

LAND ADMINISTRATION IN POST-DISASTER NEPAL IN SUPPORT OF THE POOR AND VULNERABLE: ASSESSING THE OPPORTUNITIES TO IMPLEMENT FIT-FOR-PURPOSE LAND ADMINISTRATION

SUBODH KUMAR YADAV

Enschede, The Netherlands, March, 2018

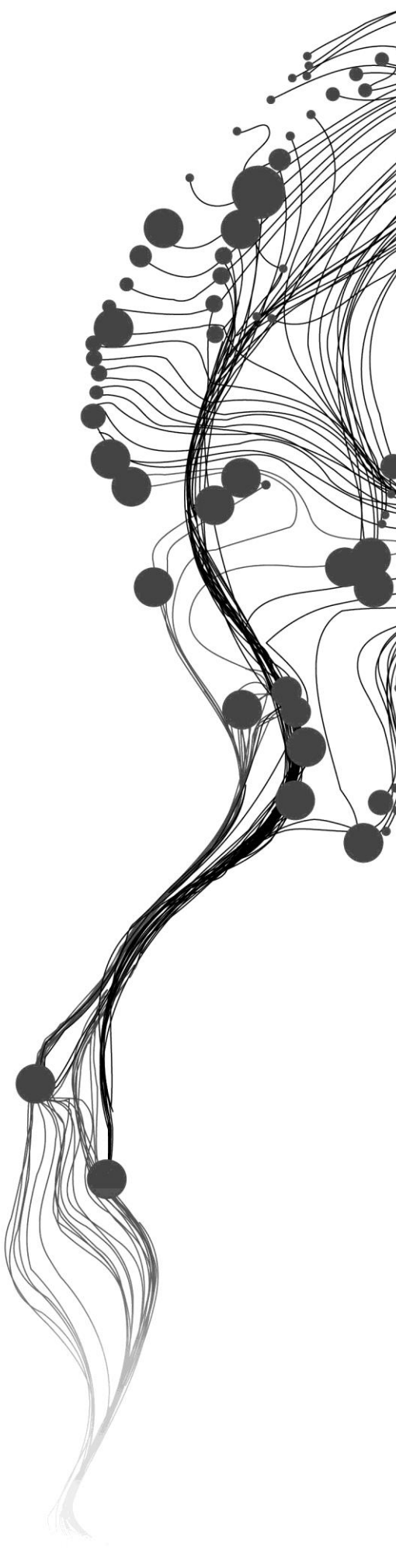
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ABSTRACT

About 75 percent of the world's population lacks access to formal and documented land rights. Majority of them, approximately one-third of the urban population in developing nations, are the poor and vulnerable groups living in informal settlements. The poor and vulnerable groups are more exposed and vulnerable to disaster compared to general population, consequently, they suffer more in disasters. Since informal land tenure remains outside formal land administration systems, the poor and vulnerable often remains deprived of recovery and reconstruction assistance. The situation aggravates in case of disaster when the authority demands land title as a basis for reconstruction grant eligibility. The Gorkha earthquake 2015 adversely affected the poor and vulnerable groups in Nepal. The land administration in Nepal could not address the post-disaster land issues arisen from informal land tenure, non-formal tenure and women's land rights. Due to insecure land tenure, the poor and vulnerable groups suffered disproportionately in disaster, which increased the scale of landlessness, displacement, and eviction in Nepal. Finally, the government made some amendments in the policy to address the prevalent land tenure issues and is on the verge to adapt FFP land administration.

This research aims at assessing the opportunities to implement FFP land administration in post-disaster Nepal in support of the poor and vulnerable. To accomplish this objective, a qualitative research is adopted and a fieldwork is conducted in Kathmandu, Lalitpur and Dolakha districts of Nepal with a purpose of acquiring primary and secondary data. Major organizations involved during interview and data collection are CSRC, MoLRM, UN-Habitat Nepal, OXFAM, Lumanti Nepal, NRA, HURADEC, DSO Dolakha, Survey Department, residents of Khokana and Bansighat settlements. Expert and purposive samplings as well as FPIC principles are followed to access these organizations. Thematic analysis technique (for interview transcripts, field notes and literature) is adopted to present the results based on the research objectives. Importantly, validation of results is done through approval and feedback from interviewees, which increases the validity and reliability of the results.

Discussion of the land administration in post-disaster context reveals that the most serious post-disaster land issues faced after 2015 earthquake in Nepal were related to destruction of houses, displacement of population, issues of relocation and land disputes. Most affected populations are Dalits, women and indigenous population belonging to the poor and vulnerable groups. Recovery plans implemented are the formulation of reconstruction policy to incorporate all the existing land tenure holders, adoption of JLOC policy in land registration and CDA approach for land adjudication. A high proportion of landless people, proliferation of informal settlements and issue of gender equity in Nepal show that though the constitution of Nepal 2015 conforms to UDHR stating land as a fundamental human right, it has not been realized in Nepal. This is evident from the cases of forceful eviction and 'security of tenure gap' in case of vulnerable groups. Assessment of land administration in Nepal identified that the socially legitimate land rights like informal and non-formal tenure have not been addressed explicitly by the legal framework. There is a significant gender-gap in the acquisition of property rights by women. The technical framework is rigidly based on geometric accuracy, and there is a lack of good governance in the land institutions. Finally, relevant guidelines are proposed to avail the post-disaster opportunities with emphasis on secure tenure for the poor and vulnerable, application of aerial imagery to speed up reconstruction process and development of integrated institutional framework facilitated by flexible ICT infrastructure. Capacity building is taken as an enabler towards the implementation of FFP land administration.

