the urban setting. He also said that Nepali culture is a hindrance to preparing for a disaster; the lack of willingness to talk about possible misfortune inhibits people from preparing for an earthquake or other disaster. The fear is that by talking about a disaster, bad luck will make it happen. This needs to be carefully

addressed because currently it is a significant barrier to disaster risk reduction effects and awareness about risk. Awareness campaigns need to be designed with an understanding of culture.

Another issue that is highlighted during the fieldwork in both urban communities is inheritance of property from the father to the male offspring. This leads to increased risk over time of buildings collapsing due to earthquakes because the buildings are increasingly divided into smaller units and are built to be taller and more narrow. The photograph in Figure 6.1 shows this issue in Lalitpur; notice the half torn-away long window in the central right side of the image. The photograph in Figure 6.2 shows the same situation in Kirtipur Ward 9.

Figure 6.1 Impact of inheritance on building in Lalitpur Ward 12

Figure 6.2 Impact of inheritance on building in Kirtipur Ward 9

During my fieldwork two opposing views on social and cultural aspects of society are

noted:

> "Caste / class system has ingrained discrimination in Nepal. Women, dalits, minorities face social exclusion… Culturally; Nepali people are not very resilient. Cultural and social aspects are low. They think that actions do not change fate. A fatalistic attitude is in place."
>
> *INGO 1 Coordinator*
>
> "We have social, cultural and political problems that do not allow us to go forward to be earthquake resisitant."
>
> *Senior official at a National NGO*

In contrast:

> "Our culture makes people to help others in difficult times. Due to our castes, ethnic groups and religion, people will work together."

Lalitpur Sub-Metropolitan City government official, age 40

I worked exclusively in two Newari urban communities that are homogeneous in their ethnic and caste composition. According to Nepali (2008, 32), "Newars are self-contained, self-sufficient and self-reliant community that has promoted communal feeling, linguistically, religiously and even politically". From my research, I find the Newars to be proud of their history, culture and they often highlight their skills as businessmen. Their strong and close-knit communities will be an asset in the aftermath of a disaster. The Newari communities are strong in terms of social cohesion but they are very homogenous so it maybe difficult to accommodate new views and insights on DRR. The mechanism through which social and culture influences operate in Nepal is contradictory in terms of its impact on DRR and community resilience. The caste system and ethic groups give the Newari people strength and disadvantage simultaneously.

6.3.1   Local understanding of earthquakes

During the fieldwork in Lalitpur Ward 12 and Kirtipur Ward 9, as part of my research into community resilience in relation to earthquakes, interviewees are asked if they know what causes an earthquake to occur. In Lalitpur, several people are very well informed due to the training sessions they have participated in. They speak of the movement of tectonic plates. Some informants do not know the answer and therefore do not attempt to answer the question. When I speak to people in the street informally or to taxi drivers, they primarily speak of the role of gods and people's inability to influence the outcome. From the fieldwork, it would appear, the lower the level of formal education, the more likely the person would say, "all is in the hands of the gods" and have a fatalistic attitude (Bista, 1991). In Kirtipur, the President of one of the women's groups speaks of tectonic plate movement, as does a businessman. The

143

elder believes the monsoon season causes earthquakes. "Earthquakes usually happen during July and August and in the dry season (January)". The NGO worker stated, "Many people have wrong information about earthquakes. Some think that people are lazy so the earthquakes come". The majority of people believe that earthquakes are a concern for them and their households:

> "There are no evacuation spaces in Ward 12. There is no proper plan for evacuation. The proximity of the houses to each other is dangerous for the residents. There are no earthquake resistant buildings in the ward."
>
> *Lalitpur copper businessman, male, age 65*

In Kirtipur Ward 9, some of the interviewees express their concern about earthquakes. The women's group 1 president understood after a disaster risk reduction-training event that her house is not earthquake resistant. The representative of women's group 2 highlights the lack of sufficient open spaces in the ward and said she prays in the temples for safety in the event of an earthquake. A student who migrated to Kirtipur to study and a businessman highlight the fact that "Nepal is 11th place for earthquake vulnerability". I hear this many times from various people including NSET. The source of this statement is the United Nation Development Programme Bureau of Crisis Prevention and Recovery 2004 report "Reducing Disaster Risk: A challenge for development, A Global Report".

6.3.2   Local understanding of earthquake preparedness and sources of knowledge

In both communities, interviewees discuss how they will respond to an earthquake. Some of the respondents have experienced earthquakes, for example the male teacher in Lalitpur shouted to his wife, grandmother and daughter to go under the bed during the 2011 earthquake. They practiced the 'duck, cover and hold' exercise he had just learnt from a disaster risk reduction training event. The electrical shop owner who

had learnt about earthquakes from his grandparents, survivors of the 1934 earthquake, describes his experience:

> "I felt an earthquake last year. The building moved sideways. I shouted for everyone to get down. I put my thumbs on the floor to stop it. I am not worried about earthquakes. What will happen will happen."

Shopkeeper, male

Although the owner's response appears fatalistic, he is not preparing for an earthquake but he does have a strategy in place if the earthquake does occur; he is utilising a form of 'duck, cover and hold' that is being communicated to Nepali communities today. In Kirtipur, the president of women's group 1 said that in 2011, she stood in a door and braced herself during the earthquake when the building was moving; this approach is also communicated to communities today. The teacher in Lalitpur explains that at school they practice 'duck, cover and hold' on a monthly basis in order to reinforce the learning. As noted by the teacher, the training has been beneficial to the "children, to the school as well as to the community" because the children educate their parents and other family members. Children are effective in disseminating knowledge. A person I interviewed in Kirtipur echoed the comment from the Lalitpur teacher:

> "My daughter has been able to teach me about earthquakes and techniques she has learnt at school. I have learnt from her homework assignments."

Kirtipur housewife, age 33

> "People are not interested to build earthquake resistant buildings. They ask about quality and are interested to purchase the best available but in the end they do not purchase good quality items. It is too costly for people."

Building material supplier, male, age 30

The comment from the building material supplier highlights that there is some awareness regarding earthquake resistant buildings. The cost of building an earthquake resistant building is approximately 7% – 15% more expensive than a building that is not earthquake resistant according to my discussions with NSET and USAID (2011). When people were asked by USAID what the additional costs would be to build an earthquake resistant building, the response was that cost would be up to 70% higher for an earthquake resistant building (USAID 2011, 5). There may be a perception that the costs are much higher to build an earthquake resistant building than is reality. This may be impacting people's willingness to build earthquake resistant buildings and could be viewed as an aspect for future communication strategies on changing people's perceptions.

There appear to be high levels of awareness of earthquakes in both Lalitpur and Kirtipur. This awareness is due to a combination of sources – training programmes implemented by INGOs and NGOs, media's involvement with awareness raising campaigns on earthquakes, contact with people who have witnessed an earthquake as well as personal experience with an earthquake. People are generally well informed due to the training events organised by donors and NSET. The trained are willing and actively impart their knowledge within their community. The media (television, radio, newspapers, and billboard signs in Lalitpur) have also played a significant role in raising awareness regarding necessity to go to open spaces, or the use of 'duck, cover and hold" if indoors according to my interviews in the communities. The media have also discussed necessity of evacuation plans for families. Appendix 4 has a sample English language newspaper article about earthquake resistant construction. Those individuals who have contact with survivors of the 1934 earthquake grew up with the

stories and can recite what to do. The comments below are typical of responses in relation to awareness raising and sources:

> "It would be good to be under a table or outside. The training events have reduced earthquake risk. I learnt what to do before, during and after an event."

> *Representative of Women group 2*

> "The media says, 'Do not panic', 'Be in a safe place such as a doorway or near internal walls, under the bed'. I have received this information from newspapers and pamphlets."

> *Youth group member, male, age 20*

> "I know to slowly leave the house. Take a go bag. I learnt from the radio program to make others aware and to help myself first and others afterwards. The media has a great role to play in creating awareness."

> *Migrant, student, male, age 20*

During my formal and informal discussions with people, these are some of the answers about planning and preparation for earthquakes:

- "Why plan? Our fate is with God."

- (Laughing) "Plan? We have no control; it is with (pointing upwards) God's will."

- "Go bag? (Laughing) No!"

- "Since there is no collective memory of an earthquake, no stories are being told, people are not worried."

- "People hate to talk about misfortune. If you talk about disaster, it brings bad luck."

- "Kirtipur was built on a rock, so it is safe. We have withstood earthquakes and will withstand earthquakes in the future. Last year's earthquake did not hurt us at all."

People are uncomfortable discussing unpleasant or difficult topics due to a commonly held belief and fear that bad things will happen if one talks about them. This is a complex issue based on society and fatalistic views. This can be seen in the comments above from various interviewees. It will be a long-term process to address this issue of fatalism (Bista, 1991). For example, the National Society for Earthquake Technology is attempting to address this issue by preparing placards to create awareness about earthquakes and preparedness. These positive messages highlight the necessity to be prepared, focus on earthquake resistant buildings, as well as the need to learn from the past. Figure 6.3 is a photograph of an event in January 2013 where the placards were utilised. These sample slogans are utilised during public events:

- Earthquake Preparedness: Key to Confident Future

- Be prepared first, and then wait for Earthquake

- Building Safe? Save Life and Property

- Earthquakes do not kill people unsafe buildings do

- Learn what happened in the past, be prepared for future earthquake

Figure 6.3 Earthquake awareness rally with placards

In both Lalitpur and Kirtipur, there appears to be a disjuncture between fatalism in terms of lack of preparing for an earthquake (nonstructural mitigation and building earthquake resistant buildings) and understanding and being prepared in the event of an earthquake (to 'duck cover and hold' if indoors during the earthquake and going to open spaces if outdoors during the earthquake). Respondents are not preparing for an earthquake but respondents are cognizant of how to respond effectively during the earthquake. It can be argued that the social and cultural background of the communities exposed to hazards, vulnerabilities and risks could be considered in disaster risk reduction initiatives to earthquakes. If the cultural and social setting is understood, more effective interventions can be created. The Nepali social and cultural background in combination with political and economic impediments (including the focus on the immediate future and livelihoods) impact how people decide to prepare and respond to a natural hazard.

6.4 Social Capital

The concept of social capital provides insights into the ways individuals, families and communities rally in the event of disaster (Sherrieb et al, 2010). Social capital can be observed in the interactions between individuals and among groups (Callaghan and Colton, 2008). Social capital refers to those components of social trust, norms and networks (Putnam, 1995, 1993; Coleman, 1988) that people derive from membership in different types of social collectives. Norris et al (2008) describe three elements of social capital that are relevant for community resilience:

- Social support – informal networks formed with family and friends. Creation of formal social networks that individuals have with groups and organisations.

- Social participation – occurs across organisational levels to create, maintain and alter functional and structural needs of individuals and groups.

- Community bonds – bonds are established through citizen participation in group and community activities.

