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Rebuilding a more resilient Nepal

*“How do INGOs contribute to earthquake resilient
housing in Nepal after the 2015 earthquake?”*

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A Master's degree in Societal Safety and Risk Management
Fall 2016

UNIVERSITETET I STAVANGER

**MASTERGRADSSTUDIUM I
SAMFUNNSSIKKERHET**

MASTEROPPGAVE

SEMESTER: 2016-2017

FORFATTERE: Mikael Johnsen & Stanislav Stedronsky

VEILEDER: Odd Einar Olsen

TITTEL PÅ MASTEROPPGAVE: “Rebuilding a more resilient Nepal” - How do INGOs contribute to earthquake resilient housing in Nepal after the 2015 earthquake?

EMNEORD/STIKKORD: Nepal, Earthquake, Hazard, INGOs, Disaster, vulnerability, resilience, housing, local capacity, awareness, risk reduction

SIDETALL: 78

STAVANGER: 15 January 2017

Acknowledgements

This thesis is the final part of the Master in Societal Safety and Risk Management at the University of Stavanger. Its completion marks the end of a five-year-long journey in an academic landscape that we are very grateful to have been a part of. We want to express our gratitude to the professors we have been privileged to encounter at the University of Stavanger. Their commitment, passion, and professional skills, is an inspiration. Thank you for being so accommodating and your open door during our studies.

We would like to thank our family and friends, and the people who have given their time and effort to support us during this journey. The Student community at “Studentenes Hus” deserve some final thanks, after being available to us in all kind of ways.

We would like to express our gratitude to our local informants in Nepal, who allowed us to conduct our research during in such challenging times. Your engagement and hospitality have been an inspiration. We would especially like to thank Betisa, Minar, Amit, Lena, Arshad, Maggie, Hans, Karl, Loren, Tom, Jennifer and Rajesh, who have opened many doors and taken an interest in our thesis.

We would like to thank our supervision Odd Einar Olsen for your feedback, endurance and support. Hope we do not disappoint. We would also like to thank Bjørn Ivar Kruke for his interest and supporting role. Thanks to Jørgen and Jørgen for your feedback and corrections, we know you enjoy it, but thanks anyway.

Mikael Johnsen and Stanislav Stedronsky

Stavanger, 15. January 2017

Summary

The devastating earthquake in April 2015 showed Nepal's massive vulnerability towards earthquakes. The damages extend to approximately 712.000 houses. The lack of progress in development and risk reduction from the government before the earthquake led to the arrival of many International Non-Governmental Organizations, which realized that the government has limited capacity and prior success in the field. The purpose of this study is to investigate how resilient housing activities are driven in the context of developing country like Nepal, and how INGOs can contribute to reducing vulnerability towards future earthquakes, through cooperating with the government in the reconstruction of resilient housing. The INGOs have experience in disaster management and are bringing new knowledge, experience, and resources which they are expected to implement during the reconstruction, but they lack knowledge about the context of the country.

The research areas have been the capital, Kathmandu and Gorkha District, which was the epicenter of the 2015 earthquake. The measures of the studied INGOs were followed by the interaction with The Shelter Cluster and the Housing Reconstruction Recovery Workgroup.

As a theoretical framework, we used the PAR-model to explain how the existing vulnerabilities before the earthquake transcended into the disaster. We identified the political system, poverty and lack of local institution as the mains sources of vulnerability. The measures that INGOs are implementing are focused on the latter ones, implementing the theoretical concepts of building back safer, awareness and capacity building.

INGOs are contributing to earthquake resilient housing through five key measures incorporated into the process of reconstruction: seismic resilient house design, implementation of building codes through training, increasing community awareness, social mobilization, and financial support. The successful combination of the five measures will lead to a more resilient and sustainable housing that are less vulnerable to future earthquakes. The implementation power of the INGOs depends on the relationship to the government. If the relation is close and based on a long-term relationship, the flexibility to implement the programs increases. This can result in more efficient house reconstruction.

The INGOs present in Nepal dispose financial resources to cover the reconstruction of approximately 5 % of the affected houses. The INGOs role on a large scale is less significant than we expected. At the same time, the government has huge amounts of financial resources available for the reconstruction, but does not seem to be able to distribute those efficiently to the affected people. However, since the government system fails to reflect the existing vulnerabilities, in some cases by not being physically present in the villages. The most significant contribution of the INGOs to resilient housing reconstruction is by increasing the local capacity and awareness related to earthquake resilient housing in the rural areas. INGOs can also supplement the role of the local government through the access to information, that the government fails to provide to rural communities.

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List of Abbreviations

BBS	Build Back Safer
CBS	Central Bureau of Statistics
CEO	Chief Executive Officer
CRS	Catholic Relief Services
DDRC	District Disaster Response Committee
DFID	Department for International Development
DoLIDAR	Department of Local Infrastructure Development and Agricultural Roads
DRR	Disaster Risk Reduction
DUDBC	Department of Urban Development & Building Construction
GON	Government of Nepal
HFA	Hyogo framework for Action
HRRP	Housing Reconstruction Recovery Platform
IFRC	International Federation of Red Cross and Red Crescent
INGO	International Non-Governmental Organizations
JICA	Japan International Cooperation Agency
MoFALD	Ministry of Federal Affairs and Local Development
MOUD	Ministry of Urban Development
NBS	Nepal Bureau of Statistics
NGO	Non-Governmental Organizations
NPC	National Planning Commission
NRA	National Reconstruction Authority
NSC	Nepal Shelter Cluster
PASSA	Participatory Approach for Safe Shelter Awareness
PDNA	Post Disaster Needs Assessment
RCC	Reinforced Cement Concrete
SC	Shelter Cluster
SDC	Swiss Agency for Development and Cooperation
SFA	Sendai Framework for Action
TOM	Training of Masons
TOT	Training of Trainers
UNHABITAT	United Nations Human Settlements Program
UNISDR	United Nations International Strategy for Disaster Reduction
UNOCHA	United Nations Office for the Coordination of Humanitarian Affairs
UNOPS	United Nations Office for Project Services
VDC	Village Development Committee

1. Introduction

I have absolutely no faith in the Nepalese government, which is primarily concerned with its own survival. In return, I have full confidence in the Nepalese people. They have lived through earthquakes and natural disasters, and they are used to be left on their own. It has always been like this here; people just have to fend for themselves (C.K. Lal, in Svaar 2016).

Nepal is one of the most earthquake-prone countries in the World and its history of documented earthquakes that goes back to 1255 A.D. ¹ It could be expected that this experience would result in a country that is prepared and can withstand earthquakes. However, after years of failed development, civil war, numerous changes in government, without significant progress, the people have lost faith in the government and have grown accustomed to fending for themselves.

The devastating earthquake in April 2015 destroyed approximately 712.000 houses. These needs to be rebuilt in a quality that can withstand future earthquakes. For this to succeed, the implementation of the Nepali Building Code in the reconstruction is imperative. In efforts to extend the government's capacity, many International Non-Governmental Organizations (INGOs) have chosen to take part in the reconstruction.

This thesis is a study of the INGOs role in the reconstruction of resilient housing in Nepal after the 2015 Earthquake. It seeks to explore the system and how it affects the outcome of measures implemented by INGOs.

¹ World Monuments Fund (n.d.) Cultural Heritage Sites of Nepal

1.1 Background

Disasters always bring tragedy, but they also open an opportunity for change in the affected communities (Archer and Boonyabancha, 2011, s. 351).

Nepal is one of the least developed countries in the world (Sharma 2014). Developing countries are traditionally more exposed to natural hazards. This combination of failed development and exposure to hazards has been connected to a long tradition of humanitarian organizations trying to contribute to the development in the country (Bell 2015).

The body of literature about the role of INGOs in Disaster Risk Reduction (DRR) during the reconstruction process consists mostly of case studies from different countries. Kim (2015) analyses the role of non-governmental organizations (NGOs) in social protection in East Asia, focusing on two types: direct provision and indirect pressure. In their case study from India, Price and Bhat (2009) focused on the relation between the government and the INGOs after the Gujarat earthquake in 2001 and tsunami in 2004, showing the complexity of such a relation. Elhawary and Castillo (2008) studied the role of the affected state in the earthquake response and reconstruction after the 2007 earthquake in Peru. Baradan (2006) analyzed the different phases of the house reconstruction in Turkey after the earthquake in 1999. Powell (2011) compared the structural vulnerabilities of different post-disaster reconstruction approaches after the Gujarat earthquake. Ikaputra (2012) investigated the role of the local community in the process of house reconstruction after the earthquake in 2006 in the case study from Java (Relevant Research). Barenstein (2006) analyses the relation between NGOs and communities in the house reconstruction, comparing the subsidy-driven with the owner-driven approach to the reconstruction. Da Silva (2010) analyzed the post-disaster reconstruction after the Tsunami caused by the earthquake in 2004 on Aceh, Indonesia. Fayazi et al. (2015) compared the impact of the different house reconstruction policies on different categories of households in Bam, Iran. Schilderman and Lyons (2011) analyzed post-disaster reconstruction processes in 10 affected countries. Pandey et al. (2008) compared different types of dissemination of technology for the earthquake resilient housing using the case studies from Iran, Afghanistan, India and Nepal. Mubah (2013) studied the collaboration between the INGOs and the government on the disaster governance in Indonesia. Blaikie described the historical progression of the vulnerability and its translation into the disaster in Wisner et al. (2004). Twigg (2015) presented an oversight that identifies and discuss the different practices and guiding principles related to disaster risk reduction.

The State has the primary responsibility for taking effective measures to reduce disaster risk (UNISDR 2005, p. 4). Those must be integrated into the policies and programs for sustainable development and poverty reduction. This responsibility should be empowered by a higher participation of the civil society in influencing risk perception in the direction of earthquake awareness (Ibid p. 1). To create the right connection between resilience building and sustainability is essential, and may be a challenging task for both government and INGOs (Opdyke and Javernick-Will 2014).

1.2 Research problem

INGOs contribution in resilient housing reconstruction after the earthquake is a complex challenge. The positive aspects can be new knowledge, experience, and resources. It may also cause conflicts based on lack of local knowledge, different worldviews, and programming. The presence of many different actors may create a need for a higher level of coordination and formulation of common goals and strategies. In developing countries government's need for financial resources for the reconstruction opens for INGO participation. The acceptance of INGOs can challenge the government's role. INGOs have experience in disaster management, which they are expected to implement during the reconstruction. Those expectations can come into conflict with the government's plans, possibly threatening and undermining the government's authority. At the same time, the government need the financial resources, and in some areas also the capacity to implement projects. Nepal's situation after the earthquake has been challenged by the political situation, poverty and lack of implementing the power of the local institutions, which opened for INGO participation in the housing reconstruction. Their potential role in earthquake awareness programs for the Nepali people may reduce the vulnerabilities in the housing sector.

Therefore, we have decided to formulate our research problem as follows:

How do INGOs contribute to resilient housing in Nepal after the 2015 earthquake?

1.3 Supporting research questions

Disasters have been stated to provide a "window of opportunity" for change, which is demonstrated by the many risk reduction activities introduced after major disasters (Twigg 2015, p 330). The purpose of this study is to show how resilient housing activities are driven in the context of developing country like Nepal, and how INGOs can contribute to reducing vulnerability towards future earthquakes, through cooperating with the government in the reconstruction of resilient housing. To support the main problem, we formulated following supporting research questions:

How is the reconstruction system addressing the existing vulnerabilities in relation to housing?

What resilience measures are implemented by INGOs?

What are the main challenges for the INGOs?

1.4 Limitations of the study

The potential scope of this thesis requires some limitations to the research problem. The timeframe of the data collection is limited to a fieldwork composed of two trips we have conducted in Nepal, about eight weeks, divided between November - December 2015 and March 2016. The timeframe combined with geographical distances and an underdeveloped infrastructure (roads, etc.) has reduced the number of projects, activities, and organizations that could have been a part of this thesis.

The research areas have been the capital, Kathmandu and Gorkha District, which was the epicenter of the 2015 earthquake. The actors mentioned in this thesis were chosen during our interaction with The Shelter Cluster and the Housing Reconstruction Recovery Workgroup, based on the presentation of their activities and informal talks about their projects. Which actors to include in the thesis has been evaluated throughout the working period, based on the relevancy their activities and their relevance to the research problem.

The focus has been on the risk reducing activities related to the reconstruction after the 2015 earthquake, not on those already running before it. There are many other activities that INGOs are engaged in, that in a wider sense can be considered as a part of the housing (WASH, health, etc.). Our choice has been to focus on the shelter activities.

This thesis is written within the frame of the social sciences, emphasizing that the technical qualifications of the building code have not been considered. According to the engineers in the Shelter Cluster and HRRP, the building codes are sufficiently in relation to earthquake resistance. We have chosen not to focus on local and district institutions and committees. The challenges in establishing the strategy for the housing reconstruction on a national level paralyzed the local institutions in relation to the reconstruction at the time of the data collection.

1.5 Relevant research:

Mumtaz et al. (2008) studied the challenges connected to the process of reconstruction after the Kashmir earthquake in Pakistan. Mostly focusing on the frameworks, describing the role of UN-Habitat and INGOs in the awareness programs. Khan and Ali (2015) studied INGOs involvement in the implementation of resilience building in Pakistan. Identifying the role of INGOs as major supporters, implementers, and financers of almost all activities of DRR in the country with all the community-based activities supported by them. Pointing out significant gaps in the system, especially lack of coordination and overlapping involvement creating duplicities. Schacher et al. (2011) analyzed the effects of the training of the masons provided by the Swiss development agency on the implementation of the confined masonry on Haiti after the earthquake. Vye (2007) analyzed the role of NGOs in disaster mitigation and response in a case study from Uttarakhand, India, focusing on the evaluation of the efficiency of the INGOs programs such as mason training, social mobilization on emergency preparedness and response, and the amount of earthquake safe houses built in the area. Tran (2015) presents the post-disaster housing reconstruction as a significant opportunity for resilience building in Vietnam. Jigyasu (2002) investigated the relation between the local capacity and knowledge of the rural communities in relation to their ability to reduce vulnerability against earthquakes, consisting of 3 case studies from Marathwada region in India, Kutch, and Saurashtra regions in Gujarat in India and Kathmandu valley in Nepal. Opdyke and Javernick-Will (2014) studied the role of the training, community participation and social mobilization in linking the sustainability and resilience to the post-disaster reconstruction.

Although there exist common features in disasters, the context of the country plays an important role. Many studies focus their research on the role of INGOs in policy making. Some of them focusing closely on community and capacity building in relation to disasters. The position of INGOs in the housing reconstruction after the earthquake in Nepal has not been sufficiently

explained by the previous studies. Therefore, we believe putting more light on the role and measures that INGOs are applying to reduce the vulnerability through the housing reconstruction in Nepal, will help us better understand the contradicting forces in the disaster risk reduction.

2. Context

This chapter presents the context in which we have done our research in. Knowledge of Nepal and its historical factors play an important role to understand the roles, measures, and activities in the reconstruction.

2.1 History

Nepal was united by force in the 18th century when the King of Gorkha defeated all the small Himalayan kingdoms. Since the conflict with the British forces in the 19th century, the king' launched a policy of isolation from external influences. This allowed Nepal to maintain its national independence, but it also hampered the country's economic development and modernization. The process of democratization of Nepal started in the middle of the 20th century by framing a constitution for Nepal that would establish a representative form of government ². The National Parliament was established, although the king stayed on as a head of the state with the absolute power over the whole political system in Nepal. The Nepalese Civil War between government forces and the Maoist party started in 1996 and lasted for an entire decade. Along with the 2001 royal palace massacre, this led to the weakening of the King's power and furtherly the abolition of the monarchy in 2008. The Federal Democratic Republic of Nepal was established in 2008. Since then there has been political struggles to achieve an agreement on the new constitution. The caste system, which was the predominating power system in the society during the kingdom era, was officially abandoned with the establishment of the Republic, but is still present and therefore undermines the democracy. The new constitution was presented the 20th of September 2015, but there are still conflicts and disagreements between the political parties and

² Wikipedia (2016) Kingdom of Nepal

the people. The spoils of the civil war and the political conflict has been affecting Nepal until now.

2.2 Geography

Nepal is a country that has a great diversity of nature, including 8 of the largest mountains in the world, all above 8000 meters. The Terai-region is on the other side of the scale, ranging from 70-300 meters above the sea. The challenging infrastructure sets the premises for the country's political organization. Nepal consists of 75 districts that are organized by geographical location that is further divided into 3776 Village development committees (VDC). Each VDC is later divided into 9 Wards.

2.3 Hazard Risk Landscape

Nepal is divided into three geographical regions, mountains, hills and lowland Terai.

The different geographical characteristics of make the country prone to different geological and hydro-meteorological hazards. Examples of those hazards that contribute to increased vulnerability are landslides, floods, droughts, and earthquakes. The geographical position of Nepal is the reason for the frequent earthquakes. Earthquakes of magnitude 5.0 or more occur almost every year and have caused heavy losses of lives on several occasions. The earthquakes are caused by the disturbances occurring due to the continuous encroachment of the Indian subcontinental plate into the main Asian plate. The country has a recorded history of earthquakes since the 13th century, starting with the first records from 1255 AD later 1833, 1905 and 1934 (Adhikari 2016). Since the first recorded earthquake of 1255 A.D. that killed one-third of the population of the Kathmandu Valley, Nepal has experienced a major earthquake every few generations (NPC 2015a).

2.4 Demographics

The population of Nepal is estimated to about 30 million people³. It is a multicultural and multi-ethnic country; mainly because of its history of unification and migration of ethnic groups from India and Tibet. The 2011 census reported 125 ethnic groups. Urbanization level is 17 percent with the rate of urbanization around 4 percent per year⁴. The economy is mostly built on agriculture and tourism. The lack of job possibilities and the hard-living conditions, combined

³ World Bank (2016)

⁴ World Bank (2013)

with the pressure for success, cause many young people to leave the countryside and try their luck in the big cities, like Kathmandu or Pokhara. Consequently, the population of Kathmandu Valley is considered to be one of the fastest growing in the world ⁵. The economy is heavily dependent on foreign help, and remittances sent home from the workers abroad. Many of the skilled workers, such as masons, skilled workers, engineers and construction workers are traveling abroad to Dubai and other countries to get higher wages. The Nepali army has a great tradition of contributing with a significant amount of personnel to the UN peacekeeping forces. Young men from the Gorkha district are also traditionally recruited into the British and Indian army.