Keywords: *Disaster, land issues, poor and vulnerable, tenure security, FFP, legal, technical, institutional, reconstruction policy, land rights, human right.*

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SUBODH KUMAR YADAV
FEBRUARY, 2018,
ENSCHDEDE, THE NETHERLANDS

DEDICATION

..... Dedicated to my late father with due respect

Shree Laxmi Prasad Yadav

स्वर्गीय बुवामा सादर समर्पित

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LIST OF ACRONYMS AND ABBREVIATIONS

CBS	Central Bureau of Statistics
CDA	Community Driven Adjudication
CILIS	Centralised Integrated Land Information System
CSO	Civil Society Organisation
CSRC	Community Self-Reliance Centre
DLRO	District Land Revenue Office
DoLIA	Department of Land Information and Archive
DoLRM	Department of Land Reform and Management
DSO	District Survey Office
FAO	Food and Agricultural Organisation
FFP	Fit-For-Purpose
FLT	Flexible Land Tenure Act in Namibia
FPIC	Free Prior and Informed Consent
FWLD	Forum for Women Law and Development
HURADEC	Human Rights Awareness and Development Centre
ICT	Information and Communication Technology
JLOC	Joint Land Ownership Certificate
LRO	Land Reform Office
MoLRM	Ministry of Land Reform and Management
NRA	National Reconstruction Authority
PPP	Public-Private-Partnership
PRA	Participatory Rural Appraisal
RALAS	Reconstruction of Land Administration Systems in Aceh and Nias
SOLA	Solution for Open Land Administration
STDM	Social Tenure Domain Model
UDHR	Universal Declaration of Human Rights
UNDP	United Nations Development Program
UNECE	United Nations Economic Commission for Europe
UN-Habitat	United Nations Human Settlements Programme
VGGT	Voluntary Guidelines on Responsible Governance of Tenure

1. INTRODUCTION

1.1. Background and justification

About 75 percent of the world's population lacks access to formal and documented land rights (Enemark, Bell, Lemmen, & McLaren, 2014). Most of the population is living in developing countries. Among these, the majority of them are the poor and vulnerable groups (like indigenous groups, women, orphans, minorities, squatters, renters, undocumented citizens and landowners without a formal land title), living in informal settlements where they are lacking tenure security (Harper, 2006; Lemmens, 2011). When it comes to natural disasters, these people (the poor and vulnerable) are affected the most, one of the reasons is that these people generally reside in areas of no land use regulations, makeshift housing in risky areas or river banks which are susceptible to natural disasters (Gencer, 2013; McCallin & Scherer, 2015). Unger, Zevenbergen, and Bennett (2016) state that a combination of global change forces (people, land and disaster) and the disaster risk drivers (vulnerability, exposure and hazard) impact critically on all people-to-land relationships. Further, it increases the scale of the vulnerability of these informal settlers living in affected areas, thus triggering land conflicts and land grabbing in the long run. Since addressing informal land rights is beyond the extent of formal land administration systems, the poor and vulnerable often remains deprived of recovery and reconstruction, which results in migration and displacement, in case of disaster (Charoenkalunyuta, 2011; Usamah, 2013). According to the statistical report of UN-Habitat, approximately one third of urban population in developing nations lives in informal settlements and are more exposed and vulnerable to natural disasters compared to general population with no or very less opportunity for housing and recovery assistance because of weak land tenure (McCallin & Scherer, 2015; UN-Habitat, 2013, 2014).

Building an inclusive land administration system is a prerequisite to address the various tenure practices in a society, which exist out of the coverage of a conventional land administration system. A conventional land administration system has several limitations. It is based on a western style of land administration system developed over centuries that focuses on fixed boundaries survey, has complex bureaucratic procedures and involves advanced technologies, which does not perform well with the developing countries needs and services (I. Williamson et al., 2010; Zevenbergen, Augustinus, Antonio, & Bennett, 2013). Capturing land rights and issuing titles via a conventional land administration system requires a long time, accuracy and high cost (Toulmin, 2008; UN-Habitat, 2012). Besides, the conventional land administration does not provide proof of ownership to those who are informal land right holders (Augustinus, 2003). Since the majority of the population of developing countries lack tenure security, they are unable to prove their land ownership when it is required to impart resettlement and reconstruction services after disasters. In certain settings, land ownership forms the basis for getting housing assistance and reconstruction grants after disasters (McCallin & Scherer, 2015). Thus, an economic, fast and inclusive method of land mapping, registration and titling are required which can effectively address all land tenure types including informal land tenure. A process that fits the purpose of the society rather than aligning with the existing rules and methods of land administration is needed.

The Fit-For-Purpose (FFP) approach meets the above criteria. The FFP land administration approach focuses on the needs of the people and the system in relation to land. It supports the broader continuum of land rights by encompassing land tenure from the scale of informal to freehold. FFP approach is a human right approach as it provides a basis for recording land rights in an inclusive, flexible and

participatory manner leaving no one behind. It also recommends a cheap, fast and effective tool for land recordation. The FFP approach has emerged as a breakthrough in developing countries where conventional systems have failed to cover all the ranges of land rights and interfered with insufficient land policies, lack of economic resources and technical standards, bureaucratic unwillingness and land information silos (Enemark, Bell, et al., 2014; Unger et al., 2016; I. P. Williamson, 2001)

Nepal suffered an earthquake, also known as the Gorkha earthquake, in April 2015 followed by the second one in May, which affected nearly 31 districts of the country. The disaster resulted in the death of 8,831 people and affected more than 8 million people directly or indirectly (Guha-sapir, Hoyois, & Below, 2016). Among the victims, the most affected were the poor and vulnerable groups with informal land tenures, renters, squatters and Dalits who do not have formal land rights, though, some possess legitimate rights. During the reconstruction and recovery phase, land tenure issues emerged in two ways, the first issue was to relocate these people into a safe zone (to government land or land allocated through any acquisition process) and the second was to provide proof of land ownership. In both cases, resolving land tenure issues forms the basis for allocating reconstruction grants (Dijkstra, Mitchell, Bennett, Bhatta, & Chhatkuli, 2017). The opportunity to get recovery and reconstruction responses for the poor and vulnerable groups is low as they lack proof of ownership of the land or possess weak land tenure, which is not recognized by the formal system of land administration (Shrestha, Tuladhar, & Zevenbergen, 2015).