Manyena (2009) suggests resilience building is a social learning process, which enables communities to strengthen their resilience to survive destabilising events. Adger et al (2005) argue that the promotion of strong local social cohesion and mechanisms for collective action have enhanced resilience. According to the UNDP (2004, 7):

> "Social capital measured by levels of trust, cooperation and reciprocity in a social group, plays the most important role in shaping actual resilience to disaster shocks and stress. Local level community response remains the most important factor enabling people to reduce and cope with the risks associated with disaster."

In western countries, the social capital resources (networks of strong and weak ties) may work to improve a community's resilience to risks and hazards. For example, Murphy comments (2007, 298) on the relationship between the public sector and different types of 'communities', "there is a complex relationship between municipalities and a plethora of communities, including neighbourhoods, families, churches, service and hobby clubs and other civil society organisations". From the fieldwork in the urban communities, this complex relationship is not very apparent. Limited numbers of community groups were interviewed; therefore it is not clear if community driven civil society organisations exist on a significant scale in the urban context of Nepal. In Nepal, "there is a complex structure of relationship, which involves deprived households with others in more privileged and powerful positions within the wider political economy" (Blaikie et al 2000, 58). Relationships are more informal in Nepal rather than being organised by a formal entity but the power structures are clear to its members in the informal relationships. Social capital has different dimensions in Nepal compared to western countries where there are many informal and formal organisations in civil society and these different dimensions will be elaborated with regards to Nepal and resilience.

6.4.1   Local understanding of social capital

Lalitpur and Kirtipur informants explain who is part of their support systems and what constitutes social capital to them. The respondents in both communities speak of the reliance on extended family and the bonds with their children. This respondent explains the structure of family:

> "Nepali people depend on their extended family and their friends. In the Newari language, there is no word for cousin; everyone is a brother or sister in the family. Extended families are very close. The family bond is strong, this makes the community strong. People are rooted to the land, festivals, and relationships to each other. This makes us strong."

Both men and women in Lalitpur Ward 12 state that their support system is their children and extended family. The copper businessman also said he relies on his neighbours in addition to his extended family. The representatives of the two women's groups said their support system is primarily their grown children and family, they do not mention the women's groups specifically. This may be due to the fact that the women's groups are organised on an extended family and neighbourhood level, therefore by mentioning their family they include members of the women's groups. The interviewees state they are proud of their cultural heritage in Lalitpur and the traditional crafts making centre for copper. They are proud of having lived in the ward for generations. The community is very supportive of its members and a strong community spirit is evident from discussions with interviewees.

In Kirtipur, a respondent expanded on the concept of social capital:

> "In the urban setting, there is not much community; there is a lack of willingness to understand others. There is no cohesion, no collective action. People are willing to give money but not their time nor energy."

Kirtipur housewife, age 33

Kirtipur Ward 9 was a village that became a municipal ward in 1997. This has led to changes on a local level. There has been new housing construction and a regular influx of students studying at Tribhuvan University. The community does not appear as cohesive as Lalitpur Ward 12. An identified need in Kirtipur Ward 9 is the development of a home for the elderly. There are struggling non-literate elderly people whose children have emigrated from Nepal. "These people need support. A facility where people can drop in and share their problems with each other", explained the Elder, age 70. Another respondent, a representative of Women's group 2 spoke of

the belief that international migration has created an issue for her. Some of her children and their spouses have migrated to the UK and she does not want more members of her family to migrate. She has told her remaining adult children in Kirtipur to stay so that they will take care of her in her old age. The remittances sent from children abroad provide increased levels of economic security but can create other issues for the family members who remain in the community.

Alexander discusses resilience in different scales and how they impact upon each other, (2013, 1268):

> "It does appear that lack of resilience at one level (from the individual to the world) can undermine resilience at other levels, but it is not easy to scale up psychological resilience to the various social levels, especially community resilience. In synthesis, community and societal resilience do not exactly amount to the sum of people's inner resistance."

It could be argued that individuals and families in Nepal are very resilient to a disaster – they have on-going exposure and coping strategies to intermittent electricity, on-going severe water shortages. They are self-sufficient. An interviewee explained it in this manner:

> "If you have a gas cylinder, 7,000 litre tank of water and a stock pile of food (primarily beaten rice called *czura* in Nepali and *buza* in Newari), then you are prepared for a disaster. Most households will have this stockpile, otherwise it is bad luck. This is a security system for people."
>
> *Songwriter and folk singer, male, age 40*

This does not signify that there are high levels of community resilience in the Nepali urban context. The urban communities have minimal reliance on the government to provide services, the residents do not expect much from the government according to interviews. They strive to meet their needs within their extended family, caste and ethic group.

6.4.2 Emerging sources of social capital

Civil activism is evolving on a grass roots level; groups are emerging in both urban fieldwork locations to support an emerging civil society. The role of women in disaster risk reduction awareness raising programs (Mehta, 2009; Fordham, 2003) for earthquakes and fire is significant and women are viewed as agents of change (Yonder et al, 2009). As mentioned in Chapter 4, there are several women's groups that originated to serve as micro group lending schemes. Women's groups are a new form of social capital and community formation in both fieldwork communities. Women are the "key people" according to Lalitpur government officials for DRR activities. Women are key informants and agents of change in the community; they disseminate knowledge throughout the community and also with children and family members. Men "keep it" (the information), this was also the view of an NSET official who said they have found women to be more effective than men in terms of disseminating knowledge into the community. Women are also building homes if the husbands are economic migrants outside of Nepal, so sensitising women to earthquake resistant construction and mitigation practices is a very effective long-term strategy to build resilience. Women's groups in both fieldwork sites appear to be very strong and increasingly serve different and varied roles in the community. The groups that have been in existence longer have taken on additional responsibility in community development functions such as organising health awareness raising lectures and also organising disaster risk reduction activities in the communities. The groups that struggle in management or institutional capacity are unable and unwilling to take on development functions for the community from my observations of the women's groups. The municipalities seem very willing to give responsibility to these organisations with no compensation. The role of women as mentioned by Fordham,

154

2009; Pearson, 2007; McEwan, 2003 and their collective activity appear to be increasingly important sources of social capital in the urban settings of Nepal.

Youth groups have also begun to emerge in both Lalitpur and Kirtipur. Representatives of youth groups in both communities were interviewed. INGOs and the NGO worker view training youth groups in disaster risk reduction and first response to disaster techniques as valuable because the youth will have many years to use the knowledge gained from the training. Youth group members also share their learning with their families, friends and the community (Mitchell et al, 2008). Youth groups (males aged 15-24) are important to train so that the youth do not "stray into drugs and alcohol" in the view of Kirtipur NGO worker. Participation in the training programmes has raised the self-esteem and value of the participants within the community. Some of the youth have emigrated and others have moved and are working in other parts of Kathmandu Valley. There has been minimal transfer of knowledge from youth trained to other community members according to the NGO worker. This is disappointing for the NGO worker and the comment is reinforced by one of the INGOs interviewed. It is unclear from the discussion why the youth groups are not successful in disseminating their knowledge to the wider community. The NGO worker learnt it is more effective long term to train women's groups rather than youth groups and this view is held by INGOs interviewed as well.

Social capital on a community level in Nepal is comprised of extended families whose networks are not local. Communities are often viewed in spatial terms: groups of people living in the same area or close to the same risks in the urban setting. Kinship based networks are very important and can extend to long distances (Agani et al, 2010) due to migration within Nepal and abroad. This displacement of people can undermine social networks and traditional safety nets that exist at the community

level (Buckle et al, 2003b). In Nepal, the extended families and emerging women's groups appear to be the main components of social capital.

6.5   Donor driven community development projects

The historical context of donor supported community development projects highlights the difficult situation for donors today who are trying to support development and resilience building in Nepali communities. The foreign aid projects are not considered to be village endeavours, they belong to the foreign or outside parties according to Bista (1991). There is a problematic issue of ownership and community engagement. Historically, "civil works of benefit to the villagers were undertaken by the village members cooperatively, under the leadership of the village headman and had nothing to do with Kathmandu" (or foreigners) (Bista 1991, 143). Interviewees explained this issue in the following ways:

> "In 1950s, development works were by the community, there was no real interest by the government… Donors spoke of doings things 'for' the recipient and now 'with'. The language of donors has changed in community-based activities from 'target groups', to 'beneficiaries', to 'stakeholders' and now 'partners'… When [locally led] community development works decreased, community resilience decreased, cohesiveness disintegrated. The West destroyed the system we had in Nepal that worked, now the West wants to rebuild our society in the way we functioned before, using the language of 'community based'."

> *Community Based DRM Official from a National NGO, male*

> "Nepal is driven by the desires of the donors, not what Nepalese experts say they need. Foreigners re-invent the wheel, they remap. They should 'build on what has been done'."

> *Senior official at a National NGO*

> "Community people are used – manipulated by the government, NGOs, INGOs. Grassroots people are treated poorly. They think we should be in their pockets."

Lalitpur Ward DMC member, female

These comments illustrate the evolution of donor driven community based projects in Nepal leading to the current situation where donors are struggling to effectively engage communities in disaster resilience building activities because the communities have effectively been disempowered (Hart et al, 1997). There has been a lack of understanding and misunderstandings of how best to engage Nepali communities in their own development. There is dissatisfaction with the way in which donors formulate and implement community development initiatives, Manyena (2009, 42) proposes:

> "The ability of development and humanitarian projects to enhance institutional capacity lies in its ability to be compatible to the communities' way of working"… It might be "easier for the project to adapt to the local conditions than for the institution to adapt to the project. In the context of resilience building, adapting the project might be feasible as long as the adaptation process builds on the existing resilience."

For community development projects to be successful in Nepal, additional effort needs to be made to understand the situation of the communities before any intervention is started and to ensure there is an agreement with the community in how best to support the community in its development. This also relates to initiatives to build disaster resilient communities in Nepal.

6.5.1   Views on how to increase community resilience

From my fieldwork discussions with INGOs, NGOs and a University representative, views were expressed regarding how best to increase resilience. The answer to the question, "Can you help increase community resilience?" was generally a surprised, "Yes." by the INGOs and NGOs. There did not appear to be much discussion on whether community resilience could be increased or not. One could also consider, if the INGOs and NGOs did not believe it was feasible to increase resilience, what

would be the rationale for community resilience initiatives. There was no debate whether resilience could be increased – only how. INGOs believe it is possible to increase resilience on a community level and they are working towards this goal in their projects in Nepal. They describe below their nuanced approaches to increasing community resilience:

> "A holistic approach is needed. Economic growth is key for increasing resilience. DRR should protect livelihoods and sustain livelihoods. If we cannot build better livelihoods then we should at least help sustain them. For example, in eastern Nepal, we first had a DRR program, mitigation activities and then we realised a livelihoods and health component was needed."