2.5 Political context

2.5.1 Distance from Kathmandu - Distance from power

The geographical distance between districts and the central government is a challenge for the coordination between them. Terai is the most populated area, with about 50% of the population and 3.3% lives in the capital, Kathmandu. The uneven spreading of the population has been a challenge related to the distribution of power in the parliament. Poor organization and communication between people in the districts and the political leadership in Kathmandu have consequently marginalized the districts. A Large section of the population in Nepal cannot access political participation and representation to public affairs due to their marginalized position, based on ethnic, caste or the poverty they live in (IFAD 2013, IMC Social Development 2015)

2.6.2 Lack of Political Consensus

The transition to democracy has been challenging. The number of political parties is approximately 135, and 22 of them are currently represented in the government/parliament. The political parties have different agendas based on the ethnic/caste background and ideological background. The main conflict is between Nepali Congress, Royalists, Maoists and Madhesi parties. The communist parties (Maoists) hold a strong position in the government. Their popularity has grown substantially after the civil war due to the support they have received from the marginalized part of the population. The Madhesi ethnic group stands for most the population in Terai. Madhesi parties have been trying to increase their power in the government, and because they control the vital connection to India, they often use border blockades as a negotiation means against the Nepali government. This complicated political landscape, with a large variety of

⁵ UNHABITAT (2013)

parties and agendas, is creating challenges for the country as a democracy. Political consensus can be complicated compared to other nations.

2.6 Corruption

Nepal faces corruption on many different societal levels. The political instability and changes in government have created an environment for corruption to flourish (Koirala et al. 2015). This hinders development and the democratic tendencies in Nepali society:

Corruption has failed successive governments, raised development costs, eroded the work ethos, and promoted a materialistic, inhuman attitude based on money. This has deepened poverty, impeded social and economic development, eroded public services and undermined democratic values (Ibid, p.3).

2.7 Between India and China

The political situation is also complicated by the strategic location of Nepal between India and China, and because of the huge potential regarding natural resources, such as hydropower. Both countries try to increase their influence over Nepal with both positive and negative consequences. The ethnic struggles in the Terai region that led to the blockade of the border has been affecting the vital connection to India, lasting from September 2015 to February 2016. This situation resulted in fuel and gas crisis in Nepal (Plesch 2015). India has been accused by the Nepali government of unofficially supporting the protesting groups at its borders, while China is offering help by trying to establish supply lines through Himalayas (Pant 2016)

2.8 Development and Poverty

Nepal is counted amongst the least-developed countries in the world, often connected with the notion of "failed development" (Bell 2015). Nepal has made efforts to become a developed country and set the goal to 2022 (Sharma 2014). Since the first adoption of national development strategy in 1974 Nepal has been divided into five development regions, and have been receiving development aid since then. The situation in Nepal can be seen as an example of failed development. After nearly 60 years of international aid directed towards development, the poverty rate of the people has decreased over time, but Nepal is still in the category of least-developed countries, with huge inequalities between geographical regions, genders and ethnic groups (Bell 2015). The gaps have been narrowing, but the country has not managed a significant progress. Even though the notion of significant in this context might be seen as a bit problematic. Some

local projects attain certain success in reducing poverty and build capacities in the local communities, but the efficiency of the financial help is decreasing due to incompetent management and the corruption (Rose-Ackerman 2005).

Leal & Miquilena (2011) argues that the policies for poverty eradication and for disaster risk reduction should not just focus on the poorest communities, but should be linked and incorporated into the development strategies on the national level. Because the disasters are a source of poverty as much as the poverty is the source of vulnerability to disasters.

3. Theoretical Framework

3.1 Key terms and definitions

The concept of disaster has undergone major changes over time, where the early perception of disasters was that they were an "act of God." Later the perception changed to disasters being viewed as an "act of man," highlighting that we are to blame for much of what is happening to us. The modern view is that a disaster is a product of the social organization, an "act of society." (Olsen, Boyesen, and Mathiesen, 2008).

Earthquakes are often referred to as a natural disaster, but this term is to some extent misleading and confusing. We define a disaster as:

A serious disruption of the functioning of a community or a society due to hazardous events interacting with conditions of vulnerability and exposure, leading to widespread human, material, economic and environmental losses and impacts (inspired by UNISDR 2009 and White et al. 2005).

A disaster is a complex mix of natural hazards and human actions. Understanding the link between natural hazards and the social conditions allowing it to transcend into a disaster, can be a significant contribution to reducing the potential connected to it. The term hazard is referring to an extreme event of nature, which has the potential to disrupt normal human life. A hazard is a

triggering event that "opens the space" for negative consequences if combined with the society's vulnerability. A hazard is defined as:

A dangerous phenomenon, substance, human activity or condition that may cause loss of life, injury or other health impacts, property damage, loss of livelihoods and services, social and economic disruption, or environmental damage (inspired by UNISDR 2009).

The state of the society to be open to the ramifications of the hazard is called vulnerability. We define vulnerability as characteristics of a system, community or society and the situation that influences their capacity to anticipate, cope with, resist and recover from the impact of natural hazards (inspired by Wisner et al. 2004).

The consequences of the disaster on the society depends on the human activities prior its occurrence (Ibid., Twigg 2004). The term resilience is often used as "bouncing back" (Wildavsky 1988), referring to the system returning to its functional state after a disaster, adapting to a changed context by reducing the vulnerability through the measures applied by the actors.

UNISDR (2005) defined resilience as:

The capacity of a system, community or society potentially exposed to hazards to adapt, by resisting or changing in order to reach and maintain an acceptable level of functioning and structure. This is determined by the degree to which the social system is capable of organizing itself to increase this capacity for learning from past disasters for better future protection and to improve risk reduction measures (UNISDR 2005).

The used definition of resilience focuses on the characteristics of the society that led to the disaster. These characteristics are determining factors to whether a hazard transcends into a disaster or not. The society's ability to increase capacity, through learning from previous disasters and preparing for future hazards are vital to reducing vulnerability and increase resilience. This connection provides an essential understanding that enables the analysis of the measures taken after a disaster. In the following, basic elements of the society and the influence, these have on a disaster is presented.

3.2 The Pressure and Release Model

To understand how disasters, occur, there is a need to study the social context and the state of vulnerability that led to the disaster. The Pressure and Release (PAR) model enables the identification of the main root causes, dynamic pressures, and unsafe conditions, which creates the

environment for a hazard to transcend into a disaster. The PAR-model is a complex model that is organizing the causal factors that constitute the vulnerability before the disaster. The historical perspective of the progression of the vulnerability could be seen as a too holistic and problematic in the way how to grasp the complexity. The historical basis of the root causes makes the time frame important, even though the whole model is seen as descriptive and static (Wisner et al. 2004). The different elements of the model are dynamic, being under constant change. According to Wisner et al. (2012), it is hard to differentiate causal linkages between those elements in a dynamic environment. The whole framework puts emphasis on the global and national processes that are creating the root causes. To address those processes is problematic, and the solution is always political in its nature (Wisner et al. 2004). The PAR model, thanks to its static nature, does not provide the sufficient description of how natural hazard interact with the society. Disaster is happening at the pressure point where the natural hazards meet the vulnerability. Explanation of the social causes of the vulnerability does not integrate it in the way, how the disasters affect people (Russell 2005).

3.2.1 The Progression of Vulnerability

The PAR-model describes the “progression of vulnerability” by linking the social conditions to vulnerability, presenting the disaster as a result of two opposing forces; the processes generating vulnerability on one side and the natural hazards on the other. The “pressure” in the model is the combination of both vulnerability and the exposure to the natural hazards.

In order to effectively manage risk, it is essential to understand how vulnerability is generated, how it increases, and how it builds up (Cardona et al. 2012).

A vulnerability is highly dynamic (Twigg 2015). Causal understanding of the progression of vulnerability is vital, from the root causes, through the dynamic pressures that create the unsafe condition people live in and thus create the vulnerability. Acknowledging the complexity of the model and many factors that are taking part in the progression of vulnerability. We chose to focus on factors that we find useful to illustrate the main sources of vulnerability that should/could be addressed by INGOs during the housing reconstruction in Nepal.

The root causes

The root causes are the general set of processes within the society and the world economy (Wisner et al. 2004). They are objects produced in a specific time and place and can be viewed as a "part of the society or culture." The root causes occurred in the past, but are affecting the society in the

present. The root causes are embodied in the whole economic, cultural and historical context of the country. Thus, culture can be seen as an outcome of hazards over time, influencing the society by motivating people to develop capacities to learn from them, and therefore make themselves more resilient (Krüger et al. 2015). It defines the acceptability of the risk in the society, also in between different groups or castes (ibid). The understanding of the culture is essential to consider while working on vulnerability reduction in a certain context (Twigg 2015). The most important in relation to increasing vulnerability are economic, demographic and political processes. Those affect the allocation and distribution of power and resources between different groups in the society (Birkmann 2006). For many people, their vulnerability is a result of the actions of other people. Those who are economically marginal or are living in the environmentally marginal conditions may be seen as less important for those who are in power (Wisner et al. 2004)

Dynamic pressures

Dynamic pressures are the momentary manifestations of general economic, social and political patterns in the society. They are resulting in processes and activities that channel the root causes into particular forms of unsafe conditions in the present, related to different types of hazards (Birkmann 2006, Wisner et al. 2004). The main dynamic pressures in Nepal are the lack of local institutions and local economy that are closely connected to poverty as an important dynamic pressure. The vulnerability of the people is hard to measure, but people are living in the vulnerable conditions that are usually connected to poverty. The effects are much more visible through the housing conditions and living standards of the poor (Gunewardena and Schuller 2008).

Unsafe conditions

According to Blaikie et al. (1994) the unsafe conditions are the specific expressions of the vulnerability of the people facing the hazard. In the case of earthquakes, those could be building standards, skills regarding aspects of building safety, the income level of the households, and location of settlements related to seismic risk. The unsafe conditions depend on the initial level of well-being of the people and their access to resources.

Low-income households

Low-income households are especially vulnerable to natural hazards. The people tend to prioritize their basic needs and choose not to invest in self-protection against hazards on a big scale. A limited amount of financial resources is normal in rural household, results in short-term

investments in livelihoods. Long term investments in insurance against potential loss in the future may not be seen as relevant in the periods before the disaster. The existing self-protection in the rural areas is very hazard specific. Construction of houses that are earthquake-safe is not necessary efficient against other natural hazards and the villages in Nepal are usually prone to many hazards. They are mostly agricultural relying on the nature to produce the crops that they can later exchange for cash. Households with limited resources are often left vulnerable, living in unsafe locations. This forces them to rely on external help in matters of self-protection against the hazards (ibid).

Hazardous location of settlements and livelihoods

The hazardous location of housing, typology of houses and construction are affected by the lack of economic resources, space or the effective protection from the state. The location of livelihoods is often not chosen but are determined by the culture. This is typical for parts of India and Nepal, where the caste system, integrated with the Hindu religion, although being affected by modernity, still influences the life of many people. The outcome of the system is culturally justified discrimination against the low caste people, whose poverty is legitimized in a cultural sense (Krüger et al 2015).

An example can be the insufficient implementation of building codes in the economically marginalized areas. People weigh the risk related to hazards against the opportunities and benefits gained from the "unsafe" livelihoods. People in both rural and urban areas will often prioritize livelihood opportunities over the danger connected to disaster risk (Cannon 2008)

Failed implementation of building codes and local building tradition

Most of the damages to houses and loss of lives during an earthquake is a result of the ignorance of the tested rules of the past or the seismic codes of the present. Throughout the centuries of exposure to earthquakes people in rural areas of Himalaya have adapted their house designs to minimize the damage or loss of the lives. Those traditional seismic technologies are usually ignored by the modern building codes. The minimal focus of the formal building codes on the rural non-engineered structures that may represent 60 to 70 percent of the population is typical for the developing countries (Krüger et al. 2015).

3.2.2 Release the pressure

The 'release' part of the PAR model is based on the way the vulnerabilities should be addressed to reduce the pressure. To follow the causal chain back to the root causes, to address the sources of vulnerability. Instead of focusing on the hazard itself or just on reducing of the unsafe conditions (Wisner et al. 2012). The whole model set the focus on the national and global level while addressing the root causes by changing political and economic systems that are seen as main sources of vulnerability, although according to Cannon (2008) many dynamic pressures and unsafe conditions might also be determined by local context. Answering the earthquake damage is the development of the resilient housing.

Application of risk-reducing concepts such as **build back better** and **resilient housing** into the housing reconstruction is an important part of the reduction the vulnerabilities before the next earthquake and therefore the release the existing pressures.

Build Back Better

"The progression of vulnerability" highlights several elements that contribute to vulnerability, thus allowing hazards to transcend into a disaster. When a disaster strikes, it is common to request international assistance for relief. The transition from relief to recovery and reconstruction, and their connection to the sustainable development is a crucial issue for humanitarian assistance. The term reconstruction in the traditional way, meaning to build back, would result in the "reconstruction of vulnerability" with the elements that led to the disaster in the first place (Anderson & Woodrow 1998; Lyons 2009). The term "Build Back Better" is a concept that has been applied to bring development closer to recovery after disasters. The Sendai Framework for Disaster Risk Reduction 2015-2030 (SFA) was adopted by the UN in 2015, succeeding Hyogo Framework for Action (HFA). The adjustment, or addition in prioritizing, was the inclusion of Build Back Better in Disaster Risk Reduction related reconstruction.

In the post-disaster recovery, rehabilitation and reconstruction phase, it is critical to prevent the creation of and to reduce disaster risk by "Building Back Better" and increasing public education and awareness of disaster risk (UNISDR 2015, p. 14).

Modern disasters have revealed the need for preventive measures in the recovery and reconstruction, to reduce the vulnerabilities of future hazards (Ibid). The term Build Back Better is an approach with possibilities to act beyond the common associations of reconstruction, but the term can also be too general. "Better" can be difficult to define. To measure the result of a

reconstruction process based on the term “better” can be difficult. The term Build Back Better has multiple interpretations, whereas “Safer” is more clear with the focus on the safety features of the housing within the objective of post-disaster reconstruction. Therefore, narrowing it to the Build Back Safer, which is the concept that is more connected just to the house reconstruction and reducing the risks related to natural hazards. Where "Safer" considers all the measures in the house construction that reduce the vulnerability and therefore is much easier to measure (Kennedy et al. 2008).

Resilient housing

The term resilient housing has not been clearly defined in the literature in relation to post-disaster reconstruction. However, there seems to exist a common perception that the objective of resilient housing is to reduce the negative consequences of the hazard, rather than to prevent the hazard (ISET 2012., Tyler and Moench 2012). According to Tran 2015 several authors have emphasized the connection between housing reconstruction after disasters and long-term resilience for housing. The authors state that aspects with potential to increase resilience can be identified in the reconstruction period. Resilient housing focuses on two things; first, the structural capacity of the construction needs to be able to withstand a future earthquake. The second is related to awareness and capacity building, increasing community resilience in relation to the specific hazard. The focus is on adaptive capacities, the capacity to absorb the effects caused by hazards is central (ISET 2012, Tyler and Moench 2012). This can be related to the technical construction, meaning a structure that can absorb the effects of an earthquake. The second is related to the socioeconomic part of the reconstruction, meaning the different measures that are directed towards the community. Examples of such measures can be local participation in the reconstruction, awareness programs that focus on risk perception in relation to earthquakes, the inclusion of cultural and religious aspects, etc. According to Schilderman and Lyons (2011), people and their habitat should be the important focus of the reconstruction, connecting resilient housing to the concept of building back better.

3.3. Housing reconstruction after disaster

Every disaster is different depending on the context of the affected country. The reconstruction after the disaster is a complex process, requiring multi-sectoral involvement, significant resources and a wide range of skills (Da Silva 2010). The process consists of a *long chain of social, economic, technological, environmental, political and other interactions* (Baradan 2006, p. 1).

Those complexities in relation to the post-disaster context of the country must be considered while planning the reconstruction assistance by the humanitarian organizations (Da Silva 2010).

Housing reconstruction creates an opportunity to reduce the vulnerability of the households, but it may also leave them even more vulnerable (Fayazi et al. 2015). To understand the vulnerabilities and the needs of the affected communities, the accurate post-disaster assessment plays the key role in the planning of the proper response. There are many types of assistance to the housing reconstruction that the humanitarian organizations can provide. Those should be dimensioned according to the needs of the affected community and are usually based on available resources, institutional knowledge and capacity of the agency (Da Silva 2010). On the other hand, in the house reconstruction, funding is the key issue. Disasters usually exceed the coping capacity of the local governments, especially in developing countries, so they must rely on external capacities and funding's (Ikaputra 2012). The quality of the house reconstruction depends on the quality of the masons, the design of the houses, quality and availability of skills and materials in the community and on the proper implementation of building standards (Da Silva 2010).

House and housing reconstruction

The importance of understanding the difference between house, - and housing reconstruction is an imperative factor influencing the efficiency of vulnerability reduction through the reconstruction process. Twigg (2015) distinguishes between house and housing reconstruction, where houses are just physical structures, and housing is the arena of social and economic life. Focus on only house reconstruction can be problematic because this can lead to the construction of houses without regard for how this will improve social and economic conditions or the relations inside the community. To succeed in disaster recovery, there is a need to focus on pre-disaster fragilities, addressing socio-economic and institutional aspects of the society. Post-disaster reconstruction should strive towards increased resilience of the people, reducing vulnerability in its wider sense on the social community level.

3.4 Role of INGOs in the housing reconstruction

International assistance plays a central part of the reconstruction after disasters, especially in developing countries. The government is responsible for the reconstruction, at the same time the government might be responsible for the hazard turning into a disaster, through lack of success in implementing efforts to reduce vulnerability. It is common that government institutions in developing countries are weak or missing, or they lack technical capacity needed to reconstruct

safer (Lyons 2009, Kennedy et al. 2008). INGOs on the other hand, often have the technical knowledge, but their role can be challenged by the lack of local, and cultural knowledge and customs. For reconstruction to be sustainable it should build on local capacity, either through the governmental institutions at a national or local level or directly to the affected people through owner-driven reconstruction (Anderson 1999).