1.2. Research problem

Land administration in Nepal is conventional and supports recognition of only formal land rights. According to Dijkstra et al. (2016), the Survey Department of Nepal can (re)issue a title only in case if the land rights are officially recognized and documented. Even though, if Survey Department commences the work of land titling, it would take a lot of time to complete it because it has to follow all the mapping rules and processes, perform land surveys, which tend to be slow and include a complex process. On the other hand, the National Reconstruction Authority (NRA-an independent authority working for the recovery and resettlement of earthquake victims in Nepal) is supposed to provide reconstruction grants to the victims based on the proof of ownership of the land. The reconstruction activity can only proceed if people have legal land documents. NRA is confronting challenges of how to formalise the informal tenure in a short time period at low cost. The NRA does not have sufficient resources to involve lengthy processes as defined in the formal systems (Mitchell, Grant, Roberge, Bhatta, & Caceres, 2017). These issues would affect the community resilience desperately and exacerbate land conflicts because people cannot wait a long time without shelter (which is a human right) and land (which is needed for shelter) after the disaster (van der Molen, 2016). Moreover, as the constitution of Nepal 2015 advocates land right as a fundamental human right, addressing the land tenure issues of the poor and vulnerable appears as the critical factor for the realization of the reconstruction plans. Therefore, there is a pressing demand for an alternative approach that could substitute the current land administration system in addressing all form of land rights and tenure as well as aid in the recovery and reconstruction processes after disaster.

1.3. Conceptual framework

The research aims to close the legal, technical and institutional gaps encountered by conventional land administration systems by reviewing the necessity for FFP approaches in advocating land issues in a post-disaster environment. Since little has been written about the concept of FFP implementation on disaster risk management with a focus on developing countries, this research attempts to address post-disaster land issues via FFP approach. The core idea of using FFP approach here is based on its ability to provide an opportunity for the informal land right holders in getting the legal certification of their land tenure and settlements, which would further strengthen their tenure security, thus boosting them to cope with disasters and threats in a resilient manner. It could also facilitate reconstruction and recovery responses at

a low cost, efficient and flexible manner. To visualize the concepts presented above in the background and justification part, a conceptual framework is drawn which links the major concepts in a graphical form.

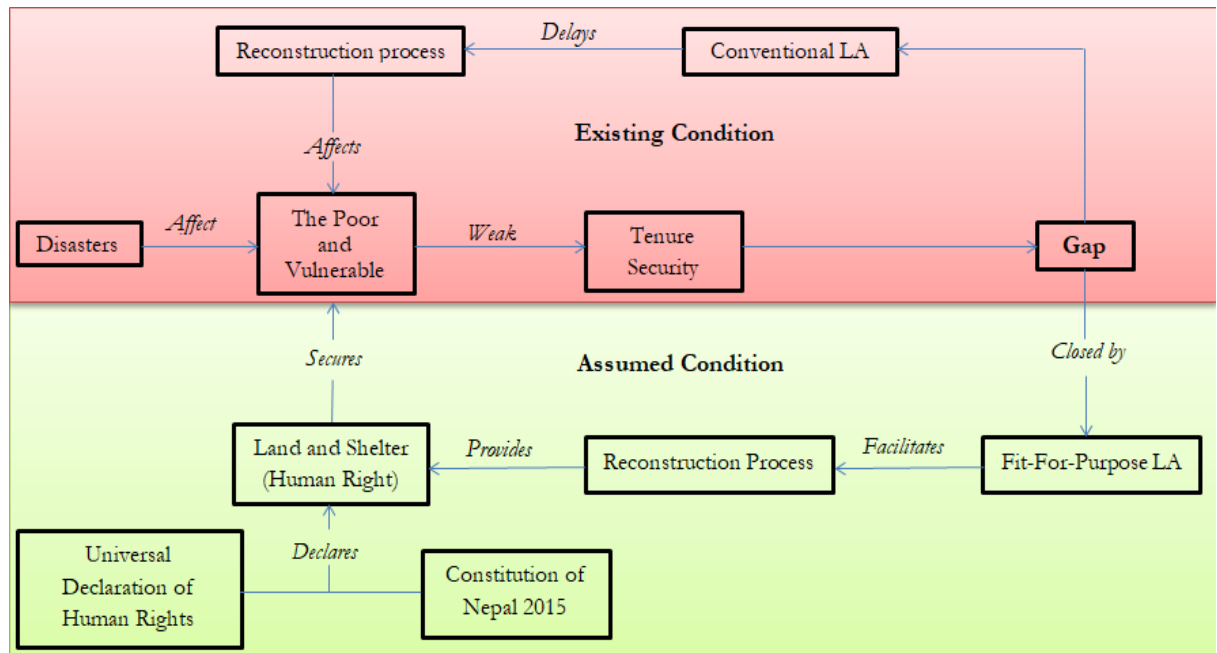


Figure 1: A preliminary conceptual framework showing the essence of FFP land administration in the context of post-disaster

1.4. Main objective

Having an overview of the poor and vulnerable in the context of disaster and limitations of the conventional land administration in addressing informal land tenure, it could be concluded that FFP approach can be taken as a role player in addressing the diverse land tenure issues existing in the society and facilitating the reconstruction process after disaster. This leads to the formulation of the main research objective:

To assess the opportunities to implement FFP land administration with a focus on the poor and vulnerable in post-disaster Nepal.