> *INGO 4, International representative*

INGO 4 learnt that if DRR is not imbedded in the everyday needs and concerns of people, disaster risk reduction activities to earthquakes will not have much likelihood of being successfully implemented and sustained because it will not be relevant to people's needs. In the opinion of INGO 1, the concept of resilience for communities signifies in real terms:

> "The ability to 'prepare and respond', communities want increased economic stability, increased knowledge of risks and government resources, increased communication links with VDC and district level government."

> *INGO 1, coordinator*

The coordinator of INGO 1 believes that community resilience has a broader perspective than DRR to achieve the long-term capacity building of the community. In order to increase resilience in communities, support for communication links, training in DRR skills and financing of initiatives is needed. Challenges to enhancing resilience on a community level include lack of financial and human resources, lack of prioritisation and finally, a lack of livelihood opportunities. The national representative of INGO 5 believes that resilience is the improvement of livelihoods

158

and the building capacity of people to deal with a hazard. To increase resilience, interventions need to focus on educating people about multiple hazards, natural resource management as well as access to financial resources. In order to enhance resilience, there needs to be "favourable policies from the government otherwise the government can inhibit progress and people" according to the national representative of INGO 5. The biggest barrier to disaster resilience in Nepal, according to INGO 3, is not the community but lack of adherence to the national building code. If the government enforces the existing national building code, people would then understand that the government believes earthquakes are a serious issue and one that needs to be addressed by everyone. There is also a need to train technical people (masons, architects), the government and the community people on disaster risk reduction activities according to this interviewee:

> "Can you increase resilience? Yes, it is a process, cannot finish it over 1-3 years (the length of most development projects). Need to build on what is there in the community. New vulnerabilities show over time. Can increase awareness to disaster, drills evacuation plans, educating students and through them their families."
>
> *My counterpart at NSET, male, age 40*

Community resilience in the urban setting has different issues that could be addressed:

> "Is it possible to build resilience? Communities must act and build on it... it would be harder to build community resilience in an urban setting than in a rural setting. City life is hard. People need to earn money to live and eat, they cannot volunteer. In a rural setting, farming... is cyclical, and there is time for community activities. In urban settings, time is money. People are running after money."
>
> *University academic*

Campanella (2006) maintains that to create urban resilience in a disaster situation, strong citizen involvement at the grassroots level is essential. Dodman et al (2013) highlight actions that communities in urban settings can undertake to increase resilience to infrequently occurring disasters and to smaller disasters that occur more frequently by establishing community organisations or through partnerships between local organisations and [external] NGOs to implement small-scale infrastructure improvements that benefit the community as a whole. The Nepali government is conscious of the importance of communities in an urban context in relation to disasters. When asked if community resilience can be increased, a senior government official in Lalitpur said:

> "Definitely yes. If it [the intervention] is based on the community and they accept it, community resilience will be increased."

Lalitpur senior government official, age 60

Urban systems and cities are complex economic and social forces based on relationships (Maskrey, 1989) and understanding this complexity is essential in order to effectively engage with urban communities on the topic of community disaster resilience. The interviewees discuss several areas which are essential in order to increase community resilience to earthquakes in urban settings in the Kathmandu valley: a holistic approach to community resilience that focuses on everyday needs primarily livelihood protection or enhancement, economic stability or growth for the family, creating pathways that connect people and institutions, enhancement of social structures (such as women's groups and youth groups), building on indigenous knowledge of hazards, focus on individual and group capacity building and training in the DRR function, financing of DRR initiatives and finally enforcement of building code regulations concerning earthquake resistant buildings.

6.5.2   Social resilience

Aldrich (2012) suggests social capital can be nurtured through local initiatives and outside interventions, although there needs to be a balance of trying to build community resilience through enhanced social capital and interfering with the dynamics on a local level. This is difficult to balance. Power (Allen, 2003) structures on a local level will be unevenly distributed; some stakeholders will have more access to resources (financial, information, human) in the disaster and reconstruction stages (Wilson, 2012a). It is important to engage in communities in a careful and considered manner. The national representative of INGO 3 views resilience as a holistic approach, and an inclusive phrase to link different stakeholders together in dialogue. INGO 3 links resilience to how the individual and the community can be safe for the future through enhanced relationships and networks. INGO 3 focuses on the social aspects of a community in relation to increasing disaster resilience:

> "In order to increase resilience, [an INGO] needs to focus on social structures, relationships between community people and institutions and also compliance with the building codes."

> *INGO 3, national representative*

Folke (2006) describes the power and capacity of people to build resilience through collective action. In order to build resilience, there is a need to support local organisations (Maskrey, 1989; Murphy, 2007). Pretty (1995) suggests that community groups are very important for empowerment of communities, where people can share problems with each other, leading to cohesion and commitment. Building social capital and supporting participation by different groups and individuals into the development process of the community is vital. A national NGO

highlighted the need to focus on the existing social structure and assets of the community:

> "For resilience, need to enhance what already exists. Build upon existing resources. How to enhance resilience? Bring in [external] knowledge, how to earn more money [livelihoods] and use indigenous knowledge. Use existing 'fuel of the community' and 'light a match'. The 'fuel sources' include culture, livelihoods, agriculture, social cohesion, knowledge on how to fight against landslides… Resilience is regrowth. Need to help them so the process is enhanced. How to do things better, need to do education, awareness raising."

> *Senior official at a National NGO*

Academic research supports this view of building on the existing community resources. Landau (2007, 355) stresses that outsiders should provide the "context and skills that will allow communities to access the resilience of their ancestors and of their cultural and spiritual histories". The solutions that will be found, will be "culturally appropriate and sustainable" according to Landau (Ibid, 355). In order for INGOs and NGOs to fully engage with disaster community resilience, they could consider analysing the complexity of the situation and develop projects to fully engage with the communities, on terms that the communities can engage with. One of the INGOs stated they were pleased I would be interviewing individuals in urban communities because the INGO "did not have the time in its schedule to engage with and listen to the communities" before the project started although the INGO was implementing a donor funded project to support and increase community resilience to disasters in the urban areas. In general, the INGOs are in the early stages of working in the urban community setting and are keen to learn the views of individuals and key informants of the communities from this thesis. The INGOs have an opportunity in the urban setting in Nepal to engage with communities and learn the needs and ways of working with the communities.

6.5.3   Comparison of two models of disaster resilient communities to the fieldwork
         sites

Grindle (2007, 560) proposes that donors have begun to address the challenge of dependency by "placing more emphasis on ownership and participation by developing-country governments and citizens". In Nepal, the lack of ownership by the communities and reliance on donors is being addressed by the newly created Nepal Risk Reduction Consortium. The United Nations and Government led Nepal Risk Reduction Consortium is a unique arrangement that unites humanitarian and development partners with financial institutions in partnership with the Government of Nepal in order to reduce Nepal's vulnerability to natural disasters according to an interview with the Coordinator of Flagship 4 of the NRRC. Based on the Hyogo Framework and Nepal's National Strategy for Disaster Risk Management, the NRRC has identified five flagship priorities for sustainable disaster risk management.

Flagship 4, Community Based Disaster Risk Reduction, is led by the International Federation of Red Cross/Red Crescent Societies and the Ministry of Local Development. Flagship 4 of the NRRC aims to develop consensus among the 60 organisations involved (including Government of Nepal, Donors, INGOs NGOs and CBOs) in CBDRR across the country towards a common approach to achieve national targets and encourage greater investment for scaling up CDBRR in Nepal. The efforts by NRRC and Flagship 4 are important in developing and implementing the concept of community resilience because they are testing different conceptual and operational models of resilience in rural settings and, increasingly, in urban settings as well. There will be many lessons to be learnt from this new institutional framework implemented in Nepal. The agreed upon minimum characteristics detailed below in Table 6.2 represent an ideal disaster resilient community in Nepal.   These

characteristics are increasingly being considered as the minimum components in all Flagship 4 CBDRR activities. They were developed through a consultative process involving the Government of Nepal, INGOs, NGOs, UN, donors and Red Cross / Red Crescent movement. The next step for Flagship 4 is the possible consolidation of the characteristics and the development of indicators for each of the nine characteristics in 2013 and 2014.

Table 6.2 Flagship 4 Community Based Disaster Risk Reduction's Nine Characteristics of a Disaster Resilient Community

Flagship 4 Community Based Disaster Risk Reduction's Nine Characteristics of a Disaster Resilient Community
1. Organisational base at Village Development Committee / ward and community level
2. Access to Disaster Risk Reduction information
3. Multi-hazard risk and capacity assessments
4. Community preparedness / response teams
5. Disaster Risk Reduction / management plan at Village Development Committee / municipality level
6. Disaster Risk Reduction Funds
7. Access to community managed Disaster Risk Reduction resources
8. Local level risk / vulnerability reduction measures
9. Community based early warning systems

In addition to the current efforts being implemented in Nepal regarding disaster resilient communities, there are other models of disaster resilient communities in the academic literature. For instance, Tobin (1999) Tobin stresses that development and humanitarian interventions present opportunities to building local capacity through training, technical assistance, technology transfer, information exchange, network development and management skills and professional linkages. Chapter 2 has a detailed overview of different conceptualisations of community resilience. See Table 6.3 for Tobin's characteristics of sustainable and resilient communities in hazardous environments. This model has parallels to the findings of the fieldwork mentioned above.

Table 6.3 Characteristics of sustainable and resilience communities in hazardous environments

Characteristics of sustainable and resilient communities
1. Lowered levels of risk to all members through reduced exposure to the geophysical event
2. Reduced level of vulnerability of all members of society
3. Planning for sustainability and resilience must be ongoing
4. High level of support from responsible agencies and political leaders
5. Incorporation of partnerships and cooperation at different government levels
6. Strengthened networks for independent and interdependent segments of society
7. Planning at the appropriate scale

(Source: Tobin 1999, 14)

A comparison of Lalitpur Ward 12 and Kirtipur Ward 9 in relation to the NRRC Flagship 4 CBDRR's nine characteristics of a Disaster Resilient Community and Tobin's characteristics of a sustainable and resilient community are explained below in Table 6.4 and Table 6.5.   This exercise is not intended to promote one particular model in comparison to the other model. The exercise highlights the different lenses that can be utilised to view disaster resilient communities. This thesis does not directly address operational models of disaster resilient communities so caution could be utilised in attributing too much to this information.