Awareness and capacity building

Allen (2006) claims that social and political aspects of vulnerability need to be addressed to reduce the vulnerability before the next disaster is coming. The work with the disaster management is reducing those vulnerabilities through the local capacity building. Increasing the capacities of the local communities and organizations to build the resilience and hence reduce the impacts of the disaster (Palakudiyil and Todd 2003). Comfort et al. (1999) stressed the importance of the multi-level information exchange, increasing the capacity on the local level through training and capacity building initiatives and the focus on promoting the local responsibility for the risk-reducing strategies on the community level. The perception of building materials and practices on the local community level plays the most important role in the way how and what type of buildings are constructed and may often result in an unsafe house construction (Palakudiyil and Todd 2003). Important tools to improve those perceptions into the direction of earthquake-safer housing are the awareness campaigns. Those are motivating the target groups to become active in their own planning based on "educated" decisions, where the right type of knowledge plays the key role (Vye 2007). The role of INGOs in the reducing vulnerability should, therefore, be training, awareness building and helping to establish a clear coordination of disaster response responsibilities (UNISDR 2015).

INGOs and the Government

The international community often contributes to the reconstruction, providing necessary funding for the host government. If the technical and institutional experience and knowledge are present in the governmental bodies, the donors can contribute to a reconstruction of "red" houses through the government. The alternative is a more direct approach where the INGOs are assisting the people directly with the physical reconstruction. It can be challenging if the government is left out of the equation. The presence of the INGOs can either strengthen the capacity as a whole, or create problems between the government, the people, and other INGOs, or both at the same time. If government institutions and politicians experience a lack of control or having difficulties with

identifying with the program, the government can oppose against the work of the INGO, disallowing them to work in the affected area. The roles of government and INGOs are dependent on the negotiations among actors and therefore are not always clearly defined, this affects policy design and implementation and further development. Understanding of the relationships between the state and INGOs is, therefore, important to understand the processes influencing the actual reconstruction (Lyons 2009).

INGOs are dependent on the funding from donors. Funding for Disaster Risk Reduction is the main factors that affect the mainstreaming of the organizational culture and because the funding is usually assigned to a certain type of activities, so the organization makes it part of their agenda and therefore losing a bit of their independence. The press on the good performance in relation to further funding plays important role in the work of the aid organizations. In many cases, the fundraising imperative may start to dominate the moral one (Krüger et al. 2015).

The protection of citizen's lives is foremost the duty and responsibility of the government of the affected country (Mubah 2013). Disaster management depends on a strong legal and institutional framework, making governance the key instrument for the policy making. The post-disaster housing reconstruction can be the main challenge for governance, because of the political dimension, time pressure and the amount of the stakeholders involved (Smart 2014).

In the first phase, just after the disaster, before the planning during the response period, the main action expected from the government related to the organization of the house reconstruction is the analysis of "damage and needs" (Baradan 2006). Later make the information available for the planning process and couple the planned response to the needs of the affected communities.

Cooperation and coordination between INGOs and Government

Shaw (2014) emphasizes the importance of the quality of this partnership between the government and INGOs, for the successful risk reduction through the reconstruction after a disaster. Every type of partnership is based on trust and defined responsibilities while sharing the same objective. The roles of different stakeholders in the housing should be based on the international frameworks.

Partnership-building is not simple or straightforward: it requires a great deal of time, negotiation, sustained effort, transparency, trust, commitment and institutional support (Twigg 2015).

The quality of the partnership is affecting the communication and coordination and the dynamics in the whole system. The lack of trust in governmental structures, especially in the case of weak states may create big problems for the INGOs and their projects implementation.

In many cases, there exists a lack of cooperation and even the sense of competitiveness between the government and INGOs and INGOs themselves. Those conflicting interests together with the lack of expertise between different stakeholders reduce their willingness to be coordinated and therefore can hinder the safer reconstruction (Badri et al. 2006). Mubah (2013) identified three potential sources of conflicts between government and NGOs during the reconstruction. First the difference in viewpoints, where NGOs feels restricted through authoritative control of the government and the government views NGOs as overly critical to its policies (Behera 2002). Second is the local government's incapability to respond quickly to the disaster. Third, the INGOs staff can ignore the local disaster resources and local governmental structures in the affected areas. Creating a gap in understanding of the local vulnerabilities and utilizing the local resources.

Another problem in the successful disaster management according to Twigg (2015) is the distance between the disaster specialists and people working on long-term sustainable development programs, resulting in a fragmented system, where each of the parts is isolated from the others. Knowledge about the availability of local resources, the capacity of the local officials and the local people participation are the key factors that determine the quality of risk reduction under the reconstruction (Rubin et al. 1985). The increasing demands, especially on the horizontal coordination, after disasters in many countries of South Asia, has led to the establishment of new governmental bodies guiding the process of reconstruction, instead of relying just on the existing institutions (Shaw 2014). The idea is that the new institution can overcome the bureaucratic obstacles connected to the existing institutions and hence reduce the reaction time. However, the establishment and building capacity of such an institution can also be time-consuming, and the pressure for quick measures is strong after the disaster (Inam 2005).

3.5 Factors affecting resilience of the community during the housing reconstruction

According to Opdyke and Javernick-Will (2014), there exist three main factors influencing the resilience of the community during the reconstruction after a disaster: training, community participation, and coordination.

Trainings

For a successful reconstruction, there is a need for the parties to possess fundamental skills in the tasks they are performing. The international actors are coming with a new set of skills based on the experience from the previous crisis and are focused on the resilience building. Those new building techniques that aim to reduce pre-disaster vulnerabilities, requiring many actors from the government to construction workers and community members, to acquire the new type of knowledge, or adjust the existing knowledge to the new circumstances. Training is a critical measure to transfer this type of knowledge to stakeholders, focusing on the safe construction as much as on the capacity building of the communities to maintain the sustainability of the efforts (ibid). In general, trainings are usually divided into two types: on- and off-site (Tabassi and Bakar 2009). On-site training is usually used for the construction workforce and provide the practical on hand experience with the material and techniques. Necessary skills are learned under the supervision and through the interaction with the environment and context. Off-site training usually consists of classroom lectures, film, and simulation exercises. Using abstract concepts of potential situations, connecting them to possible solutions in the process of learning. In both types of training, the frequent communication between technical staff and the labor force plays an essential role for the successful knowledge transfer (Opdyke and Javernick-Will 2014).

In developing countries, the context in which the training is happening plays an important role. Organized and systematic formal training connected to the authority of the trainer may have different levels of knowledge transfer than informal methods (Jayawardane and Gunawardena 1998).

Community Participation

The involvement of the affected communities in the vulnerability reduction is according to the literature the key factor in achieving the success (Lawther 2009). There has been a long tradition of viewing participation as community members having a 'voice' in decision making (Williams 2004). Opdyke and Javernick-Will (2014) see this view as problematic, because it focuses just on political governance, neglecting a resource-focused perspective. The involvement of many actors, stakeholders, goals that are typical for the disaster reconstruction is affecting the project performance (Chang et al. 2011). Ignoring the reconstruction projects` financial, labor, and material sides, when planning can have big consequences for the communities.

Community participation can be seen as a process or as an objective (Parfitt 2004). INGOs using participation as an objective in their programming, are using their influence on existing political, economic, and cultural structures, seeking the change to promote equality in the communities. Participation as a process is using the existing local structures, trying to fit within what is culturally acceptable, proceeding with the project means and goals. Participation is often seeking to implement 'local knowledge' into the projects, viewing local knowledge as something extractable from the local context (Opdyke and Javernick-Will 2014).

Community risk mitigation is based on consultations with the local communities, to develop policies, use techniques and actions which they can organize themselves and manage with some additional outside technical assistance (Harris 2005). This bottom-up approach integrates the local knowledge and resources with the knowledge and resources of the INGOs. This can contribute to the strengthening of the local community's resilience and the acceptance among the locals toward INGOs, as a joint force working towards reducing the vulnerability.

According to Opdyke and Javernick-Will (2014), there exist three main potential flaws in the projects that can have potentially dramatic consequences for the communities in the rebuilding process; the lack of consideration and appropriate valuation of the resources of local populations in participatory techniques; the failure to represent all sectors of a population; and the lack of translation from involvement into empowerment.

Coordination

The reconstruction process involves many stakeholders from the international community, different levels of the government and communities themselves. The need for the organization of those activities and creating the systematic relation between them is essential. Each of the organizations follows its individual goals that are often affecting the quality of the partnership between organizations becoming a source of the potential conflicts (Shapira 2002). The main challenges for the coordination in post-disaster environments is to align those parties into a working system, under the stressful conditions, limited time and organizational challenges (Kapucu 2005). The good coordination has a positive effect on the recovery process. But for many

large-scale disasters, poor coordination is typical, resulting in the huge differences in recovery provision, for example, the Haiti earthquake in 2010 (Opdyke and Javernick-Will 2014).

3.6 Theoretical summary:

The first part of the theoretical chapter focuses on the development of vulnerability before the earthquake and how those elements permit the transition from hazard to disaster. The political and economic processes are the underlying factors that open for this transition, through dynamic pressures. Poverty is the main dynamic pressure, a shaping force that holds the particular households trapped in a state of vulnerability that manifest in unsafe conditions. The elements of PAR will be used to discuss the different activities of INGOs and the Government in the reconstruction process, and the relation between them.

Resilient housing consists of two main aspects. The first one is related to the construction of earthquake safe house, attempting to meet the benchmarks of Build Back Better. The practical training applied by INGOs are measures to change established building traditions, to ensure that the reconstructed houses are built in accordance with the building code which is designed to withstand earthquakes. The second part is related to the community and the socio-economic conditions people are living in. Addressing the root causes and unsafe conditions through community awareness and participation programs is key to succeeding in increasing resilience in the communities, through increased capacity in relation to vulnerability reduction in the communities. The measures that INGOs implement to address those socioeconomic conditions, through building capacity and awareness of earthquakes in the communities, is the central point for this thesis. The outcome of the reconstruction depends on the quality of the partnership, informational exchange, and coordination. The relation between INGOs and government is the key factor in the reconstruction process. The main measures that INGOs can use to increase the resilience of the communities are awareness programs and training. Those programs are based on community participation.

4. Research design and Methodology

This chapter accounts for the methodological choices we've made through the research process, to relate them to our research problem. The purpose is to make methodological decisions explicit, ensure coherence between these and ontological assumptions and to open for critical evaluations.

4.1 Research design

A research design is a logical plan for getting from here to there (Yin 2014, p. 28), where here refers to the initial questions the researcher set out to answer, and there are the conclusions and answers to those questions. Blaikie (2009) says that a research design should describe the choices taken during the research process, and account for those choices. We chose a qualitative research method in the purpose to study the subject:

INGOs contribution to the reconstruction of resilient housing in Nepal.

This led us to the choice of applying a case study design, which according to Bryman and Burgess (1999) is one of the most common frameworks for qualitative research. The research is based on a wide range of data, including document studies, both semi-structured and unstructured interviews and observations from the field. The ability to work with such diverse data is according to Yin (2014) the strength of case studies, which he defines as:

a study that investigates a contemporary phenomenon in depth and in its real-world context (ibid, p. 237).

The design of the study is single case and embedded. Single case because we study the process of housing reconstruction in Nepal (after 2015 earthquake). Embedded because the interaction between the INGOs and the system is happening on many levels from government to local communities.

4.1.1 Research Strategy

Kruke (2012) argues that the more complex the problem is, the closer one needs to be to grasp the dynamics of it. It early became apparent that it was necessary to conduct qualitative research in a real-life context. Most activities and projects related to our chosen subject were organized from Kathmandu, where most of INGOs and Government headquarters are located. Most of the organizations are gathered in this area, so we meant that it would be a good place to start our fieldwork. Although, most of the programs were taking place in the rural areas. The urban context was out of the primary focus of the INGOs. For this purpose, we chose Gorkha District as the second location. There are three reasons for this choice. It was the epicenter of the earthquake, it

was amongst the most affected, second it is a place where many reconstruction activities are happening, and because we got into the contact with the organizations working there. The location of our fieldwork is based on those two districts. After reading rapports and articles from the other countries affected by the disasters and the role of the international humanitarian organization in the relief and recovery, we decided to use an exploratory inductive strategy. To grasp the complexity of the social world in the foreign country, to explain such a complex phenomenon as the housing reconstruction system in Nepal, our primary objective was to understand the context of the affected country. In the light of the context, we tried to understand the concept of resilience and resilient housing in Nepal, to facilitate how the main actors perceive their roles and status in the system, and further how the quality of their relationships affects their work on reducing the existing vulnerabilities in the housing sector. Our interpretation of how INGOs can contribute to increasing resilience, through the housing reconstruction is based on those.

4.1.2 Research process

The five stages present the essential segments in the research process. The preparations for the thesis started in April 2015 with the research proposal. Since the early planning phase, we meant that it was necessary for the fieldwork to be divided into two field trips. The first from the 16th November to the 7th of December 2015, and the second was from 5th - 30th of Mars 2016.

First stage - Norway

The primary focus in this stage was document studies. Our intention was to gain knowledge of the different practices in disaster reconstruction and recovery, including theoretical and practical aspects of INGO and the governmental role. We particularly focused on earthquakes in other countries. We chose to conduct real-life fieldwork in an environment that was new to us. This meant that we also had to approach the new context, to understand the processes and activities considering the meaning they have for the people. The document study enabled the formulation of the initial research problem and support questions. The second focus was to establish contact with organizations working in earthquake reconstruction in Nepal. To overcome the geographical distance to get the answer from our potential contacts, was much more challenging than we expected. To respond to phones and emails from students is probably not the priority for people working in disaster areas. It was challenging, but we managed to establish contact with help from our supervisor. We finished all the practical preparations for the field trip, allowing our focus during the trip to revolve around our research.

Second stage - Nepal

This was our first encounter with Nepal. The idea behind our first field-trip can be divided into three objectives. The first was to achieve a practical understanding of the context the reconstruction was surrounded by. The second was to conduct our initial data collection through interaction with relevant organizations, informants, and their projects, which we hoped would provide insight into the practical aspects of earthquake reconstruction. The final was to provide us better understanding of the system of reconstruction. This field-trip provided useful insight into the nuances and challenges connected to the practical aspects of the INGOs role, and their connection to the government in the reconstruction system. Although in the beginning we were challenged by the difficulties connected to getting access. Those will be presented later.

Third stage - Norway

The third stage consisted of re-evaluating and adjusting the research problem, based on the experiences from the first field-trip. It became apparent that the decision to conduct two field trips proved to be beneficial. We realized that we needed to conduct more document studies and starting the theoretical research, at the same time follow up on our informants. We adjusted our hypothesis, based on the collected data, to decide which phenomena we would focus on further.

Fourth stage - Nepal

The second field trip enabled us to target our research inquiry, to build a solid foundation for our research, through the data collection. It became apparent that the groundwork from the other stages benefitted the data collection in this stage.

Fifth stage - Norway

The fifth stage consist of the final endeavor, building a theoretical framework based on the empirical findings, to explain the observed phenomena. This is the foundation of the analysis.

4.2 Fieldwork and access

We started our preparations and established contact with potential organizations and informants in September - October 2015. According to Berg and Lune (2012), the central problem in field investigations is *getting in*, which was proven to be right upon our arrival. The preparations

presented in the **first stage** were, unfortunately, unsuccessful in the meaning of getting into the contact with some organizations. Some of our informants had left the country, and others did not respond to our attempts to establish contact. To get access to the field, we had to start over. We started in Kathmandu, a strategic location which provided geographical access to many organizations and actors in the reconstruction system. It also enabled the understanding of the reconstruction system on the national level. The nature of an inductive case study approach claims for collection of data to proceed to derive generalizations from there. This approach may have contributed to our challenge of getting access, through the fact that our informants were unable to grasp the understanding of our research, a result of our research methodology. The process of getting access was far more challenging than we had expected before arriving to Nepal. The challenges related to getting access can be described with Meeuwisse et al. (2010) term doorkeepers. At the beginning of our fieldwork in Nepal, it seemed that the potential doorkeepers "neglected to open any doors," due to their limited time in a stressful period, and we also may have failed to provide information regarding the understanding of our research and their potential role in it. It was not before halfway into the first fieldwork; we felt we were getting somewhere. It turned when we could participate in a Shelter Cluster meeting, where key personnel in the reconstruction process participated in sharing experiences and discuss coordination, etc. This was our first encounter with people who later contributed to our thesis, through allowing and facilitating our interactions with informants working on relevant projects. The means to achieve access to the field is best described as luck, hard work and endurance.

4.2.1 Informants

The aim was to gather a representative selection of informants from both national and local level in the government and of INGOs. The focus on the national level was to ensure the understanding of the political and organizational factors affecting the implementation of projects on the local level. Our informants come from different organizations with their own objectives, within the system, most of them relying on the governmental acceptance regarding their projects. There is one exception, one of the organizations have been present in Nepal for many years. This organization has a unique relationship with the government, which allow them to operate with limited government oversight and restrictions throughout their project implementation. We have been in contact with 18 different organizations, governmental institutions, and international organs. Those can further be divided into national and local level presence in Nepal, with the headquarter coordinating the projects from Kathmandu, and the part of the practical

implementation in the more affected areas. Also, some of the organizations have several nationalities that function as a sub-organization. In total, this makes the number of organizations to 25, without dividing between local and national level in Nepal. We have 66 informants that have been interviewed, while 14 of them have had a central role in the thesis. They represent 10 different organizations, selected based on their relevance to our research, and their willingness to participate in it. We have decided not to follow up some informants that expressed interest in our research, simply because we did not see any relevancy in their projects or activities after the initial interviews. All informants have been anonymized, a choice that has no impact on the thesis and the conclusions. Beside the informants from the 10 organization, we have conducted two group interviews and 22 interviews with local people and participants in the different training programs. Organizations. We have conducted interviews with seven social mobilizers, one VDC secretary, and two CBS Engineers that worked on the CBS Assessment.

After the document study and formulation of the research problem, we chose to contact international organizations working with disaster risk mitigation in Nepal. We established contact with Nepal Risk Reduction Consortium at the beginning of our first field trip. Their role is mostly advocating and their running projects focused on other topics than earthquakes. We decided to abandon this direction after a few mostly context related interviews. After some unsuccessful attempts to contact International Organization for Migration (IOM), one of the main actors in the Shelter Cluster, by e-mail and phone, we decided to act and showed up in the offices responsible for shelter. We manage to get into the contact with people working for the Shelter Cluster working with the recovery and winterization. Because of the high turnover of staff, the people working on the relief would not continue with the reconstruction, so we ended up with several mostly context related interviews, focusing on the situation in Nepal, damaged areas, internally displaced persons (IDPs) and the relation between INGOs and local institutions. The breakthrough happened with our participation in Shelter cluster meeting. This led us to the key contacts from CRS, Red Cross (Belgian), NSET and JICA. After informative both formal and informal interviews with our contacts we decided to follow the CRS activities in Gorkha, thanks to the good coverage of this district by INGOs and already running projects and training. Also thanks to relatively easy accessibility from Kathmandu.