1.5. Sub-objectives

In order to accomplish the main objective, a list of sub-objectives is developed, which are listed below:

1. To identify the post-disaster land issues in the post-disaster environment in relation to the poor and vulnerable.
2. To explore the ‘security of tenure gap’ that affects the land rights of the poor and vulnerable in the context of the Universal Declaration of Human Rights.
3. To explore the legal, technical and institutional issues that impact the implementation of FFP approach in post-disaster Nepal.

1.6. Research questions and sub-objectives

In order to fulfill the prescribed sub-objectives, different sets of research questions are put forward the attainment of which ultimately leads to the main objective.

SN	Sub-objectives	Research questions
1	To identify the post-disaster land issues in the post-disaster environment in relation to the poor and vulnerable.	<ol style="list-style-type: none"> 1. What are the post-disaster land issues arisen due to the earthquake in Nepal? 2. What is the current status of those issues in regard to the poor and vulnerable in Nepal?
2	To explore the 'security of tenure gap' that affects the land rights of the poor and vulnerable in the context of the Universal Declaration of Human Rights.	<ol style="list-style-type: none"> 1. What are the different types of land tenure existing in Nepal? 2. Where is the 'security of tenure gap' in the current land administration system? 3. How does this gap affect the land rights of the poor and vulnerable in the context of the Universal Declaration of Human Rights?
3	To explore the legal, technical and institutional issues that impact the implementation of FFP approach in Nepal	<ol style="list-style-type: none"> 1. What are the current legal, technical and institutional issues in land administration system in Nepal? 2. How do these issues impact the implementation of FFP approach in Nepal? 3. What guidelines can be adapted for the implementation of FFP approach in Nepal?

Table 1: Table showing sub-objectives and research questions respectively

1.7. Available assessment framework

There are different frameworks developed by the various authors and institutions that help to assess the land administration system from the angle of organizational performance, land tenure security, flexibility in tenure mapping, disaster response and preparedness, land governance and responsible governance of tenure. Steudler, Rajabifard, and Williamson (2004) developed an evaluation framework to measure the performance of land administration system by considering policy level, operational level, external factors, and review process, but this framework does not speak much about the institutional and legal aspects as well as land tenure aspects of the poor and vulnerable. Zevenbergen et al. (2013) outlined principles for recording legitimate rights to the land of the poor and underrepresented emphasizing on the continuum of land rights. Similarly, the VGGTs developed by FAO provides guidelines for the responsible governance of tenure of land, fisheries and forests in the context of achieving national food security (FAO & CFS, 2012), whereas, the Land Governance Assessment Framework (LGAF) developed by World Bank seeks to evaluate the legal framework, policies, and practices regarding land governance (Deininger, Selod, & Burns, 2012). Similarly, Enemark et al. (2016) developed Fit-For-Purpose land administration, which focuses on the purpose and immediate needs of the society, flexibility in the approaches used and opportunity for incremental improvement over time. Mitchell et al. (2017) developed a framework, which is a combination of all the above frameworks and includes all the relevant issues considered prominent in the post-disaster context with a focus on FFP approach. This thesis is based on FFP frameworks and assesses the land administration in Nepal from the perspectives of legal, technical and institutional aspects as well as responses of land administration system towards post-disaster land issues (refer to section 3.6). Since the main goal of FFP is to secure land rights for all; in the same way, this thesis focuses on the aspects of land and tenure security rather than land use and value.

1.8. Thesis structure

This thesis is structured in the following seven chapters:

1. Introduction

This chapter contains the background of the research and justification made, research problem, objectives of the research followed by the research questions. It also has a conceptual framework graphically displaying the main concepts in the research. It also outlines the structure of the thesis and timetable of the overall activities to be followed during the thesis.

2. Research design

This chapter describes the approach used in research, methods used for data collection and field observation of the case study areas. Qualitative research, interviews, field visit, thematic analysis, and assessment are the main methods used in the research. It ends with the expected results of the thesis.

3. Land administration and impacts of land tenure security on the poor and vulnerable in the context of disaster

This chapter provides the theoretical perspectives of the different concepts that build up the research. It describes disaster and the land issues, role of tenure security, the legal, institutional and technical frameworks in the current land administration of Nepal and essence of FFP approach in building participatory and context-based land administration to support post-disaster reconstruction.

4. Land administration in post-disaster Nepal in regard to the poor and vulnerable

This chapter contains the findings and results obtained from the field survey. These results are derived from interviews with the key informants through in-depth and semi-structured interviews; field observation and discussion with earthquake-affected victims and local administrators in the case study areas; and collection of secondary reports.

5. Discussion of land administration in Nepal in post-disaster context

This chapter discusses the findings and key themes presented in the results section in relation to sub-objective 1 and 2. The chapter covers post-disaster land issues and recovery plans applied in support of the poor and vulnerable in Nepal. Next, it discusses the land tenure types existing in Nepal and the impacts of land tenure security on the poor and vulnerable in the context of UDHR as well as in case of disaster.

6. Assessment of opportunities for FFP land administration and guidelines for FFP implementation

This chapter provides an assessment of the gaps existing in the land administration systems based on FFP concepts. Finally, it reviews the application of FFP approaches in post-disaster context and draws guidelines to bridge the gaps towards the implementation of FFP land administration.

7. Conclusions and recommendations

This chapter draws proper conclusions from the discussion and assessment, and provides recommendations followed by suggestions for further research.