Table 6.4 Comparison of Lalitpur Ward 12 and Kirtipur Ward 9 utilising Flagship 4 Community Based Disaster Risk Reduction's Nine Characteristics of a Disaster Resilient Community

Flagship 4 CBDRR Characteristics of a Disaster Resilient Community	
1. Organisation base at VDC / ward and community level	
Lalitpur Ward 12	**Kirtipur Ward 9**
Disaster Management Committee on a municipal and ward level	Disaster Management Committee on a municipal and ward level does not exist
2. Access to Disaster Risk Reduction information	
Lalitpur Ward 12	**Kirtipur Ward 9**
Coordination mechanisms for DRR information in place on a municipal and ward level	Coordination mechanisms for DRR information not visible on a municipal and ward level
3. Multi-hazard risk and capacity assessments	

Lalitpur Ward 12	Kirtipur Ward 9
Unclear if on-going, systematic, participatory, multi-hazard risk and capacity assessments are organised	Unclear if on-going, systematic, participatory, multi-hazard risk and capacity assessments are organised

4. Community preparedness / response teams	

Lalitpur Ward 12	Kirtipur Ward 9
Visible in Ward 12	Visible in Ward 9

5. Disaster Risk Reduction Plan at VDC / municipal level	

Lalitpur Ward 12	Kirtipur Ward 9
DRR Planning at municipal and ward level occurring	Unclear if DRR Planning at municipal and ward level occurring

6. Disaster Risk Reduction Funds	

Lalitpur Ward 12	Kirtipur Ward 9
No access to DRR funds noted	No access to DRR funds noted

7. Access to community managed Disaster Risk Reduction resources	

Lalitpur Ward 12	Kirtipur Ward 9
Visible with support from external sources	Visible with support from external sources

8. Local Level risk / vulnerability reduction measure	

Lalitpur Ward 12	Kirtipur Ward 9
Visible with support from external sources	Visible with support from external sources

9. Community based early warning systems	

Lalitpur Ward 12	Kirtipur Ward 9
Unclear if inclusive, community based early warning systems are integrated into government systems	Unclear if inclusive, community based early warning systems are integrated into government systems

Utilising the Flagship 4 characteristics, Lalitpur Ward 12 appears more disaster resilient due to the fact that it has created an organisational committee on a municipal and ward level to initiate discussion on DRR, there is coordination between the ward and municipal level and planning appears to be occurring. On all other characteristics, they are similar; both communities are receiving support from external sources to build the capacity of the municipalities and wards to address an earthquake and to lower the risk and vulnerability on a local level.

Table 6.5 Comparison of Lalitpur Ward 12 and Kirtipur Ward 9 utilising Tobin's characteristics of Sustainable and Resilient Communities in hazardous environments

Tobin's Sustainable and Resilient Communities	
1. Lowered levels of risk through structural or non-structural measures to result in a less hazard-prone community	

Lalitpur Ward 12	Kirtipur Ward 9
Lalitpur Sub-Metropolitan City is	Kirtipur Municipality is considering

striving to enforce the National Building Code	implementing the National Building Code in the future
2. Low vulnerability	
Lalitpur Ward 12 Inward migrants are considered vulnerable but they face the same infrastructure issues (inconsistent access to water, electrical outages, pollution, road congestion)	**Kirtipur Ward 9** Inward migrants are considered vulnerable but they face the same infrastructure issues (inconsistent access to water, electrical outages, pollution, road congestion)
3. Ongoing Planning Initiatives - Planning for sustainability and resilience must be made with community engagement	
Lalitpur Ward 12 This has started	**Kirtipur Ward 9** This is beginning to take place
4. High level of official / political support	
Lalitpur Ward 12 Political will is visible	**Kirtipur Ward 9** Political will is unclear
5. Government Partnerships	
Lalitpur Ward 12 Partnerships are beginning	**Kirtipur Ward 9** Partnerships are not visible

6. Interdependent and Independence of Social Networks	
Lalitpur Ward 12	**Kirtipur Ward 9**
Social networks are based on extended family and women's groups, there are few other examples of networks functioning	Social networks are based on extended family and women's groups, there are few other examples of networks functioning
7. Appropriate Scale of Planning	
Lalitpur Ward 12	**Kirtipur Ward 9**
Complicated due to significant power of central government yet need to work on a local level	Complicated due to significant power of central government yet need to work on a local level

Utilising Tobin's Sustainable and Resilient Characteristics, Lalitpur appears more disaster resilient because it is attempting to implement the national building code and has begun the consultative process to develop sustainable and resilient communities with systems in place. Tobin's characteristics focus more on the government's role in building the framework for sustainable and resilient communities so the efforts of the Lalitpur Sub-Metropolitan City make Lalitpur Ward 12 appear to be more resilient. Both models can be considered technocratic, they lack characteristics that can be considered the 'software of resilience', elements that have been addressed in this chapter such as social capital, cultural capital, civil society, community cohesiveness and social resilience. These are difficult concepts to measure and define on paper but nevertheless, valuable for community resilience and require further exploration.

6.6   Summary

Rival (2009, 311) describes community resilience as "politics of hope". To understand community resilience means to understand the context in which people conduct their everyday lives, struggles and sources of strength. Community resilience cannot be separated from the context of people's lives (Buckle, 2006). Individuals and families are resilient in my two fieldwork communities to everyday hazards (lack of electricity, lack of water, precarious livelihoods) but the communities are not resilient to disasters such as earthquakes. The structures, both formal (for example, DRR committees) and informal (social groups) are either not in place or do not function properly on an urban community level. It is with an understanding of the cultural, social, political, and fatalistic attitudes that community resilience could be enhanced. We need to be aware as outsiders that we do not cause further erosion of indigenous knowledge and resilience. Outside intervention could support or help create local structures for resilience building if they do not currently exist. Within the everyday geographies and livelihoods focus of people, a long-term approach to DRR could be developed. From my research, it can be argued that there is a strong link between development efforts and disaster risk reduction. This is a familiar view among researchers in the development, climate change and disaster risk reduction areas (Twigg, 2009; Schipper and Pelling, 2006; McEntire, 2004). In order to increase community resilience to disasters, donors have learnt that disaster risk reduction must be contextualised (Dodman and Mitlin, 2011), linked to everyday needs such as livelihoods and other everyday needs such as health and functioning social networks in the urban context. DRR needs to be couched in the everyday reality of the communities otherwise awareness raising about natural hazards such as earthquakes will be ignored by communities.

Social capital in the two communities is based on the extended family networks. Organisations such as women's groups and youth groups are emerging and serving a valuable role in gaining knowledge about DRR; the women's groups also disseminate knowledge on DRR. The women's groups are viewed by the central government and NGOs as significant agents of change in the local communities and this pathway could be supported. Empowering people in a manner that is relevant to the community members can enhance resilience to disasters through external intervention. Twigg (2009) suggests that capacity and coping capacity often mean the same thing as resilience in everyday usage. I found this to be true in my fieldwork sites. Resilience is not a Nepali word; the concept was often translated as 'capacity building' or 'adaptive capacity' by my key informants in the communities and by the INGOs interviewed. Twigg, (2009, 8) states, "A focus on resilience means putting greater emphasis on what communities can do for themselves and how to strengthen their capacities". Local level community response remains the most important factor enabling people to reduce the risks associated with or cope with disaster (UNDP, 2004). The development of civil society and social capital can also promote local participation, accountability and ownership. Social resources are at the foundation for resilience and recovery (Aldrich, 2012). Aldrich argues, " empirical data from disasters show that regardless of the quality of governance, different neighborhoods under the same leadership come back at different rates over the medium to long term" (Ibid, 9), this is due to social capital serving as the core engine of recovery (Ibid). In the Nepali urban context, increasing community resilience to disasters includes integrating livelihoods, disaster risk reduction activities on a community level, building the capacity of communities as well as the role of the government to enforce laws in order to increase community resilience to disasters.

Chapter 7 Conclusion

[We] "need a definition for resilience, resilience of who, to what, when? [This] need[s] context to be relevant" – Country Director of INGO (interview during fieldwork in Nepal, January 2013).

7.1 Introduction

According to the UNDP Report titled 'Reducing Disaster Risk, a Challenge for Development' (2004), Nepal is ranked 11th in the world in terms of vulnerability to earthquakes and the country has a long history of destructive earthquakes (NSET, 2012; Government of Nepal, Ministry of Home Affairs, 2011). The potential damage from an earthquake for the Kathmandu Valley is catastrophic (IRIN, 2013). It is therefore critical to understand how urban communities living in highly vulnerable geographic areas understand their own vulnerability and resilience, what scientific knowledge they use and value, how they access information, how communities can effectively build their own resilience and with support from INGOs/NGOs (Fernando, 2012; Agani et al, 2010; Rigg et al, 2008; Gaillard, 2007; Paton and Johnston, 2006).

The concept of 'resilience' has become a thread that links an increasing body of work on poverty, vulnerability and risk, especially in countries in the Global South prone to 'natural' disasters. At the World Conference on Disaster Reduction in 2005, the Hyogo Framework for Action 2005 – 2015 was presented as the strategy to build the disaster-resilience of nations and communities. Over the past decade, there has been significant debate in connection with the concept of resilience, and how it is defined (Manyena et al, 2011; Miller et al, 2010). There has also been debate concerning how resilience is utilised as a conceptual framework for disaster risk reduction. Brown (2011) indicates that there are many contradictions, confusions and mixed

173

interpretations of resilience, with the concept of resilience in policy statements often at odds with scientific understandings of resilience. Levine et al (2012) question the relevance of resilience and Bene et al (2012) question whether resilience is a new utopia or a new tyranny. According to Alexander (2013, 1271), there will be disillusionment if the "term is pushed to represent more than it can deliver, the problem lies in attempts to make resilience a full-scale paradigm, which it is not (Alexander, 2013). Donors (EU, 2013; DFID, 2011) have included resilience in their frameworks for action in developing countries without initially possessing a clear understanding of how to define resilience and how to utilise resilience in support of communities. There are many unknowns with tremendous political and monetary implications.

7.2   Thesis aims and methods

This research project seeks to contribute knowledge to the ongoing discussion surrounding the concept of community resilience. This research focuses on how two urban communities in the Kathmandu Valley view the concept of community resilience in the context of natural hazards and disaster risk reduction efforts, how this relates to donor/INGO/NGO interpretations of resilience, how academic understanding contributes to the discussion and lastly if/can resilience be enhanced. Theoretical engagement with everyday geographies, resilience research and disaster risk reduction provides the foundation for the inductive approach utilised to examine the following research questions:

1. How is the concept of resilience understood by community members at the local level; and what, in local terms, are the characteristics or components of resilience?

2. How do local, academic and practitioner understandings of resilience vary?

3. Can resilience be enhanced or supported through external intervention? And if so, what form might these interventions take?

The research drew on a range of methods including semi structured interviews, focus group discussion, fieldwork diary, participant observation, transect walks, and photographs with the aim to triangulate the findings. This qualitative research contains engagement with everyday geographies (Rigg, 2007) as well as an analysis of livelihoods (Scoones, 2009; Scoones, 1998; Chambers, 1995; Chambers and Conway, 1991) and the relationship with disaster risk reduction efforts (Alexander, 2013; Wisner et al, 2012; Birkmann, 2006; Wisner et al, 2004; Ozerdem, 2003). This has allowed me to engage with different discourses and to learn about the relationships between everyday lives, livelihoods and disaster risk reduction. I also explored the topics of social capital (Aldrich, 2012; Murphy, 2007; Coleman, 1998; Putnam 1995) and governance in the context of urban communities (Dodman et al, 2013; Valdes et al, 2012; Satterthwaite et al, 2007).