After our arrival to Gorkha city, we were allocated to our future key informant working as a project coordinator for CRS, educated civil engineer from Nepal. Through the informal

conversations, we managed to get more insight into the Nepal culture and the building tradition with the visual demonstration on our travel to the training that we visited in Taple. Also, the practical demonstration of the functionality of the model structures in Bunkut.

To follow the governmental part of the system we took a contact with the Departments responsible for the house construction: DUDBC and DOLIDAR. Interviews were focused on the system of reconstruction and the role of INGOs and government in it. Because the NRA wasn't established yet in that time, the conditions were not clear and therefore the uncertainty around the financial support and the role of the departments was visible. We also visited and interviewed British, Danish and Norwegian national societies of Red Cross. Before leaving Nepal, to get contacts with the establish HRRP, we visited the future main coordinator to introduce ourselves and for one formal interview. In the time between our trips we were in contact with our Red Cross and HRRP informants and we were receiving status updates about the situation. Our CRS contact in Gorkha also became the HRRP coordinator for the Gorkha district in the meantime.

After arrival in Kathmandu, we focused on getting in contact with NRA. But because of the problematic start with institutional capacity building in that moment, there was not enough staff, and the available people were too busy to meet us. We hence started with our HRRP informant to get the status update on the whole process and the information about the NRA and the cooperation between HRRP, INGOs, and NRA. After that, we followed our Red Cross and CRS/HRRP informants to the Gorkha district. After the status update, the HRRP staff offered us to use the HRRP offices in Gorkha city, which was helpful because of the relatively stable internet connection. The first activity that we visited with our Red Cross informants was the last session of PASSA in one of the wards of Sreenatkoth VDC. During our observation, we managed to get some insight into the dynamic of participation, that we later discuss with our contacts and followed by few questions to local participants. Through the interview with the facilitator, we got information about the evaluation of the effects of the whole PASSA sessions. During our stay in Gorkha we observed two HRRP meeting with the INGOs, NGOs and DUDBC presented. Also, one meeting with representatives from affected communities with NGOS and local government about the establishment of the new committee. During the informal conversation over tea afterward, we discuss our observations. We also met the JICA and CARE contacts there. CARE focused mostly on Wash sector; we decided to follow JICA training in Barpak. The CARE offered us a drive to Barpak, where we met with the JICA training coordinator in Barpak to observe the

training of the masons. He also helped us as an interpreter, when interviewing the masons in training and later as a both interpreter and guide through the Barpak to interview the already trained masons and house owners on the construction sites. Using project personnel as the interpreters will be reflected over in the reliability chapter. We also interviewed some local people directly, but our access to information was in some cases limited by their English skills, as much as by our inability to communicate in Nepalese. After returning from Barpak, we went to visit Bunkut with one of the CRS engineers who also helped us with the translation. First, we met the social mobilisers in those VDCs and later we managed to interview trained masons, house owners, and the VDC secretary. The next day we have arranged meeting with a social mobiliser from Taple while using interpreter hired by us. We managed to spend a day on walking between the different wards in the Taple VDC seeing the model structures, interviewing house owners about the trainings and their knowledge of the model structures. Later we interviewed people after semi-skilled mason and 10 key messages for build back safer (BBS) training, with the help of the model structures. After our observations, we added some new and adjusted some old questions for our interviews to address aspects we felt were important for our understanding of the problematic. And the next day we proceeded to semi-structured official interview with our main contacts from CRS and HRRP. The last evening in Gorkha during our dinner in the hotel we met project coordinator working for Helvetas. The Helvetas approach was new for us. Their absence on the HRRP meetings in Gorkha and their presence in other VDCs than those we had visited, made them not visible for us. Sadly, we didn't have time to visit their training/building sites so we managed to get basic info during the informal conversation and we arranged a meeting in Helvetas main office in Kathmandu. Later during the interview in Kathmandu, we managed to get contact to one of our most important informants at NRA. After an interview about the dimensions of cooperation between INGOs and government (NRA and other departments), we decided that another interview with DUDBC is necessary to update the information. We also interviewed our informants from Norwegian, American and Nepali Red Cross societies.

4.3 Qualitative research methods for data collection

This research pursues the qualitative methodology, which according to Blaikie (2009) allows data collection in words instead of numbers, at the same time bringing us deeper into the subject of the research. We used qualitative interviews and participant observation, the two most common techniques for data collection of qualitative studies to gather data (Bryman 2008).

4.3.1 Interviews

The most central method in our research has been the interviews, which were applied to collect data from local people, INGOs, and government personnel. Most of the interviews with local people have been conducted in the areas they live in, in some of the cases close to the ruins of their destroyed homes. Interviews with INGO and government personnel have been conducted both at the organization's headquarters and in affected areas where the projects are. We have also used informal locations, like coffee shops, etc., which have allowed us to get to know some of the people we have interviewed. This has given us a better understanding of the challenges the interviewed people face, at the same time allowing them to know us. Altogether, this strategy has contributed to better access to our informants and therefore data. We have used an audio-recorder for most of our interviews. All the informants allowed us to record the interviews, some after explaining that they will be anonymized. Some of the informants seemed uncomfortable when first asked about the recording. This can be a result of fear of providing inaccurate answers, or fear of being recorded if they have harmful statements regarding the government or the present organizations that are helping the people in the affected areas. However, people usually loosened up after the first questions. In a few cases, informants asked us to turn it off when they were asked to share their opinion of organizations or the government's role in the reconstruction. The answers to those questions have not been included in the thesis, mostly due to irrelevancy to the large picture. The most used method has been the semi-structured interviews, which allowed us to have some control and to stay on track during the interviews. The other method was the unscheduled or unplanned interviews in the form of conversations, that occurred frequently in between the projects and in the field. Examples of this can be when CRS staff invited us to dinner, join their celebration of “Holi”, or when we were invited to “Jazz Night” at the local bar by some INGOs from IOM, and many other occasions. Those were very useful for understanding of the everyday life, the roles, status and perceptions of the INGOs. In addition, we felt that we got a greater understanding of the challenges they experience.

Creating the **interview guide** was a challenging task. The project proposal based on the document studies showed to be particularly challenging to grasp for the informants, which forced several changes throughout the research. Language and interpretation of the questions and answers were a challenge in the beginning. This was solved through our decision to have informal talks with the key informants, as mentioned above. We have different interview guides for different actors, in aims to compare and understand the different roles of the actors. The interview guide has been work in progress throughout the thesis. The initial questions in it, may have been the reason for

the challenges related to getting access to informants. As we got a better understanding of the context, projects and the different roles in the reconstruction, the interview guide evolved. This resulted in the fact that the final interviews, to some extent, have a more significant role for the thesis than the first interviews. Those also helped us to see the answers of the previously committed interviews in a new light. The more knowledge and effort put into the interview guide, the more interesting questions and answers appeared.

4.3.2 Participant observation

This method allows the researcher to become involved in the activities of the case being studied (Yin 2014). Gold (1958) distinguish between participant-as-observer, and observer-as-participant. Our role has been observer-as-participant, a role that allows us to get close to the projects and informants, without having a given role besides our role as researchers. In participant observation, the researcher is the primary source of data collection. This method claims for thorough considerations regarding the reliability and validity of the collected data.

4.3.3 Document studies

The document study was the initial method of data collection. The literature review of the INGOs role in the reconstruction, with a particularly focus on earthquakes, was conducted to gain knowledge of different practices and previous experiences that enhance the understanding of the processes in Nepal. Being familiar with similarities and differences from previous earthquakes and disasters have been central to understand why some methods have been chosen, and others not. In addition, the contextual research prior to the first field trip, and in between them, gave us a deeper understanding of the context in which research took place in. The document studies range from news from different countries to official government legislations, rapports and research articles from other disaster areas, with emphasis mostly on earthquakes.

4.4 Challenges in the data collection process

4.4.1 Practical challenges

The most challenging part of this thesis revolved around getting access, which has been discussed above. Other challenges have been the distance to the affected areas the projects are located, language and understanding the context the reconstruction has been taking place in. The challenge related to distance can be divided into two parts, some of the areas are very remote, with limited

opportunities for transportation. The access to the projects required our INGO informants in their role of "doorkeepers." The INGO informants played a key role as interpreters, especially in our initial introduction to the projects. After being allowed to access and get familiar with the projects and people taking part in them, we decided to travel on our own, with our own interpreter, to see if this would change the results from our data collection. This is discussed in the following chapter. The timeframe was to some extent a challenge in the second field trip. A few informants, which had been unavailable to us, responded and agreed to have interviews in the last couple of days. The opportunity to interview several informants, that we now consider having a central role in our research, resulted in some stressful final days.

4.4.2 Ethical considerations

The question of doing research of vulnerable people was a consideration we did in the early stage of the research period. After our interaction with the "affected people," we decided not to focus on this subject, because of their capacity and motivation to take control of their own lives. The affected people we have encountered, are resourceful people that for the most part needs knowledge and financial resources to prepare for a future disaster. We think it is very likely that they would be able to recover from the earthquake on their own. The question is if they can fully rebuild their lives as it was before the earthquake. When we met the affected people, they showed interest in our research, showed their hospitality and willingness to share everything they owned, including shelters and meals. Their hospitality was a lesson the Norwegian society should experience. Also, the potential benefits from the research contributed to balance the ethical considerations in favor of conducting the research. The informants have all been anonymized, as presented above.

4.4.3 Dangerous Fieldwork

Apart from the roads and transportation used to reach the remote areas, we did not take any significant risk during our fieldwork.

4.5 Data reduction and analysis

The data collection has been challenging due to lots of changes among different government institutions and INGOs. We finished the data collection in May 2016. The analysis of the collected data has been work in progress through the research process. However, most of the analysis was conducted in the **fifth stage**, after the final transcription of the interviews. The collected data have

been sorted according to our research questions, at the same time being consistently evaluated throughout the timeframe of the research. We have been challenged by the luxurious problem of having many informants from several organizations with different approaches. This brought a lot of work for us in the systematization of the data, but also contributed to a solid foundation for the thesis.

In this type of disaster, when you have access to large sources of information, the problem is to know what to deal with. One must try to reach a compromise where you have a reasonably good understanding of what the situation is because there is so much information floating around (Informant Red Cross).

The semi-structured interviews allowed us to have some control and to stay on track during the process. The different categories of the interview guide have been challenged by overlapping answers, which have resulted in several adjustments through the research period.

4.6 Reflecting on reliability and validity

4.6.1 Reliability

Reliability refers to the consistency of research procedures and to the possibility that by repeating those in eventual next research we would come to the same findings and conclusions (Yin 2014). This assumes that the study object is not changing. In the case of qualitative studies that are focusing on the social world and interpretation of meanings in it, the human behavior is dynamic, and no study of it can be replicated exactly (LeCompte & Goetz, 1982). The need for explication is according to Flick (1998) the way how to increase the reliability of the qualitative research. To increase the reliability of our research, we focused on detailed description of the motivation and reasoning behind our methodological choices. The sources of data and our finding has been made explicit, and the whole research process with its challenges has been detailly described in the previous chapters. The reliability of our informants might be challenged by our status as students, and our presence at training sessions may have affected the result. Another status consideration is connected to our role as foreigners from the developed world, is the potential exotic position we had in Nepal. This was especially apparent in the rural areas. We have considered that some of the interviewed people have thought we were potential donors. Also, the usage of the project staff as an interpreter might influence the replies of the informants in the case of training participant. Aware of this problem we decided to hire our own interpreter. Finding one in Gorkha district that would be able to understand the technical terms without being engaged in the reconstruction,

seemed to be a challenging task. The data from Taple interviews may be challenged by the limited technical terms knowledge of our interpreter. In qualitative interviews, informants can be unwilling to talk about sensitive topics or tend to present themselves and their organizations in more positive light (Postholm 2010). Our informants talked openly about sensitive topics, even though in a few cases we needed to switch off the voice-recorder. We experienced that in the Nepali settings it is not allowed to talk bad about your own organization. Therefore, the representatives of the authorities were less open to talk about negative sides of the problematic related to their organization.

4.6.2 Internal validity

Internal validity in the case study is according to Yin (2014) the strength of the cause - effect link. The way how to strengthen internal variability is the triangulation during the data collection according to Ellefsen (1998) and Yin (2014), to answer the question of internal validity, also recommended using more than an individual source of data while choosing the case study. This thesis has combined various methods for the data collection to ensure the internal validity, from document studies, interviews to observations. Through interviews with INGOs, government institutions, HRRP, trained masons and house owners we managed to get the different perspectives on the various aspects of the housing reconstruction phenomena and DRR in Nepal. According to Höijer (1990), the uncontrollable subjectivity is the biggest danger for validity and reliability, and for the further generalization of the research. The whole process has been based on the cooperation of two persons, with a different background, experience, expectations, and ideas. The interview guides were built under discussion and later during the interviews both were asking questions. All interviews were recorded, with a few exceptions when we needed to switch off the recorder for a few minutes. Later every interview and every observation were discussed and reflected over. The empirical findings and discussion have been presented in the separate chapter, to distinguish between empirical part and our own interpretation as researchers.

4.6.3 External validity

External variability refers to the extent to which the results of the case study can be generalized beyond the context of the original study (Yin 2014). The generalization of the conclusions from one study and their transferability to a different context is the main concern for the external validity (Lincoln and Guba 1985). Case studies are usually deriving from the context and are

therefore context-specific, so the transference and generalization of the conclusions to another context is difficult. Though this thesis may present a certain basis for generalization because of its focus on the international organizations working on the disaster risk mitigation in Nepal. The transfer of the knowledge is possible to similar post-catastrophic housing reconstruction situation, although the effect of the context of affected country play an important role and there is always uncertainty connected to such a complex phenomenon. Very often the same INGOs are working in different crisis, often with the same staff, having the same or similar programming. The informants from INGOs were chosen based on their connection to the topic of the thesis also on their availability. The local informants were sampled randomly in relation to the certain topic we wanted to study.

4.7 Reflection on the research design - Strength and weaknesses

As researchers coming from a different country with limited knowledge about Nepal, and a different cultural background, the qualitative approach was an obvious choice for the research. A quantitative research approach could have provided quantifiable data on reconstruction. This could have increased the reliability of the thesis. Knowledge of the culture and language play a significant role in the understanding of the studied problematic. Therefore, we decided for a qualitative case study and inductive strategy. If we had sufficient knowledge about Nepal, housing reconstruction or disaster response before the research, the quantitative approach, and deductive strategy, may have been possibilities.

The choice of being flexible in relation to the research problem opened for possible adjustment throughout the research process. This was required to meet the different circumstances we faced during the research.

We had created an idea about the context before we arrived in Nepal, based on the document studies and literature review. Our potential presumptions about the context might have, to some extent, created some biases before our arrival. According to Blaikie (2010), the personality of the researcher is always present in the research and is influencing the data, it is impossible to produce any data without researcher's influence on it. Having this realization about our potential presumptions and biases in mind, we tried to be aware of those during the whole process. We always tried to take a step back and reflect on the situation, about the roles, statuses, and

motivations of the involved actors. During those reflections, it was particularly helpful that we were two. This was to avoid the potential effect those biases could have on our data collection and the conclusions we made.

Thanks to the division of the fieldwork into two trips we had enough time for the data collection, but it was stressful in the final days. We finished our data collection in May 2016. It is possible that changes coming afterward could affect the thesis and our conclusions, but to our knowledge, the possible effects are not significant.

5. Findings

On April 25th, a 7.6 magnitude earthquake struck Nepal, and was followed by several aftershocks of different intensity. The largest aftershock occurred on the 12th May. The result of the earthquakes was colossal damages in central parts of the country. The epicenter was in Gorkha district in central Nepal, and the earthquake impacted 14 of the 75 districts. About 8000 people were killed, over 21.000 injured and more than 712 000 households were affected (Shelter Cluster Nepal 2015). Some villages in the rural areas were destroyed.

The immediate response

In the flash appeal published April 29th 2015, the government requested \$422 million in international to assistance, to provide lifesaving assistance and protection ⁶. \$281.3 million were received ⁷. After the request, about 330 humanitarian agencies started working in Nepal ⁸, and the Shelter Cluster (SC) took a leading role in the humanitarian response. The Nepal Shelter Cluster (NSC) was led by the Department of Urban Development and Building Construction (DUDBC) on the government side, and the International Federation of the Red Cross (IFRC) and Nepal Red Cross Society (NRCS) on the side of INGOs (Global Shelter Cluster 2015). NSC had a

⁶ UNOCHA (2015a)

⁷ UNOCHA (N.D)

⁸ UNOCHA (2015a)

key role in early relief, and in the transition to recovery and reconstruction, prior to the establishment of the Housing Reconstruction and Recovery Platform (HRRP).

5.1 Determining factors - Why were the consequences so severe

The Nepal Building Code

The most important part in earthquake prevention is the construction of houses that can withstand earthquakes. It is impossible to prevent an earthquake; the best-case scenario is to prepare and mitigate to reduce consequences. The Nepal Building Code was drafted after the earthquake in 1994⁹. The government has unsuccessfully tried to implement it the building codes since then (Bremmer 2015). The building code contains earthquake resilient structures, although the focus is on construction of new houses, not the incorporation of earthquake resilient elements in the existing ones. The damages from the earthquake is mostly a result of the lack in enforcement of the code, the quality of the code is sufficient according to our informants. The main reason is that government has failed to prioritize implementation of the code, especially in the rural areas.

House design

Many of the destroyed houses were built without the earthquake resistant elements included in the building code. After the previous large scale earthquake in 1934, there was a massive reconstruction. One of our informant in Bunkut told us his parents experienced the quake and the reconstruction after it. Unlike the current reconstruction, the process was not organized by the government. The reconstruction was mostly conducted by the affected people, without external support in relation to safe house construction.

They just build the houses in the way they thought it may be safe (Informant Bunkut).

During our travels in the rural areas, the project engineers showed and explained how the building tradition in that time was eroded. Although there existed some knowledge about the seismic elements, their proper use and function in the construction was forgotten.