1.9. Timetable

Activities	2017																2018															
	September				October				November				December				January				February				March							
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
Literature review																																
Fieldwork																																
Mid-term Presentation																																
Preparation of Results																																
Review on Chapter 1-4																																
Discussion and assessment																																
Conclusion and Recommendation																																
Thesis Submission																																
Thesis Defence																																

Table 2: Timetable for the activities to be followed during thesis

2. RESEARCH DESIGN

2.1. Introduction

This chapter gives a brief description of the research methodology to be adopted. It explains the type of data required, sources of data collection, approaches and analysis of data and validation of results. It also takes into account the sampling and ethical aspects of the research.

2.2. Research methodology

The research aims to use a qualitative approach to analysis. The qualitative research generates ideas and concepts rather than numbers, focuses on the real-world context and the different perspectives associated with it in a systematic manner (Bricki & Green, 2007; Hancock, Ockleford, & Windridge, 2007). It reflects the aspects of social reality. Qualitative research is relevant to this thesis because it would help to gather stakeholders' own viewpoints and know-how regarding the implementation of FFP approach in Nepal. In this research, the study was conducted in three phases which includes pre-fieldwork, fieldwork, and post-fieldwork. Two types of data collection methods were used throughout the research 1) Literature review and 2) Interviews. Literature review provides secondary data whereas interviews provide primary data. They are described below in detail.

The first step in the research is a literature review and knowledge acquisition of various concepts: disaster and post-disaster land issues, tenure security and FFP land administration, land tenure types and human rights. These concepts are studied independently and then they are linked to meaningfully justify the purpose of the research. Secondly, a map of the case study areas and questionnaires are prepared for the fieldwork. Thirdly, fieldwork begins with the field observation of the case study areas in Kathmandu valley. After field observation, interviews are conducted with concerned organizations and other related stakeholders to know their perceptions regarding FFP approach. Finally, results are discussed against literature review and conclusions drawn from the fieldwork, gaps are assessed, and possible guidelines given for improvements against the existing gaps. The figure 2 below provides an overview of the methodology followed by a detailed explanation of methodological approaches.

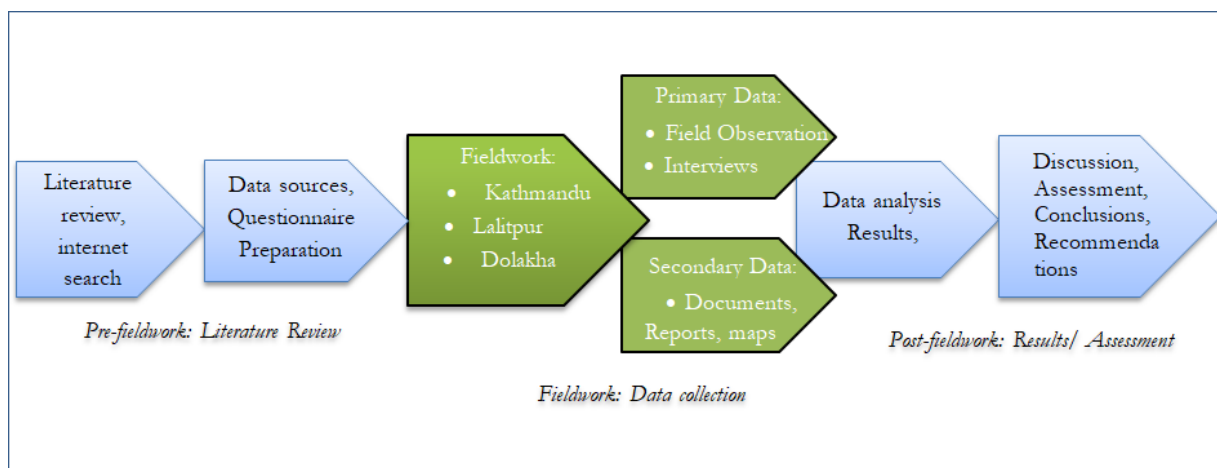


Figure 2: General overview of methodology

2.3. Pre-fieldwork:

2.3.1. Literature review and internet search

Literature review provides secondary data from the existing literature, reports, and articles. In this sub-chapter, five types of documents are adopted for knowledge acquisition. They are 1) Books 2) Journal papers and articles 3) Thesis (both MSc. and PhD.) 4) Reports published by national and international organizations like UN-Habitat, Global Land Tool Network (GLTN), International Federation of Surveyors, Food and Agriculture Organization (FAO), World Bank, and 5) Grey literature. Moreover, internet search would help to get additional information regarding latest developments and practices in FFP land administration. Concepts and theories about natural disasters, especially earthquake, effects on land administration system and the implementation of the FFP approach are reviewed with the focus on post-disaster land issues in the context of the poor and vulnerable. A literature search would garner a thorough knowledge of post-disaster land challenges; reconstruction strategies; technical and institutional settings and issues of land tenure; relocation and short as well as long-term resettlement planning. A literature review is a desk study which helps to collect textual data from the existing literature, which can be further analyzed, interpreted and presented in own words. It helps in developing a theoretical framework (Kumar, 2011). This helps to fulfill the first sub-objective.

2.3.2. Data sources and questionnaire preparation

A list of questions are prepared before going to field work to gather information (here qualitative information) from expert groups or selected respondents regarding the research topic, land issues and FFP implementation. Open type questions are preferable in order to get rich qualitative data from the interviewees, which would enable to derive more information based on their attitudes and personal experiences. Open-ended questions allow freedom to interviewees to express their opinions independently and in an open-minded manner (Bryman, 2012). Concerning data sources, the following tools and sources were used across the research:

- 1) Tools- MS-Word and Excel 2010, Google search engine, ArcMap 10.5.1
- 2) Images- Google Earth, OpenStreet Map
- 3) Shapefile data from National Geographic Information Infrastructure Program (NGIIP) of Nepal
- 4) Survey Department, Ministry of Land Reform and Management (MoLRM) and District Survey Office (DSO) of Dolakha
- 5) Local residents and administrators of Bansighat and Khokana settlements respectively
- 6) UN-Habitat Nepal and National Reconstruction Authority (NRA)
- 7) NGOs like Community Self-Reliance Centre (CSRC), Lumanti Nepal, INGO like OXFAM, local Civil Society Organisation (CSO) like Human Rights Awareness and Development Centre (HURADEC)

2.4. Fieldwork: Data collection and methods used

2.4.1. Primary data collection

I. Field observation

Earthquake-affected areas of Kathmandu valley like Bansighat and Khokana are visited to know the status of the victims, destruction as well as measures applied with respect to land administration system. Photographs are taken to visualize from the fieldwork. This also supports to fulfill the first sub-objective. For photographs, see appendix 3.