7.3   Key findings

This thesis focuses on Nepali understandings of community resilience as well as practitioner and academic understandings of resilience. When I arrived in Nepal I was uncertain if the concept of resilience had a role to play in disaster risk reduction and I was uncertain about its relevance to people. The fieldwork highlights that resilience is not a concept that is tangibly relevant to people; it does not have an immediate connection to people's lives, nevertheless, the concept is relevant and useful for practitioners who strive to build the capacity of people and communities to withstand natural hazards and possible disasters. The concept of resilience highlights the necessity to ensure all the elements of a 'system' are in place to address a crisis triggered by a natural hazard such as an earthquake. There are several scales on

which this must be done, on a community societal level, and governmental levels (ward, municipal and central government level).

The two main themes that arise from my fieldwork and discussion with INGOs, NGOs, donors and representatives of two municipalities and two specific wards are the role of governance (the role of the Nepali government and the relationship of the government to the community) and everyday geographies (livelihoods, cultural and social implications of resilience and tools to enhance community resilience). These topics relate to community resilience in diverging ways but highlight the necessity to look at community resilience in the context of where people spend their daily lives and how governance tracks through to people.

7.3.1   Definition of resilience

The definition of resilience varies from the academic context to the practitioners (INGOs and NGOs) and the local level in Nepal. 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 structures and functions."

UNISDR provides a caveat: 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 organising itself both prior to and during times of need.

Drawing on findings from my research, the informants working in community disaster resilience have two parallel views on the definition of earthquake resilience; they either refer to resilience as a systems approach with three components

(preparation, response and recovery) or alternatively; resilience is viewed as an interdisciplinary inclusive term that involves community participation and is a starting point for discussions on wider development issues. The word resilience is utilised ubiquitously by the donor and INGO community focusing on disaster risk reduction efforts in relation to natural hazards. The donors and INGOs do not fully understand how to operationalise the concept of resilience nor are the definitions clear and unified. The INGOs are learning by practice, as one interviewee explains:

> "Resilience is used to describe everything at the moment, it is in vogue. Resilience is not a useful term because a clear level of understanding of the term is needed in order to assess if a community has resilience... Need context to be relevant - resilience of who, to what, when? Retrospectively to define resilience is easier."

> *INGO 4, international representative*

Resilience is not a commonly utilised word in the Nepali language. People do not understand it and the best translation would be "ability to respond to a disaster" or to "rebuild their lives after a disaster". The INGOs introduced resilience into their work in Nepal after the Hyogo Framework for Action was developed. The INGOs and national stakeholders explain that the concept of resilience is not commonly used in Nepali. Phrases such as "sustain, capacity, collective capacity to overcome, capacity building" are utilised instead on a community level by NGOs working on community resilience projects.

I was concerned that there might be a disconnect between what the academic literature is expanding upon and reality in a developing country where the concept of resilience is being utilised. This is the case, especially when resilience is discussed in abstract terms without reference to a specific context. I was concerned that my thesis topic would not have traction in people's lives. Resilience has a role to play in

disaster risk reduction; however, my findings suggest that resilience, as a concept, can be relevant for a group or a system – a neighbourhood, a ward, a municipality and possibly a country. There are elements related to resilience that are beyond the power of an individual (governance for example) and efforts to support resilience could be on a group level.

7.3.2 Governance

Awareness of and sensitivity to context (Kyazze et al, 2012; Rigg, 2012; Pretty, 2007; UNDP, 2004) are important concepts that are beginning to be addressed in the urban setting. Cities are interconnected with rural areas via migration, economic, and employment linkages as well as food security. In Nepal, the urban and rural are closely intertwined, there is a close relationship between the people who live in urban settings and their extended families living in rural areas in Nepal. Discussions about levels of urban resilience versus rural resilience do not address the full range of issues. It is more relevant to discuss resilience within urban settings and to understand the relationship with rural communities and vice versa. In the Kathmandu Valley, the urban community is comprised of people who live in one ward but may commute as a daily labourer into another part of the city. People in cities use space differently and their concept of community may change depending on the topic being discussed (where are they located during the day versus the night) and the specific hazard.

In Nepal, there is rapid urbanisation, more people are becoming more vulnerable to hazards in Kathmandu Valley due to poor infrastructure (for example, lack of water, inconsistent access to electricity, poor quality roads). Bad governance is immediately and keenly felt by the urban communities due to reliance on physical infrastructure. This has a negative impact on community resilience levels in the urban context. The ward level is the lowest administrative unit of the government and community

178

resilience in Lalitpur and Kirtipur are considered on this level to give a physical boundary. The ward level is the least prepared governmental level to face a disaster yet efforts to deal with a disaster will be on this level. The government needs to ensure its disaster risk reduction governance structures are in place, training community members in DRR roles is worthwhile but if the government cannot fulfil its coordination role, people can only do so much. The government must establish the framework for disaster risk management for the community to be able to engage in resilience building and disaster risk management. In the fieldwork sites, there is a governance gap and a community gap that needs to be filled and strengthened. Central government has power but the disconnect between the central government and the ward who represents people impacts communities negatively. The residents are learning through experience, if they do not demand changes and improvements, the situation may not change for the better. Civil society is starting to emerge in the form of Disaster Management Committee (in Lalitpur), women's organisations in both wards, youth groups in both wards and a new NGO for solid waste management in Kirtipur. They can be community partners for the government to implement effective DRR initiatives in the ward.

The role of governance in relation to disasters and to community resilience is vital. Governance needs to be contextualised and Nepal is in a difficult situation due to exposure to natural hazards, its contemporary politics and deteriorating economic condition and reliance on remittances. Raising resilience in this context is necessary yet difficult. There should be efforts for the enhancement of relationships between the various layers of central government, particularly between the municipality and its lower administrative level, the ward, the municipal level and ward could work together, listen and accommodate the views of residents and ensure external support

builds elements of institutional capacity within the government and in civil society. These will be useful elements of 'good enough governance' (Grindle, 2007) in urban Nepal in relation to disaster risk reduction and community resilience.

Without good governance, it is difficult to have good resilience; community resilience can only go to a certain level before it is inhibited. Without a functioning government, the urban setting struggles to have resilience in Nepal. As was noted in the fieldwork, the power disconnect between the national and local level has negative ramifications for building resilience when the ward level has the knowledge but not the tools to implement strategies for DRR and community resilience. Central government could be empowering the local level to build resilience through a collaborative approach with civil society and the private sector. This research project finds the private sector to be visibly absent from engagement with the public sector and civil society. Both the stakeholders interviewed and the academic literature (Dodman et al, 2013; Valdes et al, 2012) propose the tangible efforts to improve resilience will be made on a local, community level. Good central governance is needed to create the climate in which local governance can function properly in a disaster situation. Attempts should be made to build the capacity of the communities to help themselves in the event of a natural hazard and the likely event of a full-scale disaster if an earthquake does hit the Kathmandu Valley with local government support. Local communities nearly always constitute the first line of defence in building resilience; they have the capacities to address hazards if they are empowered with adequate resources (Gaillard, 2010; Tomlinson, 2010) from the central government and external sources.

Enforcement of the National Building Code could be considered essential to increasing disaster resilience in urban settings of Nepal. From interviews it appears that the public sector does not have the institutional (technical and financial) capacity

to enforce the National Building Code. Suggestions include licensing engineers who would be required to ensure compliance with the National Building Code or putting the responsibility onto the private sector to build earthquake resistant construction. Others (the municipality representatives and a member of a disaster management committee) raise the possibility of tax reductions or subsidies to motivate people to build earthquake resistant homes. Another issue that could have implications for the construction of earthquake resistant structures is the perceived cost. There appears to be misconceptions regarding the scale of additional costs involved. A clear awareness raising campaign could be utilised to address this issue.

7.3.3   Everyday Geographies

This research contributes to current understandings of community resilience by exploring knowledge regarding how Nepali residents of two urban wards view their own levels of resilience to an earthquake hazard. Similar to Carpenter et al (2001) and Buckle (2006), these findings highlight the importance of understanding the context in which people conduct their everyday lives when trying to understand community resilience. People in Nepal are struggling with physical infrastructure (including access to water and the daily 12-hour electricity outages) and are also struggling to earn a livelihood to feed their families. Individuals and families are resilient in the two fieldwork communities to everyday hazards (lack of electricity, lack of water, precarious livelihoods) but the communities are less resilient to comparatively infrequent disasters such as earthquakes. This is valuable to consider because the concept of resilience is becoming increasingly used in disaster risk reduction discourse as well as in other settings such as climate change.   The governance structures needed to support community resilience to natural hazards, including both formal structures (for example, government created DRR committees

on a municipal and ward level) and informal structures (social groups on a community level) are either not in place or do not function properly in the case study localities.

The concept of urban community resilience is based on multi-site networks. Social capital in the two case study communities is based on extended family networks. In the event an earthquake strikes the Kathmandu Valley, people will be reliant on the government, neighbors, family and friends located in the immediate geographic area to provide support during the response phase. Extended family networks (family members located in different physical locations) will be important for the long-term recovery of the community.

This research supports the view that local level community response remains the most important factor enabling people to reduce the risks associated with or cope with disaster (UNDP, 2004). The development of civil society and social capital in the form of community groups and ward level disaster management committees can also promote local participation, accountability and ownership of DRR initiatives. Development of civil society and social capital will help to strengthen good governance of DRR and provide a partner at the community level for the government to work with. Organisations such as women's groups and youth groups are emerging and serving a valuable role in gaining knowledge about DRR; the women's groups also disseminate knowledge on DRR throughout the community but also to their children and family members. The women's groups are viewed by the central government and NGOs as significant agents of change in the local communities and this pathway should be supported based on this research. Women's groups are a relatively new form of social capital and community formation in both fieldwork communities. My findings, based on discussions at the community level and with NGOs and INGOs, agree with Mehta (2009) and Fordham (2003) regarding the

valuable role of women in disaster risk reduction awareness raising programs and with Yonder et al (2009) that women are agents of change. Women's collective activity appears to be increasingly important sources of social capital in the urban settings of Nepal.

The urban and rural contexts are different and this has implications for the implementation of earthquake risk reduction initiatives. The INGOs and NGOs are learning about the difference and are attempting to adapt to the urban context of Nepal. The INGOs and NGOs are increasingly focusing their efforts on defining a community in the urban setting, building cohesion within urban communities and the capacity of ward level urban communities to prepare and respond to a natural hazard, specifically an earthquake. Disaster risk management in the urban context is could be based on the context of everyday lives, people's livelihood strategies, where individuals use their time, what they consider to be their community and which natural hazards are most relevant to the community members.