⁹ Nepal Earthquake Clearinghouse (2015)

The choice of building typology is usually determined by the price of the building material and the accessibility on the local level. Transport of external materials is also influencing the house design, especially in the rural areas, with limited infrastructure. This has led to a building typology that are mostly adobe structures, brick/stone masonry with mud mortar, brick/stone masonry with cement mortar, and wooden structures. The dominating house design in the urban areas are reinforced cement concrete (RCC) buildings (Aon Benfield 2015). Lack of space and expensive building material has led to the tradition of including new generations in the household, making the construction heavier. In the Kathmandu valley 3-5 stories are typical. This house design often consists of a ground floor functioning as a shop, with a kitchen on the top. The constructions are usually not dimensioned to carry more than one or two more floors, which increase the vulnerability of the household.

The house design in the urban areas of Gorkha is like that of Kathmandu. In Gorkha City most of the buildings are traditional RCC, which mostly survived without significant damage. In the rural areas, stone masonry with mud mortar or adobe and wooden structures are typical, mainly because of the availability of those resources. Most people in rural areas have used stone design, while the wealthier people are building with RCC. The building material for this type of buildings is much more expensive, but those are also in higher rate insured (Aon Benfield 2015). Rural areas in Gorkha district can be divided into three main areas according to the typology of the houses. The first is the Taple and Bunkut, VDCs close to the Gorkha capital. In those areas, most of the houses were destroyed by the earthquake. Those VDCs are usually using stone and mud masonry, and the usage of wood depends on its accessibility to the community.

For example, in Bunkut, the community owns part of the forest, where they can harvest wood to use in the reconstruction. In the case of Taple, that does not have access to community forest, our informants stated that the wood is more expensive than cement.

The second area are the mountainous areas within 5 hours driving range from Gorkha capital. Barpak, the area of the epicenter for the 2015 earthquake is one of those. This area was severely damaged by the earthquake, and almost all houses were destroyed. Dry masonry house is typical for this area. Limited infrastructure makes the transportation of material very expensive, which usually double the cost of the materials.

There is an increasing trend in both previously named areas in the favor of the RCC houses. Many engineers we talked to were skeptical to those, the quality of the material (bricks and concrete) is in general uneven, and the building codes were not usually followed. Another important point was that it is difficult to see the mini-cracks in this type of building, making it hard to evaluate the state of the building. This type of building is more vulnerable in relation to the proper placing of the pillars, the quality of concrete and reinforcement. Most of the RCC structures survived the earthquake without obvious harm, or just with small crack. This shifted the public opinion into the direction of those, even those are usually much more expensive and has been traditionally connected to the richer families or governmental houses.

Lack of local institutions in rural areas

The VDC-secretary is the central connection between the government and the local community. The challenging geography in Nepal has resulted in VDCs and wards that are several hours apart. The long distance between those and the government/capital, results in the lack of local institutions. This is additionally challenged by the limited infrastructure that connects them. The government should be represented in every VDC, by the VDC-secretary. However, this is usually a local politician who function as a connection between the government and the people. The isolated of the rural areas, due to terrain and limited transportation is resulting in VDC secretaries that are not present in their office. In the northern parts of Gorkha, close to the Himalaya, the office is in the Gorkha capital. Several hours apart.

It is difficult. We don't have certain person who is dealing with the government. We have ward secretary who lives in Gorkha city, he visited just occasionally (Informant Barpak).

The lack of local institutions to connect the government with the local communities in the rural areas, is well illustrated by the statement that when people from villages are travelling to Kathmandu, they saying that they are going to Nepal. In addition, the VDC secretary had no responsibilities regarding the building code prior to the earthquake, to transfer knowledge of the building code to the rural areas. One of our informants expressed frustration regarding the government's limited presence in the small communities:

Sometimes the authorities don't care that much about the small communities. Communities take action, they would like to work with government (Informant Red Cross)

Limited income opportunities in the rural areas

In the rural areas, people are mostly farmers depending on nature. Many of them have no education, which limits their job possibilities. The literacy rate is especially low among the older generation, according to our informants. This group constitute a large part of the house owners in the rural areas. Many of the villages are located on hillsides, because of the potential for farming the area provides, and sources of the drinkable water. The topography and nature that enables them to cover their basic needs, also influences the level of vulnerability, in an area that are highly exposed to earthquakes and landslides. The products from the farming are used in the households or exchanged for other products and the rest is sold. The income opportunities are limited. The people depend on their livelihood, which enables them to cover their basic needs, but are mostly unable to provide significant income beyond this.

5.2 The housing reconstruction system

5.2.1 Role of the Government

Disaster risk reduction is according to the HFA primarily the responsibility of the government. Housing reconstruction presents the opportunity to reduce the existing vulnerabilities. The housing reconstruction in the affected areas is a complex and challenging task, with many involved organizations. The foundation was intended to be a damage assessment from the National Planning Commission. The objective of the assessments was to examine the extent of earthquake damages, and the needs of the different sectors. It was named Post Disaster Needs Assessment (PDNA). However, the PNDA failed to provide the sufficient data as the foundation of the reconstruction:

It was a guess figure. It is not 200% wrong, but it is 40% wrong. In some areas, it is inflated, in some areas people are left out. It was not a sound basis for the subsidy now, it also did not inform the technical assistance, because it did not actually look at the reasons for the damage. And it did not collect socioeconomic data as a basis for targeting vulnerability or support (Informant NRA).

The political and geographical distance between the different districts, VDCs and the central government may have contributed to the insufficient information regarding the extent of damage. This resulted in the paradoxical situation that the government chose to rely on the INGOs to provide the information about their activities and situation from the field.

They said that they don't have any idea what is happening on the field, so they want to know what are we doing and where (Informant Red Cross).

As a result, the government had to do a new assessment, which became the responsibility of the Central Bureau of Statistics (CBS). This should fill in the gaps of the first one, to determine what extent the affected houses were damaged by the earthquake, and if the house owners are eligible for financial support from the government. The results of the two assessments showed massive destruction in the house sector, which consequently led to the realization of the massive shortage in the workforce for the reconstruction.

Still not sure about the final numbers of houses for reconstruction, but even if it's just 400 000, it will require large number of trained masons (Informant HRRP, National).

The people in the rural areas have traditionally built their houses without the help of engineers or technical advisory. Although there is no concept of certified masons in the villages, there are certain people that are functioning as a community masons, people that usually build their own houses and help others in the community to build theirs. The masons are just men, while women worked in support for the reconstruction. The existing masons are people who have experience with construction, but most of them lack knowledge related to the content of the building code. The traditional seismic techniques that were used in the old temples have been forgotten and not used in the rural houses.

We have buildings that are 500 years old. We have the technology. We are just trying to implement similar things. For the rural houses, we don't need to go far away, for example Tibet (Nepal Center for Earthquake Technology, engineer).

The CBS assessment forms the foundation for National Reconstruction Authority's (NRA) role in the reconstruction. The NRA is an extraordinary body that was established to lead and coordinate the reconstruction with overall responsibility. It is a temporarily body that are established for a five-year period, with the responsibility to complete the recovery and reconstruction in this period. NRA is placed above the line ministries during the reconstruction period. Although the line ministries and their respective departments to some extent are responsible for the same tasks as under normal conditions, the NRA have the coordinating role and the overall responsibilities.

There are two line ministries that have responsibilities in the resilient housing reconstruction process. The Ministry of Urban Development (MOUD) is responsible for the technical part of the reconstruction. MOUD's role in the house reconstruction process is placed at the Department of Urban Development and Building Codes (DUDBC), which have the responsibility for building codes and their implementation. This responsibility consists of the curriculum of different training sessions, such as the training of trainers (TOT), which is a program that aims to educate people who will facilitate and implement the training of masons (TOM) and the semi-skilled masons program. The curriculum is based on the Nepal Building Code.

In addition, the DUDBC has published a catalogue of 17 house models, that constitutes recommended designs. This allows the affected people to choose a design according to availability of materials, building customs in the specific areas, and their financial capacity. The goal is to ensure that the resources from the reconstruction process are used in a sustainable way on resilient housing. The catalogues were partially distributed through local government representatives (VDC-secretaries) in the districts. VDC secretaries are local politicians, that don't have technical background or experience related to construction. Many of our informants were also confused by the different information regarding governmental materials coming from different actors and media, having problems to understand the technical aspects. In addition, most of the design were referred as too expensive and not accustomed to the need of the people, according to several informants in the communities.

The Ministry of Federal Affairs and Local Development (MoFALD) is responsible for the distribution of financial resources. The system is organized to ensure the technical criteria from the DUDBC, and the objective to secure that the reconstructed houses are resilient in relation to future earthquakes. The house reconstruction process is owner-driven, a method allowing the affected people to be responsible for the reconstruction of their own houses, at the same time building the capacity of the people through the trainings. The people participating in TOM are selected from the local communities of Nepal. One of our informants presented the benefits of the owner-driven approach, a method that have been successful in other disaster areas:

I think once the policy, guidelines and the framework and roles and responsibilities are clear, owner driven approach is very fast. We have seen that. First, we tried the donor driven, or contract, driven in Sri Lanka. Then we tried the owner driven, and the owner driven is much more fast. This we have seen in China, it is much faster (Informant Red Cross).

Subsidy for reconstruction

The financial resources for the reconstruction is based on a uniform government subsidy of 200,000 rupees. This subsidy is based on the eligibility criteria from the CBS assessment, and the technical criteria for the constructed houses from DUDBC. The subsidy is divided into three installments. The first installment is followed by two inspections (from DUDBC) that will ensure that the earthquake-resistant standards of construction are being applied (National Reconstruction Authority 2016). The subsidy has been a challenge, because the affected people don't get the necessary information on the local level.

The 200,000 rupees' subsidy for the affected households is not enough for reconstruction of the full house, according to our contacts. The nature of a subsidy claims for additional financing, either by loan or from their savings. Many people cannot afford this. It has been discussed if INGOs can provide direct financial support for the house. This was one of the main point during the planning for the reconstruction. One of our informants was conflicted regarding this issue:

The government of Nepal wishes that all of the money for the reconstruction should go through them. This is difficult for the Red Cross, because we lose our independence. This is kind of a signal of what they want us to do and what not to do. From a coordinating perspective, the government controlling the reconstruction is the best solution (Informant Red Cross)

The financial support for the reconstruction of the housing sector is the responsibility of the Department of Local Infrastructure and Agricultural Roads (DoLIDAR), a government department under the Ministry of Federal Affairs and Local Development (MoFALD). The system is designed to secure the technical capacity of the reconstructed houses. If a house owner is eligible for subsidy based on the CBS assessment, they get the financial subsidy from DoLIDAR. In addition to the subsidy, the government has announced a top-of loan that have a low-interest rate. These loans are guaranteed by the government, through arrangements with the private banking sector (National Reconstruction Authority 2016).

Resource centers

In a reaction to the gaps in the reconstruction system, the government decided to establish resource centers on the local level, to further connection between the national and local level institutions. Our informant in the NRA explained this choice:

You can't assume a role for them if it hasn't been an election in sixteen years and there is no VDC, VDC secretary' in 175 or 30% of the offices. Districts are understaffed, district officials moved around every second week (Informant NRA, talking about local district officials)

The objective of the resource centers is to hire technical and bureaucratic staff (etc.) to ease the implementation of the building code on the local level. An informant in the DUDBC expressed that the intention was to keep those institutions after the reconstruction period, but this has not been a clear policy to this point. He was also concerned that the staff would be unwilling to settle in the remote areas after the reconstruction was completed. Those plans were not put into action when we finished the fieldwork.

5.2.2 Role of the International Non-Governmental Organizations

In disaster affected countries, there is many different approaches for the INGOs. In Nepal, the INGOs must follow the government system of reconstruction. This means that all projects must be approved by the government, and follow the technical criteria's in the building code. This because the government is concerned about the adaptation to the context regarding the technical capacity of the INGOs. Another reason is the limited role the INGOs play in the housing reconstruction in comparison to the government.

All the INGOs together, we are supporting less than 5 % of the houses. The government is doing 95%, supporting 700.000 houses. They must have their roles, regulations, policy and guidelines (Informant Red Cross).

Awareness and Capacity Building

In the early phase of the reconstruction, many INGOs planned to provide direct financial resources to the affected people. However, the limited financial resources available, combined with large number of affected households, forced INGOs to use their resources in other ways, to reach more people.

We are talking about 700.000 households, multiplied by 2000 \$, it's like 4,5 Billion \$. All the INGOs here together may be have 200 million \$ (Informant Shelter Cluster, Gorkha).

Nepal is often affected by earthquakes, due to the country's location near the seismic plates. To secure that the people chose to rebuild earthquake resistant houses, many INGOs have chosen to facilitate awareness programs. The common denominator these is to ensure that the local people are aware of the risks and consequences related to earthquakes. One of our informants stressed the importance of this choice:

Awareness is more than the compensation or the subsidy. Without awareness, the money will be used on the unsafe construction again (Informant HRRP, National).

The project of 10 Key Messages for Build Back Safer is an example of those programs. It is mainstreamed to the entire population, with the objective to ensure that the people are aware of the existence of the earthquake resilient components. 10 Key Messages are based on the National Building Code. The difference between the 10 Key messages and other programs, such as the training of masons, is that it is directed toward the whole population, while the trainings are directed to the affected people.

Technical support for the trainings

The INGO personnel working in training of masons, or semi-skilled mason training have been educated and approved by a governmental program called Training of Trainers. The INGOs role in the reconstruction depends on the permission from different government authorities, such as NRA, DUDBC and MoFALD on both national and local level. INGOs have experience and capacity in relation to technical aspects of the reconstruction. The government plays the key role in relation to the technical approval of all the construction related measures. DUDBC is, as noted, the ministry responsible for the house design catalogue, the curriculum for the different trainings and the implementation and follow-up on the building code in the constructed houses. Although all INGOs activities should be approved also by NRA. INGOs role in the technical part of the reconstruction is therefore limited by the government. According to our informant from Nepal Red Cross, the Nepali engineers have sufficient knowledge about the building code, emphasizing that INGOs role is mainly as donors or additional capacity. The technical expertise INGO personnel bring must be adjusted to the Nepali context. The INGOs need to rely on the local technical personnel to implement their projects.

There is technical expertise, there is plenty in Nepal, but the donors also have expertise...Any foreign professionals must understand and be aware of the context of Nepal, our situation and practice, common procedure (Informant, Nepal Red Cross).

5.2.3 Coordination

Coverage of the Village Development Committees

The geography of the Nepal has created big problems in coverage for INGOs. Their presence in the VDCs are, to some extent, connected to their capacity to distribute relief materials and activities in the early stage after the earthquake. The government has the overall responsibility and control, through approving the activities and areas. In the beginning, this responsibility was coordinated by the local district government. The huge international presence made it difficult to stay in control of the organizations and their activities, because of their lack of capacity. This contributed to many duplications. Those gaps were to some extent filled during the Shelter Cluster period, but are still influencing the coverage in some VDCs, to some extent.

Thus, when the system transferred to the reconstruction, many of the INGOs were working in more than just one districts. At this point, all the proposed activities must be submitted to local district government, to coordinate the resources and avoid duplicities. But the newly established NRA play a more central role.

No organization can work without getting NRAs approval, but the problem is that other organizations already started to train masons, based on DUDBC curriculum, before forming NRA, DUDBC came with the curriculum, and it is necessary to train skilled masons, and everybody is training those people (Informant Catholic Relief Services).

The chaotic situation was illustrated by our informant from Red Cross informant, who stated that the government attempted to coordinate the reconstruction by giving organizations responsibilities of different areas. The limited information flow has resulted in organization having the impression of being responsible of a specific area, only to meet other organization already operating there. The flow of information is challenging, the many actors makes it hard to streamline information

The situation in Gorkha district is that INGOs are working in several VDCs, at the same time, usually not covering the whole areas, but cooperating with other INGOs and NGOs to increase the

coverage. The longer distance from the Gorkha capital, the accessibility is lower, as so is the coverage.

House Reconstruction Recovery Platform

The INGOs that are contributing in house reconstructions are organized in the Housing Recovery and Reconstruction Platform (HRRP). The participation in HRRP is voluntary, and the platform has no power over partner organizations.

HRRP is a platform for coordination, strategic planning and technical guidance to agencies involved in recovery and reconstruction and to support the Government of Nepal in coordinating the national reconstruction program (HRRP 2015).

HRRPs role consist of sharing information with all relevant stakeholders. NRA, DUDBC, HRRP partner organizations, local level authorities and representatives are examples of such stakeholders. Information about gaps of coverage, double coverage and relevant information about the affected people are examples of information the different stakeholders need to address the issues at hand. Sharing information through the HRRP can be the key to succeed in a complex reconstruction process.

The partner organizations in HRRP are all depending on the government to get access the affected areas. Organization that will contribute in the reconstruction must request a Memorandum of Understanding (MoU) with the NRA. The MoU consist of the specific plans, which area, financial arrangements, etc. Then the organization must provide a booklet including the plans, meeting the criterion from the NRA, local level government institutions, criteria from the two ministries and their sub-departments. If the NRA is satisfied with the plans, and they meet all the criteria's, the MoU is signed and the humanitarian organization can start implementing their projects. The challenges are that this process takes much more time and is too restrictive.

NRA is too slow and too conservative. It is not opening space; they are locking things. They want to control things. There are so many projects, especially the colleagues from Europe and Australia and so on, it is very difficult for them, what they are doing. They have project ready, they have resources ready, they have people ready for almost five months. And they cannot work (Informant Helvetas).

The whole process of preparing the proposals for reconstruction activities is, according to our contacts in HRRP, long and consists of many meetings on both levels of the local government and partner organizations.

5.3 Measures implemented by the INGOs

5.3.1 Mason trainings

The main point of the mason training from INGOs is to integrate the building code into the practice of masons through training. In its basic form, the mason trainings are divided between skilled and semi-skilled. The building techniques taught in the mason trainings are mostly based on the 17 designs in the DUDBC catalogue. The INGOs trainings usually choose the building designs based on availability of materials, building custom/tradition and financial capacity on local level.

Skilled masons training

The skilled mason training curriculum consists of 7 days training. The focus is on the community masons that have experience and know the basic aspects, how to work with stone, timber etc. In the rural areas, the focus is mostly traditional stone-mud masonry with timber or cement banding. It is usual that the masons are paid for the participation. After the training the masons are ready for the reconstruction system, they are certified and put into a database that should be available at the local government offices. During the fieldwork in Barpak, we observed the skilled mason trainings and interviewed both current participants and already trained masons. The trained masons were working on the RCC houses. We also interviewed trained masons in Bunkut, where the whole community decided for one house design, after the discussion about the proposed design by the trained masons and social mobilisers.