II. Interviews

Interview is regarded as the main source for data acquisition in the field for this thesis. Open-ended questionnaires are prepared for the interviews. Interview helps to get the perceptions of the stakeholders in their own words and experiences by probing, reflects the reality of any existing problems and solutions

in the society, which may not have been addressed through literature. The interview is preferable over questionnaire as it helps to find out the answers to the issues, which are new and complex and cannot be addressed by the illiterate. The interview is flexible and can be used with any kind of population (Kumar, 2011). Two kinds of interviews are conducted to get the primary data. They are discussed below:

a. Semi-structured interview

It is the most common way of gathering qualitative research data. It consists of the open-ended questions based on the topic areas to be covered aided by the topic guide (Hancock et al., 2007). It is preferred over other interviews because it provides a flexibility to both the interviewer and interviewee in responding to the questions, going off-topic to some extent or diving in details on particular questions as in in-depth interview (Bryman, 2012).

A semi-structured interview is conducted with a range of stakeholders like NRA representatives regarding post-disaster land challenges and the implementation of FFP approach. Similarly, interview with the NRA would also assist in finding out the legal, spatial and institutional hurdles that prevent the implementation of FFP approach. Moreover, country-specific guidelines for FFP implementation would also be considered, whether to upscale the approach or confine it just as an ad-hoc project. Not only this but also perceptions of INGO like OXFAM, UN-Habitat Nepal, NGO like CSRC, Lumanti Nepal, FFP implementers and visionaries are taken into account (UN-Habitat Nepal, 2017). For interview questions, see appendix 2.

b. In-depth interview

In-depth interviews are less structured than semi-structured and may or may not cover topic guide. It helps to get a detailed information on a topic for which little is known and may use only one or two questions (Bricki & Green, 2007). An in-depth, semi-structured interview can be conducted to help express respondents' ideas and thoughts in their own manner (Bryman, 2012).

An in-depth, semi-structured interview is conducted with the Survey Department to find out the gaps in the current land administration system as well as the suitability of the FFP approach. In addition to these, issues regarding spatial accuracy, technological aspects as well as the enabling environment for the scalability of the FFP approach are also considered. An in-depth interview is also conducted to get the perceptions from HURADEC in the context of the poor and vulnerable land rights. Since the political will is a must for the implementation of FFP approach, MoLRM is also interviewed to get to know their point of view concerning the benefits and flexibility of FFP approach if used in Nepal. An in-depth interview would allow getting to know in details about the topic areas, respondents own viewpoints and prospects about the on-going issues.

2.4.2. Secondary data collection

Secondary data like reports, booklets and maps published by NRA are collected from the office of NRA, Survey Department, and its branch offices during the fieldwork. Similarly, documents regarding the application of FFP land administration in Nepal, land and human rights issues are also gathered from CSRC, HURADEC and UN-Habitat Nepal for further references.

2.5. Post-fieldwork:

2.5.1. Findings/Analysis

After the fieldwork, the results and knowledge congregated are entered into transcripts. Then the thematic analysis technique is used to analyze the data gathered in the field. Thematic analysis is a process of analyzing qualitative data to extract key themes and issues in the data. It is more suited to qualitative data

like interview transcripts and field notes. It helps to derive information by analyzing the interview transcripts which may further provide insight into the research focus (Bryman, 2012). Results assembled in the fieldwork are later assessed against the literature review. For more details on themes, see research matrix in table 3.

2.5.2. Validation of results

Validation of results in a qualitative research refers to the validity and trustworthiness of data collected in fieldwork (Bricki & Green, 2007). Validation, also called respondent validation or member validation is a process whereby a researcher seeks agreement and approval he or she has conducted research with and requests feedback on that account. This helps to ensure that there is a good agreement between the outcomes and the perspectives of the research participants (Bryman, 2012). “The higher the outcome of validation, the higher the credibility (validity) of the research” (Kumar, 2011). Validation of results in this thesis is presented in the following four steps:

- 1) **Data collection:** In this thesis, the research is conducted in Kathmandu including Dolakha district of Nepal. In total, respondents from ten organizations (NRA, CSRC, Lumanti Nepal, OXFAM, HURADEC, DSO Dolakha, UN-Habitat Nepal, Khokana ward chief, Survey Department and MoLRM) are selected for an interview. For a list of organizations, see appendix 1.
- 2) **Presentation of results:** The data assembled in the fieldwork is analyzed using thematic analysis technique. Key themes and issues are extracted through transcription and field notes and presented in the form of results.
- 3) **Approval and feedback from respondents:** The results are then emailed to the interviewees together with the supervisors of this thesis in a transparent manner, with a purpose to seek confirmation and approval for further processing of the results. This step helps to improve the validity and reliability of results.
- 4) **Validation of results:** Eight out of ten interviewees provided approval and feedback. Unfortunately, a respondent from NRA could not be contacted as he was out of Nepal. Similarly, lack of access to internet facilities in Khokana caused difficulty in getting a response from Khokana ward chief. So, the validation level of the results in this thesis is eighty percent which makes the results easy to present and publish in an academic environment.