This research shows that INGOs and NGOs through their projects need to contextualise the subject of disaster risk reduction into people's daily lives. Livelihoods are the most important aspect in people's lives and INGOs interviewed propose that earthquake risk reduction initiatives are most effectively received by urban communities when linked with livelihoods or more frequent hazards such as fire. The time constraints and livelihood priorities of urban residents make it problematic for individuals to focus on volunteering and to learn about disaster risk reduction activities. Efforts could be made to understand the local community context before any intervention is started and to ensure there is an agreement with the community regarding how best to support the community in earthquake risk reduction and how to embed this in the community's wider development. An analysis could to

be made to understand what constitutes a community to the residents, how and who is in their definition of community in order to build resilience to disaster and lastly, analysis needs to be conducted to understand from the community perspective which hazards are most critical to address. From the fieldwork conducted, an everyday hazard such as fires was mentioned as a critical risk for community members, one result could be imbedding DRR activities within an everyday hazard. Given the risk of fire in urban settings following an earthquake, fire could provide an effective entry-point for DRR activities at the community level, one result could be imbedding DRR activities within an everyday hazard. NGOs and INGOs working on DRR projects in urban settings also raised a number of practical issues including the need for longer-term projects to accommodate shorter training events spread out over a longer time frame to address urban livelihood constraints and the projects could consider paying participants (to compensate for lost wages). Practical issues such as where do people want the training activities to be held, where they work or where they live, during the day, evening or on the day of rest, need to be considered.

Empowering people in a manner that is relevant to the community members can enhance resilience to disasters through external intervention. Twigg, (2009, 8) states, "A focus on resilience means putter greater emphasis on what communities can do for themselves and how to strengthen their capacities". Outside intervention should support or help create local structures for resilience building if they do not currently exist. Within the everyday geographies and livelihoods focus of people, a long-term approach to DRR could be developed. We need to be aware as outsiders that we do not cause further erosion of indigenous knowledge and resilience. It is with an understanding of the cultural, social and fatalistic attitudes that community resilience should be enhanced. The everyday struggles and immediate focus on livelihoods

could be considered as an entry point for building resilient communities. DRR should be couched in the everyday reality of the communities otherwise awareness raising about natural hazards such as earthquakes is likely to be ignored by communities. In the urban context in Nepal, increasing community resilience to disasters includes integrating livelihoods, embedding disaster risk reduction activities on a community level and with the local government, building the capacity of communities as well as the role of the government to enforce laws in order to increase community resilience to disasters. From this research project, it can be argued that there is a strong link between development efforts and disaster risk reduction. This is a familiar view among researchers in the development, climate change and disaster risk reduction fields (Twigg, 2009; Schipper and Pelling, 2006; McEntire, 2004b). Donors and practitioners could further explore this link in order to meet more effectively the needs of the communities and to increase their disaster resilience to earthquakes.

7.4   Relevance to other settings

I am cognisant of what my research findings can allow me to say about people, places and processes outside of my research fieldwork sites because every community is different and a one-size-fits-all approach does not work. This research project, has contributed to the conceptual understandings of resilience. It is hoped that my findings will also inform practice as I look for feedback from the INGOs, NGOs and donors who are engaged in this field. The theoretical framework for this thesis is based on grounded theory and emphasises an inductive approach in contributing to the on-going debates around resilience and community resilience. However, it is important to note that I have only one voice in a larger story of resilience and community development. My voice and views are informed by the people that I interviewed and the experiences that I brought to the fieldwork and analysis stage as a

former practitioner myself. I can only make statements on the interactions I had and I take ownership for the story I am crafting through this thesis. The limitations I encountered in conducting this research include a relatively short time spent physically in Nepal and the fact that I do not possess a high degree of understanding of Nepali culture and norms. The ten-year internal armed conflict that ended only seven years ago continues to influence politics and society in ways I am not able to fully appreciate.

There are analytical generalisations that can have wider applicability though. The arguments in this thesis are relevant to other countries in the Global South. Lessons learnt are important to share and inductive reasoning is critical to understand the local reality and experiences and theoretical positions should be tested and reappraised against them (Rigg, 2012). Theory alone, cannot explain how resilience functions or why some communities express resilient behaviour while other communities lack resilience. Community resilience is related to cultural norms, social structures and governmental structures as well as how they relate to each other in a given locality. The concept of resilience highlights the necessity to ensure all the elements of a 'system' (functioning on many levels or scales) are in place to address a crisis triggered by a natural hazard. There are several scales on which this must be done. On a community level, municipal and central government level as well.

Governments cannot increase resilience but they can create the framework in which community resilience can be produced and enhanced. Wilson (2012c, 2) raises relevant governance questions, "Is it possible for state policy to raise resilience of communities, …and how can resilience at community level be best managed at global level?" These questions are relevant for consideration in countries that are attempting to address issues of resilience in relation to disaster risk reduction and climate change

adaptation. There are no clear answers but they do need to be considered when discussing the concept of resilience, role of governance and attempting to increase resilience at the community level in the context of a high magnitude, low frequency event such as an earthquake. Without a functioning government, the urban setting struggles due to dwellers reliance on the infrastructure and services the government is expected to supply. In the urban areas, government and governance becomes important, the links established between government levels and civil society and the private sector are essential to a functioning urban setting and resilience.

Understanding the context matters for resilience; resilience building is based on everyday geographies, the agency and power of the individual and the actions they take (Rigg, 2012), relationships between people, groups both formal and informal, the relationship between civil society and the government and also between different levels of the government. The dependence of the community is high on governance in the urban context in which livelihoods and DRR are also linked. The distinction between 'development' and 'risk reduction' in urban areas is not clear according to my findings and also as noted by Dodman and Mitlin (2011). The relationship between disaster risk, development shortfalls and vulnerabilities as well as the everyday risks and hazards people face create a very complex reality in cities. In order to increase community resilience to disasters, donors have learnt that disaster risk reduction must be contextualised (Ibid), linked to livelihoods and other everyday needs and concerns such as health and fires in the urban context. Interventions to strengthen livelihoods and to improve the provision of basic governmental services make significant contributions to the abilities of individuals, households and communities to weather shocks and stresses related to disasters. Satterthwaite et al (2007) also make the link between development, local governance structures and the

187

capacities and abilities of the residents to address the hazards affecting urban communities.

Several scholars (Murphy, 2007; Buckle, 2006; Wisner et al, 2004; Buckle et al, 2003b) highlight the necessity to look at the local level and what is found within people and within groups. These aspects are significant in relation to the concept of community resilience, there may be proxy tools by which we try to increase community resilience by building the capacity of individuals and groups in the community to deal with the natural hazard event. As Armitage et al (2012, 14) state, "resilience is complex, context-specific and highly dynamic". The change that will occur after a disaster will be based on the context in which it occurs - the event, the response and the recovery processes in place. Resilience can be seen after the disaster event, it cannot be fully evaluated beforehand. Resilience levels also change depending on the hazard, severity of affected event and groups. Resilience researchers could make the effort to learn from different disciplines (Levine et al, 2012), this will strengthen the resilience construct in how it can frame discussion on community resilience and attempt to increase community resilience to disasters. Community resilience can be viewed as a system, a system that can adapt to, respond and then be changed.

7.5   Areas for future research

While conducting the research, several areas for future research became apparent. This section reviews some of the areas:

- One issue that arose from the fieldwork is the situation of migrants (and renters in Kathmandu Valley) and how their resilience levels vary from residents with extended families living in the city. Are the renters more

vulnerable in the urban setting, how can they be supported? How do migration patterns impact the relationship between urban and rural settings and what impact does this have on community resilience? How does vulnerability in one context, rural, produce vulnerability in another, urban?

- How can disaster risk reduction be embedded into development projects? How can disaster risk reduction be effectively embedded into everyday livelihoods concerns?

- What role does social resilience play in increasing community resilience; can social resilience be viewed separately from community resilience? Can it be quantified?

- How can women, women's groups and other community groups contribute to increasing community resilience?

- Alexander (2013, 1270) proposes that there are also many difficulties in operationalising resilience and in "designing strategies to achieve it in diverse, complicated and changing circumstances influenced by many variables". Practitioners are requesting indicators of resilience in order to measure impact of their projects. Can community resilience be operationalised and quantified? Which models can be used? What are the indicators that need to be considered?

These topics – migration to the urban setting, DRR/development/livelihoods, social resilience and its relationship to community resilience, the role of women and groups as civil society actors and agents of change, the longstanding issues of vulnerability/risk/resilience and lastly the issue of operationalising community resilience are valuable to explore in relation to community resilience and disaster risk

reduction efforts to earthquakes and other natural hazards before they become a disaster.

Through this research project, I have learnt that resilience is not a tyranny (Bene et al, 2012) and it is not a new paradigm. Resilience and community resilience are valuable concepts in conjunction with other ideas from the development and disaster risk reduction literature. They are worthy of further exploration especially in the context of work being implemented by practitioners in the Global South in relation to earthquake hazards and other natural hazards.

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APPENDIX 1 NEPAL FIELDWORK CALENDAR

Nepal Fieldwork January 2013						
Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
					January 12 Depart UK	13 Arrive in Kathmandu
14 Planning meeting for EwF partners, Donor	15 National Earthquake Safety Day, Informal Dinner with Donors	16 EwF Project Launch and Workshop, Official Dinner	17 EwF Wrap up meeting, Donor, NSET meeting to discuss fieldwork	18 Revision of fieldwork questions	19 Earthquake Safety rally	20
21 NSET and Lalitpur, Dinner with Donor	22 Writing Notes	23 Kirtipur and Lalitpur	24 NSET	25 NSET, Lalitpur, INGO	26 INGO informal lunch	27
28 Kirtipur and Lalitpur	29 INGO	30 Lalitpur	31 Kirtipur	February 1 INGO, INGO, INGO, NSET Training for staff	2 Writing Notes	3
4 NSET, University	5 Arrival in UK					

APPENDIX 2 INTERVIEW FORMATS

Format of interview with Donors, INGOs and Practitioners and NGOS

Section 1 My introduction including ethical statement

My name, I am a postgraduate student at Durham University, and I am conducting my research in conjunction with the Earthquakes without Frontiers project from Durham University with support from NSET in Nepal. I am investigating the concept of Community Resilience. I will be in Nepal for over 3 weeks. I can be of no benefit to you or to your work. You can finish the interview when-ever you desire. You do not need to finish, or answer any questions you do not want. I will not identify people by name in my research document, I will provide anonymity. Can you please give me your opinions on the following questions and if you want to give me additional information, please do so. Do you have any questions about what I just explained?