JICA is doing 7 days training for skilled masons. They have included BBS messaging in the trainings, using a “theatre approach” and roleplay as a type of BBS awareness that is presented in the communities. They have 30 participants in the trainings, which are chosen by the people in the VDCs. They are trained in four different designs based on DUDBC curriculum. In general, the lower areas are the cement mortar design is prioritized, but in the remote areas the focus is on stone-mud or dry stone masonry. Earthquake safer elements incorporated into the training are:

The vertical layers of stones are now connected with cross stones. Number of bands horizontally increased. - floor, window, roof level and the corner bands. ...We teach them how the roof should be connected to the walls (Informant JICA).

After the trainings, JICA follow up the trained masons on the building sites, to secure the proper implementation of the new elements they have learned. Those are usually conducted by the technical staff in JICA or partner organizations.

The training by itself does not give perfect result. People are getting some knowledge during the training. We need to follow them afterwards, to correct the mistakes. Inspections of the technical persons (Informant JICA).

Semi-skilled masons training



Model structure in Bunkut (Photo: Mikael Johnsen).

The semi-skilled training last for 30 days, and is directed to people with little or no experience in construction. It focusses on the proper use of materials and how to prepare and work with them. This includes stone processing, mud preparation, digging foundations and concrete preparation. They also learn about the seismic components, how and where to place the bandings.

The training also includes an introduction of the 10 key messages. After the training, they are given a certificate and registered in their local district. The role of semi-skilled masons is to support the mason in the reconstruction, and to supervise the proper implementation of the earthquake safer elements during the process. The goal is to have at least one semi-skilled mason in every household.

According to our observations, female participation has been low in the semi-skilled mason trainings. According to facilitators of the trainings, there has been low number of female participants from the start and many of them dropped out during the trainings because of personal reasons. Our source from HRRP stated that the plan into the future is to have at least 30 per cent of female participants on the trainings.

House reconstruction during training

Helvetas has a different training approach than the other INGOs. Their trainings include 10 participants that reconstruct their own houses during training. They are supervised by technical personnel trainers hired by Helvetas, who ensures that earthquake safe techniques are used in the construction. The supervisors are usually Nepali contractors that get paid in stages, based on the number of houses constructed. The technical quality of the houses is checked and approved by Helvetas own engineers. If the constructed houses are not approved, the contractor's payment can be reduced or cancelled. The training lasts from 3-6 months, and the final payment is when the last house is approved. This method result in a finished house that people can live in. The idea is built upon neighbors that help each other to reconstruct their houses.

The preparations for the trainings started already in August 2015, while other organizations were waiting for the establishment of the NRA. The trainings started in January 2016 and was approved by the DUDBC. The different approach is possible because of their long-time involvement in Nepal. They have knowledge of the local context and a good connection with the involved ministries. This has allowed them to operate partially outside of the reconstruction system.

«It is our sixty years' anniversary in Nepal. We do not wait until government are ready, we are proactive and brings lessons and designs from other countries. We take risk in many areas, there was no building code approved, but we had regular and continuous interactions with the DUDBC. They were happy with our model, but they were not sure if it worked or not»
(Informant Helvetas)

After NRA was established, they demanded that the participants and projects to be approved through the uniform system. This can create potential problems for the beneficiaries, which demanded a political solution, based on negotiations between the donors and the government.

I also understand the local politics and how people make decisions. If you have very strict rules, then it is more likely that nobody will follow. If you have flexible rules, it is more likely that people will follow. The other thing is that NRA and the government is under lots of pressure from the donors (Informant, Helvetas).

There was a danger that the people won't get the necessary government approval and therefore are going to miss the right to get subsidy, but during our interviews with Helvetas, they stated that they were positive that their beneficiaries will get the subsidy.

5.3.2 Mainstreamed awareness and capacity building

Model structures are small models that is constructed in the affected areas. They include different building techniques, with the earthquake safe elements included. They are often in the form of a model house, or different parts of the foundation, like walls, bandings etc. They are usually located in the center of the VDC, or areas where many people can access them. They are constructed during the BBS programs, and the community takes part in the construction. Because of the owner driven approach, every single household is choosing own house design. Families makes those decisions based on the resources available. For the INGOs there is a necessity to cover the all possible type of construction to provide the households with the proper information about the seismic elements in different building techniques.



Mode structure with earthquake resistant RC banding (Photo: Mikael Johnsen)

At first our concept was timber banding, because they were building their houses with timber. But timber is very expensive in the VDCs close to Gorkha, because of low availability. We decided to use the concrete banding, we also plan to do a fully RCC model. We are not building only demo-houses, we are building panels, which will give multiple options to people (Informant CRS).

The social mobilisers in Taple and Bunkut stated that the people are very interested in the models, and are asking many questions about the purpose and function of the different parts, and their placement in the house construction.

10 Key Messages and Build Back Safer

The objective of these programs is to work with the community, to teach them the basics aspects of the safe constructions. The program is facilitated by the INGOs through social mobilisers selected from the communities. The BBS programs consist of a three-hour session with 25 participants, chosen by the community. The program also includes an orientation about the 10 Key Messages. The model structures are used as examples in in both programs. Social mobilisers are chosen from the villages so they can follow up awareness sessions, and later supervise the reconstruction with the technical team from the CRS.

The people were interested in participation in the trainings and were curious about the safer housing, but were complaining about the length of the session, according to the social mobilisers. The whole proposed system according the INGOs should be that every house construction will be led at least by one skilled certified mason with the support eventually supervision of one semi-skilled certified mason and the house owners. The owner should get the information about earthquake safe house construction from the 10 key messages/BBS trainings.

Participatory Approach for Safe Shelter Awareness (PASSA)

PASSA is a tool that was developed by Red Cross, to work with the local people. The objective is to reduce the vulnerabilities in the communities. The program consists of 8 activities that aims to give the communities knowledge of the hazard and vulnerabilities in the communities, and the means to reduce them. The program has a historical perspective. The program focus on the inclusion of marginalized people and the participants are selected to represent all groups in the community. The program starts with a community mapping, and categorize vulnerability and hazards in a risk matrix. This is used to reflect on how the vulnerability can affect them, and are followed by questions about means to reduce them.

«The risk matrix is new for the people, they are not used to that type of thinking. They have never seen a matrix before» (Informant Red Cross).



PASSA: Participants and INGO staff working on the risk matrix (Photo: Mikael Johnsen)

If the community fails to provide means, the trainers assist them. The session is completed with questions to check the progress the participants made, and a formulation of a plan that are send to the local government committees. The point is make the local authorities aware of the problem. The INGOs can follow up with resources and technical assistance, but this is based on a consideration to ensure that the community increases their own capacity. Our informant stated that the PASSA is gave good results in terms of knowledge:

«They start to understand why the hazards affect them, why they are so vulnerable»
(Informant Red Cross).

5.4 The main challenges for INGOs

5.4.1 Political challenges

Constitutional issues

At the time the government was planning the housing reconstruction, they were trying to approve the constitution, to resolve the issue that has been a concern for the countries for the last decade. The constitution was enacted in December 2015, but resulted in an unofficial import blockade from India, reducing the access to fuel and gas, resources Nepal is very dependent upon. That

created a lot of confusion between the organizations and delayed the whole system of housing reconstruction.

National Reconstruction Authority

The NRA was established because of the need for increased coordination and to lead the line ministries during the reconstruction. The establishment was affected by the lack of political consensus in Nepal, which held the reconstruction back several months. After the establishment, the challenge has been the different political allegiance of the ministries:

The political allegiance in “Ministry X” is the opposite of the NRA, so they don’t easily cooperate. Other ministries, I would say, is in allegiance with the NRA, they are in the same party or with the prime minister, they need NRA to succeed, others need it to fail. Or would like it to fail. People are playing out national politics here, this is not all about affected people or the common good, or collective responsibilities, not necessarily. The same thing happened in the Pakistan floods, as compared to the Pakistan earthquake (Informant NRA).

In the rural villages, many people are dependent on the subsidy to start the reconstruction of their houses. They don't see the information and trainings as coming in the right time, focusing rather on more recent problems, while waiting for financial support from the government.

The problem was not only with the NRA, it was the whole government system. They are too slow in responding to the situation (Informant Helvetas).

The pilot phase of the governmental subsidy distribution in Dolakha District is a good example of the political conflict. The local politicians attempted to take credit for the provision of the subsidy, prolonging the process for days.

5.4.2 Coordination

Many of the INGOs has expressed that the government limit their potential role in the reconstruction, while the affected people are in need for assistance. Several INGOs criticized the government for claiming control, and failing to prioritize the need of the people over the desire for power. Our interview with NRA gave a different understanding of the roles and distribution of power. The informant stated that societal safety is a process of change over long time. The government is responsible for the Nepali people, and it will not abandon the traditional ways of

organizing the responsibilities. The INGOs can contribute with resources to the affected people, through the established governing system in Nepal.

That relationship is not on understanding the need for flexibility and continuous need for discussion, evolving it together, it is more about “I am in charge, you submit. I approve or I stop you”. It is a control and power relationship. So, a lot of what we are working on is to change the basis of the discussion, and the perception of the relationship to then arrive on different sets of instruments. It is “limit, limit, control” and “you are here for your money. Tell us what you are going to do with your money and build according to our building codes” (Informant, NRA).

5.4.3 Acceptance

The people in rural areas are used to receive direct help from humanitarian organizations, which has resulted in communities that expecting that they will get the help with the reconstruction. Another challenge is the traditional way of doing things in the communities, where every change is difficult due to cultural constraints. People are skeptical to new methods and materials. The informants expressed a lack of trust in the government, because of their lack of presence and interest. This has made many local people skeptical to the governmental house design catalogue.

They want to build their own design, they want to create their own house, rather than a design from some people sitting in Kathmandu (Minar).

Every successful attempt must gain the acceptance of the community, which is difficult. Everything starts with education, how you educate people, how you educate children. For me it is more about people centered early warning systems, if you have systems installed from the government level or INGOs working in this direction, it is always the matter of how the people understand the message. If the message is wrongly understood, then things are wrong somewhere (Informant Helvetas).

To answer to need of the affected people to rebuild their houses, led some INGOs to start their projects before the announcement of the recovery framework. Those based their programs on the continuous flow of information that were debated and, to some extent, presented from the different parts of the government to INGOs. There were large amounts of contradictory information available in this period, challenging the affected people's trust in the INGOs and the government. Because of this, some chose to start rebuilding their homes, without any regard of the resilient elements the reconstruction system aims to incorporate. Some of the people also neglect to participate in the trainings:

Why should I learn this, if I don't have the money to build the house? I will learn it later, when I will have the money (Informant Red Cross).

5.4.4 Whole communities vs. The most vulnerable

People in affected areas have different needs in relation to the reconstruction of their homes and livelihood. The government system related to the reconstruction is uniform, meaning that the financial and technical assistance will be the same whether the affected people have resources, or not. The system does not consider the differences in the wealth and access to resources that exist in Nepal.

I had a meeting with the CEO of NRA, it is funny, he said that we would like to treat every citizen equally. Then, if I am from Gorkha and have this kind of job, and she is from Gorkha, my neighbor, but different job, a farmer, they treat us equally. He said that they don't give extra money to anybody, the size is 200.000 and we don't let anybody get more than 200.000. What is more ridiculous than this? People have different capacities and needs (Informant Helvetas).

An informant at the NRA stated that they have a clear intention to provide a supplementary subsidy, but the priority is to get the broader subsidy out. The informant further expressed concerns related to the financial cost of targeting vulnerable people, the political difficulty of targeting people and the pressure on the assessor's deciding who will get a supplementary subsidy. This is a very difficult issue, according to our contact.

That is politics. It is very difficult, because we are working in humanitarian organization, thinking humanitarian principles and values ... If the government are providing 200.000 rupees it is difficult for vulnerable, most vulnerable people to build their house. In that case organizations and government should think in a clever way to deal with all the cross-cutting issues for selecting the most vulnerable people, to provide assistance so that they can rebuild with the help of others. (Informant HRRP)

In the situation prior to the launching of the subsidy, the INGOs were not allowed to provide direct financial help. Helvetas choose the participants for their trainings based on their ability to get the resources for the construction of the house. But they try to include the most vulnerable, people with little resources that are still enough to build the house.

We look for the people living below poverty or slightly above. In this project, there is big diversity. We try to support people who are really poor, to build their house first, but they cannot

arrange the materials, because it is owner led approach ... to be very pragmatic and practical; let's find the people below average or slightly above the poverty line (Informant Helvetas).

The delay in the reconstruction system has a result the focus on awareness programs that were focused mostly on the whole communities, instead of the most vulnerable in the communities.

We are helping the most vulnerable. At the same time, we need to provide awareness and education to all people. If they can do all those things in terms of financial, manpower and education, we should try both type of intervention, one is for the vulnerable people, the other for the full communities. Other persons that are not enrolled in those programs can also get indirect benefits from that program. That will be good (Informant HRRP)

6. Discussion

6.1 Identifying the main sources of vulnerability

Based on the collected data about the vulnerability in Nepal, the socio-economic and political systems are the main root causes, that channel through dynamic pressures and cause the unsafe conditions people live in. Those conditions have increased their susceptibility to natural hazards.

The Nepal Building Code insufficient implementation

The building code of 2005 has been insufficiently implemented in Nepal, due to lack of resources on both the government side and of the people, especially in rural areas. The socio-economic and political system contribute to poverty and marginalization, which created the unsafe conditions, that combined with earthquake resulted in the disaster. The lack of governmental investments and education regarding seismic safer construction techniques, have resulted in limited progress in relation to reducing the vulnerability towards earthquakes, despite the high earthquake frequency. Lack of access to resources and information on the local level, can result in activities that destroys future opportunities for development and risk management.

Physically absent local institutions in the rural areas, and their sometimes insufficient connection to the government complicates the transfer of resources and information from the top of the hierarchy to the local level. This has also been the case of the building code implementation. The absent VDC secretaries in remote areas contribute to prolonged communication between the government and the communities. Functional local institutions as a network of social relations in the rural areas, are a key to the successful implementation of development and risk management. Local institutions play a central role in disaster preparedness and relief after a disaster, but also further in the risk reduction (ADPC 2003). The distance is well illustrated by the statement that when people from rural areas travel to Kathmandu, they say that they are travelling to Nepal, illustrating the lack of confidence in the government and their role in providing and distributing resources for the whole country.

Building techniques

The knowledge of the building codes is limited in the rural areas, where most constructions are non-engineered and built without masons certified or educated in seismic construction. The construction is built upon the experience they have gained through participation in house constructions in the communities, which is based on the local building tradition. The traditional local building techniques has limited focus on earthquake resilient elements. The type of the house construction in Gorkha has been determined by the wealth of the family and access to other resources. That is why we see poverty as a main dynamic pressure, affecting the choices of the individual households in the direction of unsafe conditions. In the rural areas, there exists wide range of potential house construction technologies that can be chosen according to the wealth of the family. The RCC buildings that survived the earthquake, can potentially be a new source of vulnerability. The damages in the structural elements of the construction that are not obvious now, may trigger further harm over time, as unsafe conditions.

The price of the building material and its transportation is another factor influencing the house design. In the mountainous areas where timber and cement are unavailable, the transport may cost more than the materials itself. In these areas, dry stone masonry is typical, apart from the wealthier families who prefer the RCC construction. The social pressure to show the wealth of the family, combined with pressure on modernization, compromises the traditional seismic building traditions in many Asian countries (Krüger et al. 2015). In the case of Nepal, the limited access to timber

and other resources in the rural areas, had gradually corroded the seismic building tradition. The practical aspects of the everyday life have been prioritized over protection from the earthquake. The combination of low income and livelihood dependency in the areas exposed to earthquakes, have resulted in people being unable to prioritize measures to reduce their vulnerability on their own. In the most affected areas, the people have limited opportunities to relocate, because they depend on their livelihood to cover their basic needs. Lack of access to resources on a local level can result in activities that destroys future opportunities for development and risk management. The effect those have on people living in unsafe conditions can result in a lack of disaster preparedness and insufficient implementation of risk reduction measures after the disaster.

6.2 How is the reconstruction system addressing the existing vulnerabilities in relation to housing?

To properly address the main sources of vulnerability it is necessary to focus on the situation of whole communities and the livelihoods of the particular households, not just on building safer house structures. The housing reconstruction system must address the existing vulnerabilities in relation to housing, to release the pressure connected to those.

6.2.1 Housing reconstruction

Releasing the pressure

The amount of international organizations present in Nepal, and the financial resources connected to the reconstruction, is a potential game changer that increased the need for coordination. The Shelter Cluster, and later the HRRP were established to coordinate between the government and the humanitarian organizations. The results from the PDNA were a base for the policy making for the reconstruction process on the governmental side. The establishment of NRA was supposed to be the governmental answer to the need for a higher institution to coordinate the actors and provide the frameworks for the reconstruction.

The reconstruction after disaster is a complex process, consisting of long chain of interactions between the environment and the technological, social and political systems (Baradan 2006). In the theoretical chapter, housing reconstruction is presented as an opportunity that can reduce vulnerability of the households, but also have the potential to leave households more vulnerable if

failing to reduce the vulnerabilities. The PDNA is the key factor in linking the post-disaster recovery to the reconstruction, creating a basis for the planning and use of resources. The results of the assessment should have contained knowledge of what constitutes vulnerability, enabling the households and core actors to address those vulnerabilities. In the case of Nepal, the damage assessment was completed rapidly, and is a basis for the government's request for international assistance and donations shortly after the disaster. According to our informant from NRA, the PDNA does not reflect the existing vulnerabilities in the local communities. It was made in a hurry and affected by the political decision to satisfy all affected communities and households. The reason was to avoid potential conflicts and to increase the political influence of the government in the rural villages. The informant expressed concerns regarding the political challenges of targeting people according to their vulnerability to collect income data about the households. This approach would also put a lot of pressure on the assessors. In addition, people may not be willing to talk about their wealth, when there is a possibility to get financial resources for the house reconstruction.