2.5.3. Discussion and assessment

After the results are validated, discussion of the land administration in Nepal is done in relation to sub-objectives 1 and 2 with reference to the results and theoretical perspectives (see chapter 5). Moreover, gaps in the legal, technical and institutional frameworks are also assessed based on FFP frameworks to address sub-objective 3 (see chapter 6). From the assessment, possible guidelines are outlined to bridge the gaps in the land administration system as well as to facilitate post-disaster reconstruction.

2.6. Sampling and sample size

A mixture of sampling techniques is used to select the number of respondents for the interview. Altogether, ten organizations (NRA, CSRC, Lumanti Nepal, OXFAM, HURADEC, DSO Dolakha, UN-Habitat Nepal, Khokana ward chief, Survey Department and MoLRM) are chosen for interview based on my professional knowledge. Expert sampling technique is used during an interview with the experts from certain organizations like Survey Department, MoLRM, and UN-Habitat Nepal. Similarly, purposive sampling is used when interviewing with the NGO, INGO and other stakeholders involved in the

recovery and reconstruction activities in Nepal. Expert sampling implies that the respondents are well-informed in the required field and exhibit profound experience in the land administration sectors. Purposive sampling is based on your judgements about the respondents who are likely to have required information, actively involved in the areas of reconstruction and recovery and support your activities (Kumar, 2011). For details on sampling techniques followed, see appendix 1.

2.7. Ethical considerations

A Free, Prior and Informed Consent (FPIC) principle is used to gather data in the fieldwork, especially during the interviews. FPIC states that the respondents should be given adequate information of the topic, the purpose of the data collected, right to self-determine or withdraw his/her opinions voluntarily (FAO, ACF, AA, IFRC, & WVI, 2016). In the same way, issues of confidentiality, cultural and behavioral aspects, permission to record interviews, consent sitting and thankfulness are the additional elements to be taken into account during interviews (Kumar, 2011). The organizations affected by the research are NRA, CSRC, HURADEC, OXFAM, UN-Habitat Nepal, Survey Department, MoLRM, Lumanti Nepal, DSO Dolakha and residents of Khokana and Bansighat settlements.

2.8. Study area

The study area chosen in this thesis is Kathmandu, Lalitpur and Dolakha districts of Nepal. Kathmandu is the capital city of Nepal and is surrounded by mountains from all sides. Kathmandu valley has three districts: Kathmandu, Lalitpur and Bhaktapur. In Kathmandu, there are many locations where the informal settlements are situated like Sankhamul, Sinamangal, Balaju, KhadiPakha and Bansighat (Toffin, 2010). From the list, Bansighat is selected for field visit and study regarding land tenure issues in the earthquake. Bansighat is an area easily accessible in Kathmandu. During an earthquake, many of the buildings were destroyed which adversely affected the landowners. Similarly, another area for field visit is Khokana of Lalitpur. It is a non-formal settlement and suffered damages during the earthquake. Khokana is on the periphery of Kathmandu ring road and is accessible. The study area also includes Charikot of Dolakha district where an interview with HURADEC and DSO Dolakha is conducted. It is one of the severely affected districts of Nepal by the earthquake. It takes ten to twelve hours by bus to reach Dolakha. The description of Bansighat and Khokana sites is given below.

2.8.1. Bansighat settlement

Bansighat is located in KMC ward 11. It is one of the oldest informal settlements of Kathmandu district situated alongside a river. There are altogether 136 families in Bansighat, who mostly came from Nuwakot, Ramechhap, Sunsari, and Surkhet districts of Nepal (Innovative Solution Pvt Ltd, 2016). More than 40 houses of the informal settlements of Kathmandu were damaged in the earthquake including Bansighat as well. These informal settlers are deprived of reconstruction grants and recovery measures as they do not have proof of their land. As a result, they are under fear of eviction and displacement by the permanent neighbors nearby (Dijkstra et al., 2017). In Bansighat, there are many monuments of cultural heritage value which were severely damaged, too. See figure 3 below for map.

2.8.2. Khokana settlement

Khokana is one of the historically important towns in located in Lalitpur district. It has a lot of historically valued temples and structures which attract tourists. Khokana is famous for its mustard oil processing and medieval architecture (Innovative Solution Pvt Ltd, 2016). During the 2015 earthquake, more than 1000 houses were damaged, of which 884 houses were fully damaged. Later, the families were relocated to the safe places. The people in the Khokana community do not have land titles and are, therefore, deprived of

reconstruction grants by the government (Dijkstra et al., 2017). An appropriate procedure is required to record their land rights and fast-track the reconstruction process. Below figure shows the map of Khokana and Bansighat. See figure 4 below for map.



Figure 3: Map showing the aerial view of Bansighat informal settlement

Source: (www.google.com/maps)

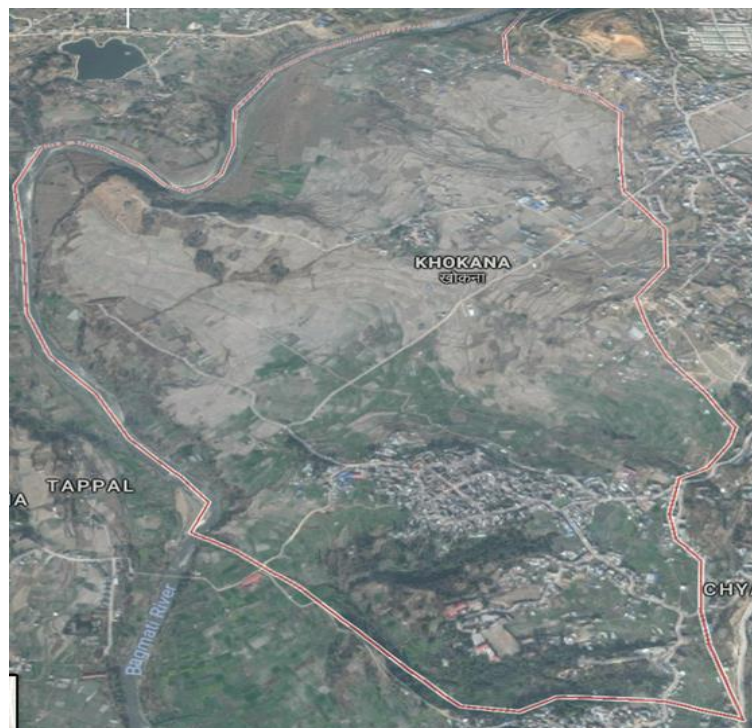


Figure 4: Map showing the aerial view of Khokana non-formal settlement

Source: (www.google.com/maps)