Section 2 Questions about Resilience, Community Resilience, efforts in Nepal

1. Can you describe your organisation and your work?

2. Do you use the term resilience in your work? Why? Why not? Does it help to frame discussion in your work?

3. How do you define it? Has it changed over time? Do you know when your organisation first used the term?

4. Is it useful as a concept?

5. Is it an inclusive or limiting phrase?

6. How do you view the term resilience in relation to vulnerability, livelihoods, natural hazards, individual, community, Nepal, Disaster Risk Reduction

7. Would you prefer a different phrase? What is it?

8. What does the concept of resilience, or its closest equivalent, mean to stakeholders of a community[3]?

9. What, in local terms, are the characteristics or components of resilience?

10. Do understandings of resilience vary between groups in society? In what ways?

11. How do local, academic and practitioner understandings of resilience vary?

12. How is resilience produced and enhanced in local contexts?

13. Can resilience also be enhanced or supported through external intervention?

14. What form(s) might this support or intervention take?

Section 3 Interviewee has additional comments or asks questions

1. Anything else you want to tell me? Or ask me any questions?
2. Is there any else you can think of that I should talk to?
3. Can I take photographs?
4. Thank you…

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[3] Yellow signifies Research Question

Key Informants

Aim

1. To gather background information on the case study municipality including socio-cultural characteristics of the population, history of the settlement and current economic and political context.

2. To understand current vulnerability and resilience to earthquake hazards within the municipality.

3. To identify research participants to approach for in-depth interviews and focus group discussions.

Key Informants in municipality may include: local government officials, political leaders, representatives of women's and mothers groups, teachers, youth groups and business people.

Section 1 My introduction including ethical statement
THIS WILL BE DONE EITHER BY ME OR THE INTERPRETER
My name, I am a postgraduate student at Durham University, and I am conducting my research in conjunction with the Earthquakes without Frontiers project from Durham University with support from NSET in Nepal. I am investigating the concept of Community Resilience. I will be in Nepal for over 3 weeks. I can be of no benefit to you or to your work. You can finish the interview when-ever you desire. You do not need to finish, or answer any questions you do not want. I will not identify people by name in my research document, I will provide anonymity. Can you please give me your opinions on the following questions and if you want to give me additional information, please do so.   Do you have any questions about what I just explained?

Key informant questions:

1. How have things changed in your Ward over the last 10 years? (Social trends, economic, migration, education, health). What has caused these changes?

2. Does your Ward have community groups? If yes, how long have they been existing and what is their focus?

3. What role does the Ward government play in local development?

4. Are there any international / local NGOs working in your ward? IF yes, how long have they been there and what is the focus of their activities? Are there other key actors involved in local development?

5. Are there any examples where the ward government, NGOs, community groups and businesses work together for local development?

6. What changes would you like to see in your ward for it to be a better place to live?

7. What kind of support would be needed for these changes to take place in the ward (technical, financial, political)?

8. What are the elements that make Lalitpur proactive, successful?

9. Describe activities for Disaster Risk Reduction Committee, what are their plans for Disaster Risk Reduction?

10. What is Disaster Risk Reduction awareness of people in the Ward?

Individuals

Section 1 My introduction including ethical statement

THIS WILL BE DONE EITHER BY ME OR THE INTERPRETER

My name, I am a postgraduate student at Durham University, and I am conducting my research in conjunction with the Earthquakes without Frontiers project from Durham University with support from NSET in Nepal. I am investigating the concept of Community Resilience. I will be in Nepal for over 3 weeks. I can be of no benefit to you or to your work. You can finish the interview when-ever you desire. You do not need to finish, or answer any questions you do not want. I will not identify people by name in my research document, I will provide anonymity. Can you please give me your opinions on the following questions and if you want to give me additional information, please do so. Do you have any questions about what I just explained?

General questions about interviewee

Questions about their life: Particular focus on livelihoods and resilience

Livelihoods

1. Can you describe your typical day?

2. What is your occupation? What do you spend most of your time doing?

3. How do you take care of your family in relation to food (pay for it or grow it) and education?

4. What are your biggest worries day to day?

Social capital / Resilience questions

1. Who and what help you resolve your problems? What constitutes your support system?

2. Through the past 10 years, what was your biggest challenge? How did you overcome it? Who or what helped you to respond? Who long does it take to get back to normal?

Questions about earthquakes

1. Have you experienced an earthquake? Can you give details? When, impact, what they felt? Were you in a building?

2. Do you know what causes an earthquake to occur?

3. Are earthquakes a concern for you and your household?

4. Are you doing anything to prepare for an earthquake? If yes, please give details. If no, why not?

5. Have you ever received information that could help you prepare for and react to an earthquake? If yes, what was source of information (children, media, theatre)? What was the information?

Specific questions for municipality that has worked with NSET

1. Can you describe the activities of the NSET project? Time frame?

2. What did you know about earthquake preparedness before the project? After implementation? Is there a change in your perception of risk? In your preparedness? Do you have new skills? Knowledge? Is there a change in daily practice? Long term planning?

3. Has earthquake risk been reduced?

4. Is the impact further than just the school? Community? If not, what could be done in the future?

5. Were there other disaster risk reduction projects occurring in the municipality at the same time period? Impacts?

Interviewee has additional comments or asks questions

1. Anything else you want to tell me? Or ask me any questions?

2. Is there anyone else you can think of that I should talk to?

3. Can I take photographs?

4. Thank you

Focus groups

Section 1 My introduction including ethical statement
THIS WILL BE DONE EITHER BY ME OR THE INTERPRETER
My name, I am a postgraduate student at Durham University, and I am conducting my research in conjunction with the Earthquakes without Frontiers project from Durham University with support from NSET in Nepal. I am investigating the concept of Community Resilience. I will be in Nepal for over 3 weeks. I can be of no benefit to you or to your work. You can finish the interview when-ever you desire. You do not need to finish, or answer any questions you do not want. I will not identify people by name in my research document, I will provide anonymity. Can you please give me your opinions on the following questions and if you want to give me additional information, please do so. Do you have any questions about what I just explained?

Target: mothers groups, youth groups, teachers groups

General questions about group interviewees (how many people participating, gender breakdown of group, approximate age of the members and length of time the group has been running).

Background questions:

1. Can you tell me a little about your group? How often you meet, how many members do you have? Do you work together in other ways outside of the group?

2. What are the problems you are trying to address? Have these changed in recent years? If yes, how?

3. How are you addressing these problems? Do you receive any outside support (technical, financial and social)? Who gives it (municipal government, NGOs, other?)

4. Are there any examples where the ward government, NGOs, community groups and businesses work together?

5. What changes would you like to see in your municipality for it to be a better palce to live?

6. What kind of support would be needed for these changes to take place in the municipality?

Questions about earthquakes

6. Have you experienced an earthquake? Can you give details? When, impact, what they felt? Were you in a building?

7. Do you know what causes an earthquake to occur?

8. Are earthquakes a concern for you, your household and the community group?

9. Are you doing anything to prepare for an earthquake? If yes, please give details. If no, why not?

10. Have you ever received information that could help you prepare for and react to an earthquake? If yes, what was source of information (children, media, theatre)? What was the information?

Specific questions for municipality that has worked with NSET

6. Can you describe the activities of the NSET project? Time frame?

7. What did you know about earthquake preparedness before the project? After implementation? Is there a change in your perception of risk? In your

preparedness? Do you have new skills? Knowledge? Is there a change in daily practice? Long term planning?

8. Has earthquake risk been reduced?

9. Is the impact further than just the school? Community? If not, what could be done in the future?

10. Were there other disaster risk reduction projects occurring in the municipality at the same time period? Impacts?

Interviewee has additional comments or asks questions

5. Anything else you want to tell me? Or ask me any questions?

6. Is there anyone else you can think of that I should talk to?

7. Can I take photographs?

8. Thank you

Appendix 3 ALL QUESTIONS IN NEPALI

<u>Key questions (Target key informants :)</u>

उद्देश्य:

१. नगरपालिकाको बिषय अध्ययन जसमा सामाजिक सान्स्कृतिक, जनसंख्याको चरित्र, बसोबास , आर्थिक, राजनीतिक बिषयमा जानकारी सन्कलन गर्ने

२. नगरपालिका भित्र हालको भुकम्पिय संकटासन्नता र उत्थानशिलताको बारेमा बुझ्ने

३. बिख्तित अन्तर्वाता र सामुहिक बिषय छलफलमा सहभागी गराएर उनीहरुको आगामी कदमको पहिचान गर्ने

साधारण जानकारी (नाम, सस्था,पेशा,नगरपालिकामा बसेको अवधि)

१. बिगत १० बर्षमा तपाईको नगरपालिकामा / वडामा के कस्तो परिवर्तन आएको छ? (सामाजिक, आर्थिक, बसाई सराई, शिक्षा, स्वास्थ)? यि परिवर्तनका कारण के हुन्?

२. तपाईको नगरपालिकामा टोल सुधार समुह छन? यदि छन भने स्थापना भएको कती भयो र तिनिहरुको उद्देष्य के हो?

३. नगरपालिकाले स्थानिय बिकासमा के भूमिका खेलिरहेको छ?

४. तपाईको नगरपालिकामा कुनै अन्तरराष्ट्रिय / राष्ट्रिय गैर सरकारी संस्था काम गरिराखेको छ? यदि छ भने कति भयो र ति संस्थाहरु के कस्ता कार्यक्रममा केन्द्रित छन? अरु केही संस्थाहरु स्थानीय बिकासमा सहभागी छन?

५. नगरपालिका,गैर सरकारी संस्था, स्थानीय समुदाय वा अरु संस्थाहरु स्थानीय बिकासको लागि काम गरेको उदाहरण छ?

६. **बाँच्नको लागी उचित ठाउँ** बनाउनको लागि तपाईको नगरपालिकामा के कस्तो परिवर्तन ल्याउन जरुरी छ?

७. नगरपालिकामा परिवर्तनको लागि के कस्तो सहयोगको आवश्यकता छ? (प्राबिधिक, आर्थिक, राजनीतिक)

Individual

उद्देश्य :

१. स्थानीय ब्यक्तिको दैनिक जीवनको बारेमा उनीहरुको चासोको बिषय बुझ्ने

२. सामाजिक ब्यक्ति आय र उत्थानसीलताको बारेमा बुझ्ने

३. भुकम्पको बारेमा उनीहरुको धारणा बुझ्ने

निशाना: सर्बसाधारण

जिविकोपर्जन

१. तपाईको आफ्नो दैनिकी बारे व्याख्या गर्न सक्नुहुन्छ?

२. तपाईको पेशा के हो? तपाई धैरै जसो समय के काममा खर्च गर्नुहुन्छ?

३. तपाई आफ्नो परिवारको रेखदेख कसरी गर्नु हुन्छ? (खानको लागि पैसा तिरेर, खेती गरेर?) शिक्षाको लागि?

४. तपाईको दैनिकिमा के कुराले असर गरिराखेको हुन्छ?

सामाजिक आय र उत्थानसिलता

१. तपाईको समस्यालाई कसले र कसरी समाधान गरिराखेको छ? तपाईको निर्भर हुने माध्यम के हो?

२. बिगत १० बर्षमा तपाईको मुख्य समस्या के रहयो?कसरी समाधान पाउनु भयो? कस्ले र कसरी तपाईलाई मद्धत गच्यो? साधारण अवस्थामा फर्किन कती समय लाग्यो?