Concept of Resilient Housing

To answer the damage from the earthquake, risk reduction has been incorporated into the reconstruction. The technical construction of the house is just one part of the resilience building in the housing reconstruction. The housing concept incorporated next to the physical house structures, including also the socio-economic aspects as a part of the measure directed toward the whole communities. Based on the collected data from the housing reconstruction, we identified five key features incorporated into the process of building resilient housing: house design, implementation of building codes through trainings, increasing community awareness, social mobilization and financial support. To properly address the vulnerabilities coming from the socio-economic conditions, the communities and reconstruction program implementers, must realize the relation between those conditions and the disaster potential they incorporate. The elements of resilient housing are connected to the different roles and measures of the core actors in the reconstruction.

6.2.2 The role of government

The role of the government in the resilient housing reconstruction consist of organizing the whole system. The NRA formulates the framework and is responsible for the entire system. The

challenges for reconstruction, related to the establishment of NRA are further discussed in chapter 6.3. The other role of the government is to fill the gaps in the local institutions, by mobilization of the human resources. The third is the provision of the financial subsidy for the affected households.

Releasing the Pressure of Poverty

According to Wisner et al. (2004), the nature of the root causes of vulnerability must be addressed on a national level through changes in the political system. The dynamic pressure of poverty is translating the existing root causes into the unsafe conditions. We identified poverty as the most significant dynamic pressure. The systematic poverty coming from the political and economic system must be addressed in the long term, through changes in the political system. The immediate pressure of poverty results in a lack of financial resources in the households, which can be reduced by the financial support. The uniform subsidy has been promised to all the affected households approved by the CBS assessment. The problematic with the uniform approach is that it fails to reflect the economic situation of the particular households. It provides the same amount of the money to all. The subsidy has potential to cover most the affected households, with the premises that the affected households contributes with the remaining cost. This approach can reduce the risk for creating potential conflicts on the local level. For the poorest people, with low income, this can result in partial, or totally unsuccessful reconstruction, or leave them without a home. This is a “worst case scenario”, but people tend to cover their basic need before prioritizing other issues. To answer to this challenge, the government has announced a top of loan with low interest rate. However, this may fail to meet the dynamic pressure of poverty for the poorest people, who don't have income opportunities.

It is possible that some use the first installment of their subsidy to cover their family's basic needs. If people have outstanding debts, the subsidy can be used to pay them instead on the house. These scenarios can contribute to people being forced to refrain from prioritizing the reconstruction of their homes. The government approach does not include any insurances or methods to prevent those scenario's, beyond having control over the installments phases, which can stop the second payment if the criteria connected to phase one is unfinished. However, the NRA has later in the reconstruction process expressed their intention to provide a supplementary subsidy for the most vulnerable, but according to an NRA informant, they are concerned regarding the financial cost. In addition, the political difficulties of a target approach are a

concern, which also put pressure on the assessor's. The whole process has been delayed by the lack of a clear policy about the subsidy, until the publishing of the framework for the reconstruction from NRA in May 2016.

6.2.3 Role of INGOs

The INGOs role in the reconstruction system extend to approximately 5% of the affected households, according to our informants. Based on this, the role of INGOs doesn't seem to be important on a big scale. The INGOs cannot directly provide the money to reconstruct houses, or build houses for the beneficiaries directly, but they could provide the money through the government. Their main focus is awareness and capacity building at the community level, to address the existing vulnerabilities. This is the key to build resilient housing instead of just resilient houses. The shift in focus from direct financial provision to awareness and capacity building is discussed in chapter 6.2.

Coordination - INGOs and Government

According to the Hyogo Framework for Action the government has the primary responsibility for DRR. The failed implementation of the risk mitigating elements in relation to earthquakes, resulted in disastrous consequences. In developing countries, such as Nepal, the institutions are weak or missing, especially in the rural areas. The political conflicts on all levels of the society, are prolonging the distance between the villages and the government. Those are resulting in alliances that further reduce the informational exchange between the different parts of the society.

The INGOs can contribute to fill those gaps and assist the government to increase the capacity. This can ensure that the affected people get the assistance they need. In many countries, the governmental institutions may lack the technical expertise to reconstruct “safer”, so INGOs can provide this technical knowledge. The government of Nepal is proud of the building codes and is convinced of their quality for the reconstruction, seeing their technical capacity as sufficient. Technical expertise of INGOs is seen as not adjusted to the context, and are just partially useful. The dimension of the cooperation between INGOs and the government is based on, as previously stated, strong institutions that demand the control over all activities. The expectations from the side of the government, about the relationship between INGOs and themselves is best illustrated by the statement:

You are here for your money. Tell us what you are going to do with your money and build according to our building codes...I am in charge, you submit. I will approve or I will stop you (Informant NRA)

This type of power relationship reduces the flexibility of INGOs, and is affecting the application of the reconstruction programs. INGOs prefer more freedom during the project implementation. Those two different viewpoints create potential tensions between the actors. The INGOs that are lacking local knowledge and are unfamiliar to the local context are often confused by this approach and perceive the government as restrictive, bureaucratic and inefficient. However, the main problem is knowledge of the local political context and the means of communication. The technical capacity that the INGOs are bringing is based on experience and technical knowledge of “build back safer” from other disasters. Every disaster context is different, creating challenges for the successful application of this knowledge.

The INGOs that have been present in Nepal before the earthquake have better overview of the context and challenges related to the social and political system. Those have better access to the governmental structures, which gives them increased flexibility. Helvetas and CRS have higher implementation power for their proposed projects, because they have a better understanding of the political structures, and experience with the government. They have access to information and don't need to go through the all levels of the system to get approval for their projects.

The establishment of HRRP was based on the need to coordinate the many actors, and the increasing demand for communication and coordination. HRRP has two main functions; coordination and technical support. On the national level, the role HRRP is more political, mostly maneuvering between NRA, DUDBC and demands of INGOs. On the district level coordination of the activities of INGOs and the local partners. The roles in the system are dependent on negotiations between the actors involved. The whole process of house reconstruction is long term and the nature of the relationship may change over time.

6.3 Resilience measures implemented by the INGOs

The measures of the core actors in the housing reconstruction will be sorted and discussed considering the different elements in resilient housing. The INGOs decided to focus more on awareness and local capacity building. This might be a result of challenges related to working through the governmental system of reconstruction, but it can also be because this approach potentially has a broader range and are complementing the government's efforts related to training of masons and the subsidy.

6.3.1 Financial support

Disasters usually exceed the coping capacity of the local governments, especially in developing countries, so they have to rely on the external capacities and funding's (Ikaputra 2012).

The international community plays a key role in providing funding for the reconstruction. The relationship between the government and INGOs is important to understand the processes influencing the reconstruction (Lyons 2009). This relationship is based on two types of financial contributions; direct donations distributed through the government system, which is discussed in the previous chapter. The second option is the provision of financial assistance through INGOs present in the country. In the case of Nepal, the government have decided to hold control over the subsidy system. In the early stages of the reconstruction, the overall financial resources of the INGOs were limited, in relation the extend of the destruction. This resulted in a move away from the direct subsidy approach, and put more emphasis on the measures related to awareness, capacity building, and technical assistance. This focus has been maintained through the reconstruction, but the question regarding INGOs will to provide the 200.000 rupees' subsidy directly, was brought back when the financial situation shifted. In addition, the government has stated both that they accept INGOs providing financial resources directly into projects approved by the government, and that the INGOs should provide these resources through the government reconstruction system.

Donations usually come with criteria attached. The receiving part is depending on the financial resources the donors provide, and must accept those criteria's even if the priorities of the government is different from the priorities from the donors. Direct donations have not been presented as a challenge by any of the core actors interviewed in this thesis. Several of the INGOs

encountered in Nepal, have expressed concerns related to the government claiming control over the financial distribution from INGOs to people or projects directly. The informant from Red Cross admitted the positive sides of government having the responsibility for the whole system, from a coordinating perspective. At the same time, he was conflicted in the relation how this will affect the independence of INGOs.

6.3.2 House design

The resilience in house construction lays in its absorbing capacity of the energy released during the earthquake. The house reconstruction system is owner driven, the house owners have the responsibility to choose the design of their houses. Expenses and availability of the materials are the key factors here. The 17 seismic resistant house models from the DUDBC, are based on a wide range according availability of materials, building customs and different financial capacity. The INGOs use the catalogue to choose the proper house design for the reconstruction.

The implementation of the earthquake safe components makes the construction more expensive, claiming materials of higher quality and more timber/cement for the seismic bands. In the visited areas, the popularity of the catalogue models was low among the local people. According to people asked, the designs were too expensive and not reflecting the needs of the families. This may be a consequence of insufficient dissemination and communication regarding those. The catalogues were distributed through the VDC secretaries, without being sufficiently explained to the people in rural communities. The catalogues are usually placed in the VDC offices. However, several informants expressed concerns about the written materials dissemination, because large part of the house-owners from the older generation, cannot read.

The INGOs that utilize the catalogue stated that several designs are usable and respecting the local building tradition. Based on the needs of the local communities, they adjust those designs to the local conditions, taking the financial capacity of the people into account. The advocacy for the earthquake safer house design happens through the social mobilisers and through the masons that have been through the trainings. In the case of Bunkut VDC, the whole community decided for one house design, after the discussion about the proposed design from trained masons and social mobilisers. Stating that this design will prevent the same damage as before.

6.3.3 Implementation of building codes

Implementation of the building codes is the responsibility of the DUDBC. This department is providing the curriculum for the mason trainings provided by the INGOs. They consist of simplified version of the Nepali building codes, focusing mainly on the seismic resilient elements. This way the masons are educated in the Nepal building code. This in combination with the financial subsidy, should increase the capacity and reduce the vulnerabilities described in the PAR model, by reducing the pressure at the pressure point. INGOs are playing an important role in seismic safe building code implementation, by providing the training for the areas they are responsible for, using the DUDBC curriculum.

6.3.4 Awareness and capacity building

The communities we visited do know their surroundings, but the previous large scale earthquake that affected their communities was in 1934. The missing government involvement in the rural housing reconstruction after that, resulted in houses that were not earthquake resistant. People were not aware of the vulnerabilities hidden in the unsafe reconstruction and the disaster potential that those may release during the next big earthquake. Therefore, the protection against earthquakes, through the implementation of proper seismic elements in the house construction hadn't been conceptualized before the 2015 earthquake.

The idea that the affected people participate in the reconstruction of their own house is central in the owner driven approach. Increasing the capacity of the local people can contribute to a swift and sustainable reconstruction process. Local capacity and awareness building is a joint role of government and INGOs. The 10 key messages are the first and basic instrument to awareness building that was formulated in cooperation between government and the Shelter Cluster.

The governmental role related to awareness is based on dissemination of 10 key messages into the affected areas. The government plans to build resource centers in the VDCs, to increase the capacities of engineers and secretaries in the VDCs. During the data collection, those were just in the phase of draft for planning. The delays in the policy making process are setting the governmental system on lay-back in the promotion of the safer housing.

The role of the INGOs is to increase awareness about the safe building element and through this influence the traditional building techniques in a safer direction. The main measures of awareness and capacity building are the different types of trainings and technical support.

House design and building tradition are part of the Nepali culture, and are developed through the interaction between hazards and culture. Changes in the building tradition, with the idea that the modern is better and the traditional is primitive, can have potentially negative effects on the house construction (Krüger et al 2015). The lack of experience with new materials, methods and skilled workers, is creating new unexpected sources of vulnerability in the construction on one side and undermining the traditions and local knowledge on the other side (Ibid). New building methods claims for training that address the construction elements that are meant to make the house earthquake resistant. The transfer of this new type of knowledge that is provided by the training is critical for the successful reconstruction. The INGOs are this way reducing the existing vulnerabilities through the increasing of the capacity and awareness about the earthquake safer housing on the local level. The local capacity and awareness building from the side of INGOs consists of mason trainings, BBS awareness trainings, PASSA and model structures.

The main problem for the reconstruction is the lack of trained masons. The existing masons in the rural areas have no technical expertise related to earthquake safe house construction. Therefore, the focus of the capacity building in the form of trainings incorporating the building codes, is preparing the qualified masons for the reconstruction. The goal is to reach the existing local people working as community masons and train them in earthquake safe construction technique and therefore increase the local capacity of the trained mason as quick as possible. Skilled mason trainings are both taking place on- and off-site, utilizing both the theoretical knowledge and the practical learning of the necessary skills under supervision. The off-site trainings are incorporating the theoretical summary of the building codes and explanation of the causal relation between the different elements of the construction and their effects on the vulnerability of the house. The higher emphasis on the onsite training that is based on the building constructions with the earthquake safer elements, that are connected to the practical orientation of the trainings. Providing the right information in the right time and in the form, that is understandable, and properly understood, is essential. The continuous practical key information and skills exchange between the trainers and trainees during the trainings is the most important part of the learning process.

The trainings of semi-skilled masons take place on-site, usually in a public area in the communities. The main idea is to increase the community participation and the capacity of the qualified workforce, by securing the necessary knowledge and skills on the side of owners and laborers for the house reconstruction. It also creates new income opportunities for the households that don't have enough money for the reconstruction. The certified semi-skilled masons will eventually help on the construction of other houses in the community and generate income for their households.

Awareness is seen by the INGOs as the most important element of the safe housing because as stated without awareness the money will be used on unsafe construction again.

The involvement of the communities is the most important aspect. The BBS awareness campaigns that consists of both formal and informal approach. The participation on the trainings is ensured by the daily payments to the trainees.

Representation in the trainings:

Representation of all sectors of the population is one of the main factors for the success of the resilience building projects in the communities. The participation of certain groups in society is influenced by the social and cultural traditions. There is no tradition of women being masons in Nepal, women usually gather and transport material for the construction and do the hard manual work. Resulting that there are no female masons to participate in the skilled mason trainings. In the case of semi-skilled mason trainings, the INGOs try to mobilize certain number of women that should participate. Even though women seem to be interested in participation in the trainings, the real numbers have been low. Many of the female participants dropped out during the trainings because of family reasons.

The participation in the 10 key messages for BBS and other awareness programs is based on participation of all households in the community. The participation of women is relatively high. Model structures are used in the BBS awareness campaigns as a visual help. Also because of their placement close to the affected communities, they serve as a source of inspiration and reminder how should the key elements of construction should be placed, it also serves as a practical demonstration to promote certain elements into the households, like how to build the toilet for handicapped etc. In the CRS model structure, there are possible types of construction represented,

so the people could choose the building material they can afford, or they would like to use in their house construction.

PASSA is an instrument that is based on community participation. The participants are chosen so they could represent all the groups in the community, but it was not possible to confirm if all the groups in the ward were represented on the sessions. Because the wards consist of groupings of houses scattered in the landscape. The selection of participants is done by the social mobilisers, while the international staff must rely on their objectivity and impartiality. The sessions are happening on public areas in the community, and the necessary skills are taught under the supervision of INGO using pictures and a risk matrix. According to our observation women, especially the older ones, were taking a much more active role in the sessions and were much more constructive when it comes to responsibility taking. Working closely with the communities, the goal is to promote the local responsibility for the risk reducing strategies on the local level. From the learning perspective, teaching people what kind of risk they are facing in their everyday lives, and what are the strategies to reduce those. The housing consists of more than just the house construction, and the complex problems the communities have, and the risk related to them are not addressed by the uniform approach. The formulated plan for to the local authorities shows that the communities can take an active role in their self-protection, and can mobilize the resources they have. This realization is based on the trainings under supervision of the INGOs staff. But in many communities, they still depend on INGOs to provide the resources they are missing, such a technical assistance. By sending the plans to local authorities, they make them aware of the problems, and can demand the support needed from the government. This bottom up approach is promoting the local responsibility for the risk reducing strategies and using the existing governmental structures to promote social change and risk reduction in the communities. The PASSA training is working on a long term to establishing trust and building a feeling of responsibility for the risk reducing measures.

6.3.5 Social mobilization

Community involvement and the coordination between the INGOs and the community are two of the main factors influencing the resilience building in the communities. Social mobilization is an instrument used by the INGOs to achieve the best performance in those. Social mobilisers connect the community with the INGOs on one side, but also represent it in the community on the other

side. Social mobilisers in Nepal play an important role in the awareness programs, such as 10 key messages for BBS, also providing supervision of the constructions and monitoring the situation in VDCs. Organization of the awareness programs and help choosing people that will participate, is one of the main responsibilities of social mobilisers. Another one is the advocacy in the community for the earthquake safer housing. Social mobilisers were chosen from the community, so they have much easier access to the decision-making processes in the community, than outsiders do. The other function of the social mobiliser is the cooperation and coordination with the VDC secretaries and ward coordinators, alias the representatives of the local government. It means that they are creating a bridge between the communities, INGOs and the government.

6.4 The main challenges for INGOs

6.4.1 Political challenges

Political conflicts generally create instability that hinders successful disaster management governance in disaster affected countries. This can significantly influence vulnerability, and the power of the governments is usually undermined by it. Decision-making and processes requiring long term planning are usually complicated in the changing context of the political conflict. The consequence might be that the government, but also other organizations, fail to implement DRR or development programs that require stable long term planning and environment (Twigg 2015).

The conflict that arise from the political system, with the establishment of NRA severely affected the reconstruction. The huge amount of resources and the potential influence over large parts of the population, presented too attractive political cleavage for the parties to not try to seize control over it. This conflict delayed and prolonged the reconstruction. NRA presented the final frameworks for the reconstruction in May 2016, but there have been several frameworks for the reconstruction, which to some extent has been debated and presented in the public.

The affliction of competing political parties to certain ministries and NRA have influenced the information exchange and coordination in the whole reconstruction system. This have reduced trust in local institutions from the side of INGOs. The top down control with strong bureaucratic institutions reduce the freedom of INGOs. On the other side, it has reduced the potential for duplicities in the system and reduced the potential for conflicts on the community.

Constitutional issues

The border blockade affected the reconstruction activity by causing a state of paralysis in parts of the country. The impact of this political conflicts on the work of INGOs was that the governmental policies on reconstruction has been changing all the time, depending on which political party has control over the government. In the cases where it exists political consensus about the importance of the housing reconstruction, the local conflicts are complicating the implementation. The political conflicts on the local level are mirroring the conflicts on the national level. Parties in villages are trying to take credit for the eventually successful reconstruction. During the pilot phase of the governmental subsidy distribution in Dolakha, the local parties wanted to take over the direct distribution of the money and delayed the whole process.