भुकम्प सम्बन्धी प्रश्रहरु

१. तपाईले भुकम्पको झट्का महसुस गर्नु भएको छ? कहाँ, के असर पच्यो र के महसुस गर्नुभयो? कहाँ हुनुहुन्थ्यो?

२. भुकम्प कसरी जान्छ भन्ने कुरा के तपाईलाई थाहा छ?

३. तपाईको र तपाईको घरको लागि भुकम्प एक चसोको बिषय हो कि होईन?

४. तपाईले भुकम्पको पुर्वतयारी गर्नुभएको छ? छ भने कस्तो खलको गर्नुभएको छ? छैन भने किन छैन?

५. तपाईले भुकम्पको बारे जानकारी प्राप्त गर्नुभएको छ? छ भने कुन मध्यम बाट थाहा पाउनुभयो? (केटाकेटी, संचार मध्यम, भिडियो) यि जानकारीबाट के सिक्नुभयो?

यदि तपाईहरुको केही थप जिज्ञासा वा प्रश्र भएमा

१. तपाईहरुलाई केही भन्नु छ?या कुनै प्रश्र?

२. तपाईलाई मैले अरु केही सोध्नु पर्ने कुर थियो कि?

३. के मैले तस्बिर खिच्न सक्छु?

४. धन्यवाद....

Focus Group

उद्देश्य :

१. स्थानीय समुहले सम्बोधन गरिरहेको बिषयमा उनीहरुको धारणा बुझ्ने
२. भूकम्पिय पुर्वतयारीको चेतना बारे स्थानीय समुहमा उनीहरुको धारणा बुझ्ने र उतार्ने

निशाना :आमा समुह, शिक्षाक,युवा समुह

सामान्य जानकारी: कतिजना सहभागी,लैङिक बिभाजन, उमेर र समुहको सन्चालन अवधि

१. तपाईको समुहबारे छोटो जानकारी दिनुहोस्? कतिजना सदस्य हुनुहुन्छ, कहिले कहिले भेला हुनुहुन्छ?
२. तपाईले के समस्यालाई सम्बोधन गर्नुभएको छ? के यस्ले गएको बर्षमा परिवर्तन ल्याएको छ? छ भने कसरी?
३. यी समस्यालाई कसरी समाधान गर्नुभएको छ? तपाईले कसैको सहयोग लिई राख्नु भएको छ?
   (नगरपालिका,गैह्रसरकरी संस्था,अरु कुनै)
४. नगरपालिका,गैर सरकारी संस्था, स्थानीय समुदाय वा अरु संस्थाहरु स्थानीय बिकासको लागि काम गरेको उदाहरण छ?
५. बाँच्नको लागी उचित ठाउँ बनाउनको लागि तपाईको नगरपालिकामा के कस्तो परिवर्तन ल्याउन जरुरी छ?
६. नगरपालिकामा परिवर्तनको लागि के कस्तो सहयोगको आवश्यकता छ? (प्राबिधिक, आर्थिक, राजनीतिक)

भुकम्प सम्बन्धी प्रश्रहरु

१. तपाईले भुकम्पको झट्का महसुस गर्नु भएको छ? कहाँ, के असार प¥यो र के महसुस गर्नुभयो? कहाँ हुनुन्थ्यो?
२. भुकम्प कसरी जान्छ भन्ने कुरा के तपाईलाई थाहा छ?
३. तपाईको र तपाईको घरको लागि भुकम्प एक चासोको बिषय हो कि होइन?
४. तपाईले भुकम्पको पुर्वतयारी गर्नुभएको छ? छ भने कस्तो खलको गर्नुभएको छ? छैन भने किन छैन?
५. तपाईले भुकम्पको बारे जानकारी प्राप्त गर्नुभएको छ? छ भने कुन मध्यम बाट थाहा पाउनुभयो? (केटाकेटी, संचार माध्यम, भिडियो)

Questions for Municipalities/Words who worked with NSET

एनसेटसँग सम्बद्ध भएर काम गरिसकेको नगरपालिकाको लागि प्रश्नहरु

१. नगरपालिकामा भएको कार्यक्रमको ब्याख्या गर्न सक्नुहुन्छ? समयावधि कति हो?

२. भुकम्पिय पूर्वतयारीको बारेमा यो कार्यक्रमभन्दा अगाढी कसरी थाहापाउनु भयो? कार्यक्रम लागु गरिएपछि? भुकम्पिय जोखिमको बारेमा तपाईंको विचारमा परिवर्तन आएको छ? पुर्वतयारीमा? नयाँ क्षमता बिकास भएको छ? दैनिकिमा केही परिवर्तन आएको छ? भावी योजना के छ?

३. तपाईंको विचारमा भुकम्पिय जोखिम न्युनिकरण भएको छ?

४. के यो स्कुलभन्दा स्थानीय स्तरमा अगाडि बढेको छ? यदि छैन भने भविष्यमा के गर्न सकिन्छ?

५. के नगरपालिकामा अरु बिपद्को कार्यक्रमहरु (प्रोजेक्टहरु) सन्चालन भईराखेका छन्? यसको असर कस्तो परिरहेको छ?

यदि तपाईहरुको केही थप जिज्ञासा वा प्रश्न भएमा

५. तपाईहरुलाई केही भन्नु छ?या कुनै प्रश्न?

६. तपाईंलाई मैले अरु केही सोध्नु पर्ने कुरा थियो कि?

७. के मैले तस्बिर खिच्न सक्छु?

८. धन्यवाद....

The Himalayan times Saturday Jan 26, 2013

STRUCTURAL SAFETY

Earthquake resistant buildings can be built within a budget if planned properly

Himalayan News Service
Kathmandu

The Kathmandu valley lies in a high-risk seismic zone where a massive earthquake is expected any time. Owing to the unplanned and massive surge in construction, experts fear significantly greater loss of lives, physical damage, and economic crisis than caused by past earthquakes.

Bijay Krishna Upadhyay, earthquake technology training specialist at National Society for Earthquake Technology-Nepal (NSET) presumes that an earthquake similar to the one in 1934 could result in reducing more than 60 per cent of buildings to rubble, the death of over 100,000 people and over 300,000 people requiring immediate medical response.

Although building an earthquake-proof house can be quite heavy on the budget, Upadhyay says there are some affordable alternatives to mitigate the risks in an event of an earthquake. The cost of any house that can be built for Rs 4.8 million would be hiked to Rs 5.2 million when earthquake resistance measures are adopted. "Even if the house owners opt for the technology without any alteration in design and pattern, the cost will increase only by seven to 10 per cent," he says.

Stating that trained man-power and the technology to build earthquake resistance structures for new building is easily available, he says that lack of motivational factor is the main hurdle. According to NSET, more than 450 masons were trained in 2012. Retro-fitting, which costs 20 to 35 per cent of the total construction, could be a viable option for old houses. Informing that the organisation is yet to survey how many residential buildings can be retrofitted, he says that the government has to take the initiative for the process.

Dr Uttar Kumar Regmi, chief of Disaster Management at the City at Kathmandu Metropolitan City Office (KMCO), says, "Rather than building everything from brick to brick, building an earthquake resistant house by following the national building code (NBC) would obviously be a wiser choice." According to him, if concrete steps are not taken, not only will home owners lose the roof over their heads but the country will also lose a major hub. "If such a catastrophe were to happen, it could take years rebuild this historic city," he warns.

As part of disaster preparedness, Regmi informs that KMCO has established the Disaster Risk Management Fund in which each household should contribute Rs 100 every year. Moreover, KMCO is in the process to strengthen fire fighting systems, conduct earthquake awareness programmes in 35 wards with collaboration from Red Cross Society and other non-government organisations, and provide trainings to masons.

New constructions are advised to follow NBC guidelines to safeguard property and house owners should not compromise on the foundation. Regmi alleges that house owners are more focused on façade than building earthquake resistant buildings. "Proper planning could ensure the house is quake resistant without overshooting the budget," he says.

According to him, more than 50 per cent of constructions are not built as per the construction permit which increases the threat. The value of property depreciates while danger increases if houses are built in violation of the permits, he says that KMC is planning to strengthen its monitoring mechanisms and complete data input by April 15.

According to NSET, they trained 1,000 community volunteers for rescuing victims in case of disaster. NSET is planning to conduct 'Collapse Structure Search and Rescue and Medical First Responder' trainings in collaboration with the government.

File photo: THT
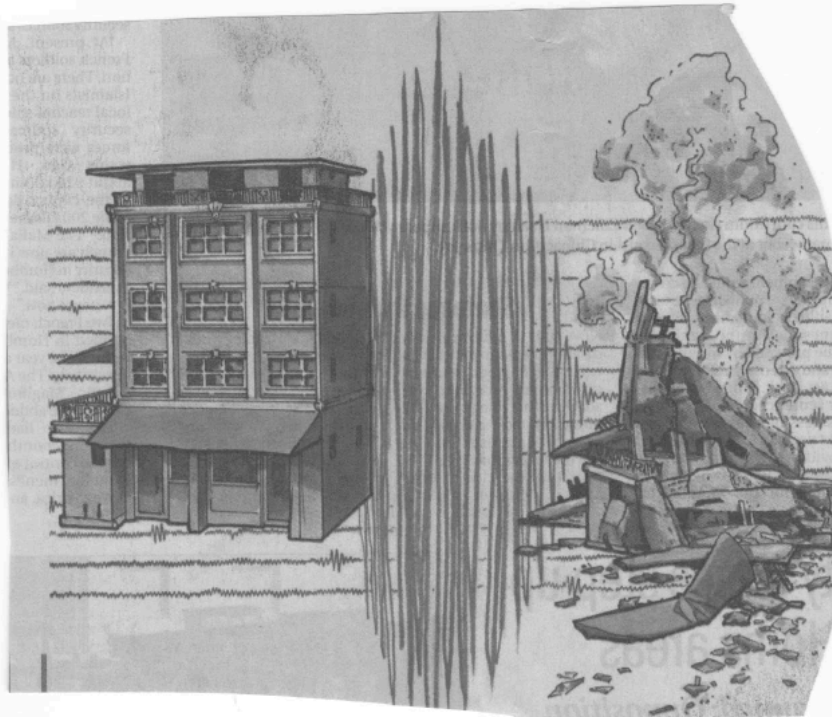
Quake resistant construction and building materials

- Foundation of the building should be constructed on the hard strata soil by using earthquake safety measures as directed by the design engineer.
- The shape of building should be square or compact rectangular.
- Building should be of closed shape, it is preferred to construct in U or L shape.
- The parts of the building should be tied together firmly and braced at corners stiffly so the whole structure tends to move as single unit.
- Parapets, cornices, cantilevers and projections should be re-enforced and attached to the main structure firmly.
- The thickness of any load bearing wall should not be less than 23 cm.
- All the joints of purlins and other supporting members should be properly bolted with each other.
- RCC band from 75 mm to 100 mm thick should be provided at plinth, lintel and roof level.
- Provide RCC band in case of trusses or rafter to connect all columns and walls.