6.4.2 Challenge in coordination

INGOs work with both government structures and local communities. The quality of the relationship is the key aspect of the successful intervention in the direction of the safe housing after the earthquake. The line ministries have to some extent, the same responsibilities that they would in normal conditions, while the NRA has the overall responsibilities. The establishment of the NRA is based on experience from other earthquake affected South Asian countries, where the increased demand, especially on the horizontal coordination led to the establishment of new governmental bodies guiding the process of reconstruction. This creation of new institution, instead of relying on the existing, creates potential tensions when the responsibilities are not clearly defined from the very beginning. The political challenges related to the establishment of the NRA and its consequences regarding their objectives, indicates that the will to be coordinated among the existing institutions is limited. The idea that the new institution can overcome the bureaucratic obstacles connected to the existing institutions and hence reduce the reaction time to the earthquake, was not valid in the case of Nepal. Many INGOs experience massive pressure from donors to start their projects, while the choice to establish NRA delayed the start and prolonged the whole reconstruction process.

6.4.3 Acceptance

Positive outcome of every measure related to the risk mitigation depends on the acceptance of the local community. Because of the long-term involvement of development agencies in Nepal, some of the Nepali people are expecting direct help from the INGOs, in the form of building their

houses. Also thanks to the low-income opportunities in the rural areas they often expect to be paid for the participation in the trainings and awareness, to assure that they can cover their basic needs and provide for their families while attending the programs. For the inclusion of the new knowledge, the internalization must be achieved. The acceptance of the new knowledge coming from the trainings as something that is useful for the village or community is the main aspect here.

Some INGOs have already started their projects based on the information from the NRA, before the announcement of the reconstruction framework, while others have waited for the final result. This challenged the affected people's trust in the INGOs, but also the government. Some people have rebuilt their homes without any regard of the resilient elements the reconstruction system aims to incorporate.

6.4.4 Most vulnerable vs. Whole communities

According to humanitarian principle, the most vulnerable should be getting help first. The situation around the subsidy is very political and in effort to avoid potential conflicts government decided to give the same subsidy to all affected, without consideration of their potential vulnerability. The PDNA does not reflect the existing vulnerabilities in the local communities. The government did try to solve the problem with the CBS census, but the focus on damaged houses didn't sufficiently fill the information gaps about the vulnerabilities of the households. The government is often relying on the INGOs to provide the information from the field. Thus, the identification of the most vulnerable people is very difficult.

The awareness programs that INGOs decided for are mostly directed towards the whole communities instead of just focusing on the most vulnerable. The provide help to the whole community has a potential to affect the most vulnerable too. But it doesn't reflect the differences in the access to the resources of the particular households. People with the limited resources are limited to the simplest house designs that are often not reflecting the needs of the family in terms of space and everyday life. In some cases, even the subsidy wouldn't be enough to build the new houses. Those are waiting in the temporary shelters for the governmental subsidy to start to build their houses.

People with more resources are the ones that are in the scope of the many INGOs, because those are the ones that have already started to build or are planning to build and therefore the information about the resilient house construction is much more essential for them in this phases of the reconstruction. Working with the whole communities can result in an understanding of where the vulnerabilities lay. Building the capacity in relation to awareness, trained masons and workers, might have positive effects on the most vulnerable, when the system of reconstruction will start to reflect those vulnerabilities.

7. Conclusions

How does the housing reconstruction system address the existing vulnerabilities?

The role of INGOs in the system, and their access to the field in Nepal, is defined by the nature of the relation to the government. These responsibilities have not yet been clearly defined. The strong central top down control system is reducing the INGOs position in relation to house reconstruction. The INGOs measures reduces the gaps in the governmental presence, through providing information regarding safe reconstruction in the local communities in the rural areas. This is strengthening the capacity of the local communities in the rural areas.

The five key features of resilient housing are financial support, house design, implementation of building codes, increased community awareness and social mobilization. Those features are utilized in the reconstruction system to address the existing vulnerabilities in relation to housing. The governmental **subsidy** reduces the dynamic pressure of **poverty**, that allows people with sufficient access to resources to reconstruct resilient houses. The governmental system fails to reflect upon the financial situation and income opportunities of the households, and therefore might fail to improve the situation for the most vulnerable, if they don't get additional financial

support. Those who can afford to rebuild their houses need access to information related to the resilient construction. Considering this, the role of INGOs is much more important, because their measures focus on awareness and capacity building. This can release the pressure for the people living in the unsafe conditions. The focus on the buildings code can contribute to houses that withstand earthquakes for the people who have been affected by this earthquake.

What resilience measures are implemented by the INGOs?

The INGOs measures for direct reconstruction of houses extend to approximately 5 % of the overall reconstruction. INGOs have two types of training, the skilled and semi-skilled training of people that will execute the reconstruction. The government provided the curriculum and house design, that are adjusted by the INGOs, to the community needs and availability of materials on the local level. Helvetas have their **own approach**, due to long experience and good relations with the authorities. They experienced challenges because they operate outside the government system. This approach is exciting and need more follow up.

The INGOs use social mobilization, capacity building and awareness programs like Build Back Safer, 10 Key Messages and PASSA on the community level. Those are tools focusing on changing the people's perception of risk and on teaching them the basic features of earthquake safe houses. In combination with the trained masons that possess the technical knowledge, which will be the actual rebuilders together with the house owners, the whole system aims to increase the resilience.

The model structures are a tool the INGOs use to change the perception of the people. It is a practical demonstration of the seismic elements in different building techniques in the affected areas. It is directed towards the people in the villages and used during the awareness and capacity building programs.

What are the main challenges for the INGOs?

The political conflicts and the lack of political consensus about the NRA, prolonged the start of the reconstruction process. This resulted in that those who rely on the financial support from government have waited too. Even though they were open for information about the earthquake safe elements and trainings from the government/INGOs, they started to neglect to participate due to low confidence in the government and INGOs. Some people grew impatient and started to build. The seismic quality of these houses depends on access to the information about the safe house construction, which are mostly available through the INGO channels. Access to material resources is also a factor in those.

INGOs operating within the legal framework of the government must follow the government eligibility system. Low income families, people in debt, and the most vulnerable, can to some extent be left out of the reconstruction, due to lack of resources to finance the rest of the cost. The INGOs work with the whole communities, to ensure that the programs reach as many people, as possible. This can have an indirect effect on the most vulnerable, since the programs are based on capacity building and awareness about the vulnerability in the whole communities, they should have positive effect also on the most vulnerable.

How do INGOs contribute to earthquake resilient housing in Nepal after the 2015 earthquake?

INGOs are contributing to earthquake resilient housing through five key measures incorporated into the process of reconstruction; seismic resilient house design, implementation of building codes through trainings, increasing community awareness, social mobilization and financial support. The successful combination of the five measures will lead to more resilient and sustainable housing, that are less vulnerable to future earthquakes. The implementation power of the INGOs depends on the relationship to the government. If the relation is close and based on a long-term relationship, the flexibility to implement the programs increases. This can result in more efficient house reconstruction. The INGOs present in Nepal dispose financial resources to cover the reconstruction of approximately 5 % of the affected houses. The INGOs role on a large scale is less significant than we expected. At the same time, the government has huge amounts of financial resources available for the reconstruction, but does not seem to be able to distribute those efficiently to the affected people. However, since the government system fails to reflect the existing vulnerabilities, in some cases by not being physically present in the villages. The most significant contribution of the INGOs to resilient housing reconstruction is by increasing the local capacity and awareness related to earthquake resilient housing in the rural areas. INGOs can also supplement the role of the local government through the access to information, that the government fails to provide to rural communities.

7.1 Further research

This thesis focus on the INGOs role in relation to resilient housing, through the government's reconstruction system. The measures applied by the INGOs can be divided in two categories. The first is related to the measures connected to the reconstruction of houses through the government system.

The INGOS contribution through the government system are limited to 5%. It could be interesting to research how Helvetas' direct construction during training are perceived by the participants.

Another interesting opportunity could be to study the outcome of the measures within the government reconstruction system, to reveal how the different INGOs operates within the strict top-down controlled reconstruction system. How the different INGOs organize their activities and how this affects their outcomes could be a contribution for future disasters.

The second category is related to INGOs who facilitates awareness and local capacity building programs. The outcome of this approach is particularly hard to measure. To gain more data from this approach, it would be interesting to focus on the knowledge of the people who reconstructed houses (after the 2015 earthquake), without the earthquake safe components. A potential subject could be related to access to knowledge, or lack of it, before they started to reconstruct.

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APPENDIX A - CENTRAL INGOs

Catholic Relief Services

Catholic Relief Services (CRS) is an American relief organisation that have been working with Caritas Nepal, the Catholic Church of Nepal since 2005. Their role have been related to emergency response, capacity building and disaster management. After the earthquake, CRS have focused on long term housing support, including trainings related to earthquake resistant structures for skilled and unskilled workers. CRS has a good connection to government of Nepal, especially in Gorkha. CRS are cooperating closely with HRRP.

Helvetas

Helvetas has been present in Nepal for 60 years, having good knowledge about the context and environment and good connections to the institutions. In the pilot phase, the plan is to provide the training for 3000 people. Later with the help of partner organisations another 3000 people. We have two informants in Helvetas, both engineers.

Japan International Cooperation Agency (JICA)

In the first phase, JICA focuses on building the communities capacity through the training of the masons. Later when the government start with the provision of the subsidy, the help to the households with the enrollment process by providing the right information on how to get the subsidy. Later, during the construction, the plan is to have a technical team that will support the construction. We have one informants in JICA, an engineer.

Red Cross

The Red Cross is a global organisation that have national “societies” in 186 countries around the world. The organisational way of the Red Cross is that all the national societies from countries around the world, operates under the responsibility of the national society in the host country, in this case, the Nepal Red Cross. As a result of the organisation of the different “societies”, the Red Cross have different approaches for the reconstruction. While the American Red Cross are focusing on mason training and will construct about 6000 houses, other Red Cross societies are focusing on awareness and capacity building programs, such as the Participatory Approach For Safe Shelter Awareness (PASSA). We have several informants from the red cross.

APPENDIX B - TABLE OF INFORMANTS

Organization	Position	Location	Type of organization
NRA	Advisor	Kathmandu	Government
DUDBC	Civil engineer	Kathmandu	Government
DOLIDAR	Economist	Kathmandu	Government
Shelter Cluster	National coordinator, District coordinator	Kathmandu	Coordination
HRRP	National coordinator, district coordinator, focal point	Kathmandu, Gorkha	Coordination
CRS	Project leader	Gorkha, Taple, Bunkut	INGO
Red Cross	Project leader, engineer, etc.	Kathmandu, Gorkha.	INGO*
JICA	Project leader	Gorkha, Barpak	INGO*
NSET	Engineer	Kathmandu	Private
Helvetas	Project leader, engineer	Kathmandu, Gorkha	INGO

Participants

Activity	Informants	Location	Number
Skilled training	Trained masons, people in training	Barpak, Bunkut	8
Semi-skilled training	People in training	Taple	**+5
10 Key Messages (BBS)	Finished in training	Taple, Kathmandu	3
PASSA	During training	Sreenatkoth	**
No activity	Local people (central)	All of the above	4

**Red Cross and JICA are not considered to be INGOs. However, their role in the system is the same as the other INGOs and we decided to include them in the INGO term. The list only includes organizations that have a direct/central role in the thesis, and 14 informants from these organizations is included in the thesis. **Means group or community interview. We also interviewed 7 social mobilizers, 1 VDC-secretary and 2 CBS Engineers.*

APPENDIX C - INTERVIEW GUIDE

INGOs

BACKGROUND INFORMATION

Name?

Education?

Organization?

Position?

Experience in position, and/or field?

PROJECT INFORMATION

What kind of projects does your organization do in the reconstruction?

Who decided the content of the project?

Do you have experience from similar projects?

What does disaster risk reduction mean to you?

Do you have any thoughts regarding the expected results and benefits from this approach?

How did you decide which projects?

How did you choose which area to work?

Who decides the area, who do you apply to?

- If necessary, ask about assessment, VCA etc., (regarding vulnerability).
- What is the role of local, district and national government in this?

MASON TRAINING, UNSKILLED MASON TRAINING

1. Project leaders, facilitators etc.

Are you applying DUDBC building codes?

How many different types of buildings are you facilitating training for?

Are these from the DUDBC catalogue?

What kind of preliminary work is done to adapt trainings to local communities?

How do you perceive the traditional building customs?

Is the traditional building custom included in the trainings?

What are the strengths and challenges related to local/traditional practices?

Per what criteria do you choose the trainees?

What are the expected outcomes of the projects?

Do you have any procedures how to measure/evaluate the outcomes of the projects?

How? Who do you report this to?

Does your program qualify the participants to be masons approved by the DUDBC?
(*certificate of labor?*)

What are the main challenges you are facing during the projects?

How long are the people facilitation the training working for/with you?

Do local people (masons and semi-skilled) that participate in the programs have any responsibility in sharing the learned knowledge further, when they go home?

Leading roles, awareness, knowledge and information role?

2. Participants

What is your profession?

Where are you from?

How big city, village?

What are the challenges that people in your village face (post-earthquake)?

What do you think was the most important things you have learned in the training?

Have you been given the opportunity to improve and adapt the program to “your village’s needs “during the pre-training assessment?

What is the plan for the reconstruction of your village?

Are you going to build houses based on the training?

Who is going to do the rebuilding in your village?

Do you (and other people in your village) have enough money to start to build when you are finished with the program?

How do you get information from the government about situation around the reconstruction process?

Do you know about the 10 Key Messages?

What are your plans when you are done with the training?

See MODEL HOUSES

PASSA/BBS - awareness programs

1. Project leaders, facilitators etc.

What does disaster risk reduction mean to you?

Do you have personal experience with PASSA/BBS implementation in other countries?

What did you learn?

Is this relevant for PASSA/BBS projects in Nepal?

Is it implemented?

What kind of preliminary work is done to adapt PASSA/BBS to local communities?

How do you choose where to implement the project?

Do you communicate the 10 key messages through PASSA/BBS?

Who are you cooperating with? (Local, district, national, organizations)

Whom from the local authorities do you report to? How often?

What are the expected outcomes from PASSA/BBS?

How do you measure/evaluate them?

How are the projects coordinated with local authorities?

Are all the vulnerable groups (women, children, disabled people.) represented on the trainings? If not - Why?

What are the strengths and challenges with PASSA/ BBS?

What are the strengths and challenges related to local/traditional practices?

Can you elaborate on this?

What have you learned from local experiences to prevent and reduce risk?

And what do you think they have learned from your organization?

Do participants have responsibility to share the learned knowledge further, when they go home?

Leading roles, awareness, knowledge and information role?

2. Participants

What is your profession?

Where are you from?

How big city, village?

What are the common challenges that people in your village face post-earthquake?

What is the most important thing you have learned?

How are the trainings accepted in your village? Elaborate!

What is changed in your village after the participation?

What part of the training was the most helpful for your community?

What was the most challenging with the traditional practices?

Can you elaborate on this?

What relation do you have to local authorities and what are their role in the reconstruction?

Do you report to them during/after the training? How often?

After you finished PASSA, was there an evaluation?

What do you think about it?

Are vulnerable groups (women, children, disabled people,) represented in PASSA?

Why not?

After participating in PASSA, do you have responsibility to share the learned knowledge further in your village?

Leading role, awareness, knowledge and information

Do you have enough money to start to build when you are finished with the program?

Do other people in your village have enough money?

(See MODEL HOUSES)

MODEL HOUSES

How they were introduced to you? (by whom?)

What do you think is the meaning behind the model houses?

Who did design the model houses?

Did you participate on building those?

Who did participate in building those? How many women?

Do you know what makes those model houses safer in relation to the earthquake?

How do you think they may be helpful when you will be building your house?

Are you planning to use the same design, or do you want to use another? Why?

LOCAL AUTHORITIES

NEPAL RECONSTRUCTION AUTHORITY

Do you have any examples of good practices related to local capacity building from your previous experiences that are being implemented in Nepal?

Do you have recommendations on things that isn't implemented that you think should be?

What does disaster risk reduction mean to you?
What is the role of NRA in the earthquake risk reduction process?
What is the position of NGOs in this process?
What is the role of HRRP in this process?
How do you cooperate with HRRP?
How does the communication work?
How is the system around the reconstruction organized? (coordination)
How do you cooperate with INGOs/ministries?
How do you communicate between different levels?
Can you see some challenges in those?
Do you think that the public opinion on preventive measures related to earthquake has changed after the earthquake?
If yes, how does it look like now nearly one year after the earthquake?

MINISTRIES (DOLIDAR, DUDBC)

What is the role of (Dolidar/DUDBC or MoFALD/MoUD) in the reconstruction process?
Can you tell something about the situation in Nepal regarding future earthquakes?
What does the disaster risk reduction mean for you?
What is the role of NRA in the earthquake risk reduction process?
What is the position of INGOs in this process?
How do you cooperate and communicate with INGOs/HRRP/NRA?
How do you communicate between different levels?
Can you see any challenges in the communication?
Do you have a policy (strategy) for local capacity building?
If **Yes**, further questions:
What does the work with LCB entail?
What is the position of the model houses and ToT projects in this process?
How effective are they?
How are they organized? Who designed them?
Who participates?
(*age, gender, profession, education*)
What kind of participation is sought from the community?
Is it required that local communities participate in activities that aim to reduce risk?

How can they contribute?

Do they have any kind of responsibility?

What kind of inputs do they have?

What do they contribute with?

What do you contribute with?

How do you think INGOs utilize and/or strengthen local capacities?

Are their activities designed to avoid dependencies in the future?

Do you think they are doing sufficient assessments?

LOCAL PEOPLE

Explain about Training of masons and semi-skilled masons when you ask the questions to be sure that they know what we are talking about. It is possible that people call it something else in the field.

How big is the city/village you live in?

What are the challenges that people in your village have (post-earthquake)?

Have you heard about the training of masons/semi-masons?? How, when...

Have you been participated in person on the training etc.?

Do you know how the participants for the trainings are chosen? DC?

How many people from your village participated on training from NGOs? VDC?

Have you had some local training/experience with those who participated on the trainings?

What have you learned from them?

What do you think is the main idea of the training?

Do you think it may be useful?

Do you feel that the trainings are suited to fit the village you live in?

How many do you think will use the stuff they learned at the trainings to rebuild?

How do you get information from the gov. about situation around the reconstruction process?

Do you have any inputs on how to fit the training to your village?

Have you been given the opportunity to improve and adapt the program to “your village’s needs”?

GENERAL

Anything you would like to add