2.8.3. Map of Nepal showing study areas

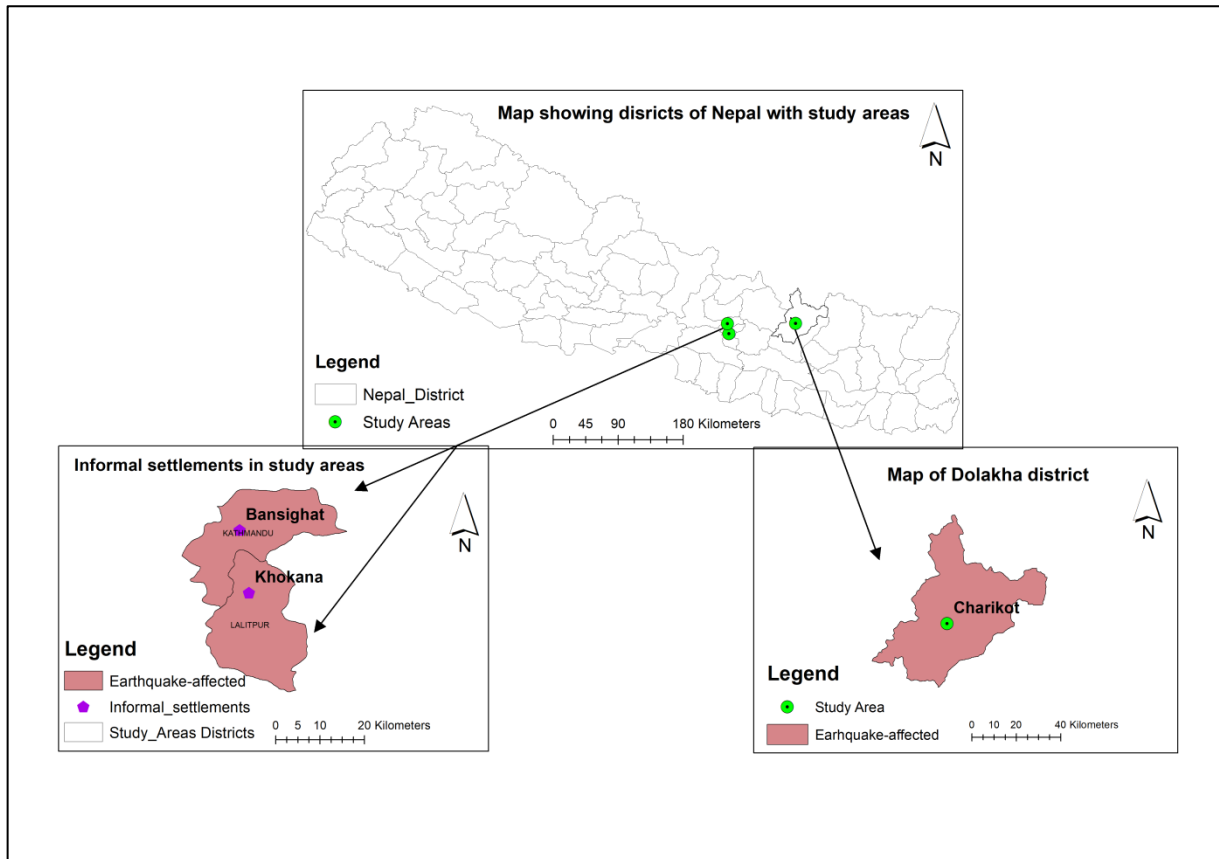


Figure 5: Map showing study areas with informal settlements in Nepal

Source: (www.ngip.gov.np)

2.9. Expected results

Following results are expected at the end of this thesis:

1. List of post-disaster land issues and recovery plans implemented, especially in relation to the poor and vulnerable.
2. Land tenure status in Nepal and the gaps in documenting the various land rights in Nepal.
3. Review of legal, technical and institutional frameworks in Nepal.
4. Possibility and scope of FFP implementation in Nepal, catalyzed by the post-disaster scenario.

2.10. Problems and limitations of the research

Though the research is able to achieve its objectives, yet there were problems faced during data collection and field visit, which impacted the quality of the research.

1. Lack of availability of adequate literature concerning the application of FFP approach in disaster and post-disaster land management.
2. Difficulty in accessing interviewees and field sites. Some interviewees did not agree for the recording of the interview.
3. Since Nepal is a mountainous country, there were problems of landslides and road obstruction.
4. Difficulty in getting approval from some of the respondents because of internet inaccessibility in remote areas.

2.11. Research matrix

The research matrix is a tool consisting of rows and columns where the various elements of a research like the goal, objectives, sources of data, methods of analysis and expected results are linked together (Choguill, 2005). The research matrix presented in the Table 3 shows the analysis technique, sources and methods of data collection, which support in answering the research sub-objectives by means of research questions. Research sub-objectives 1 and 2 are answered from data collected through literature review; secondary data; field observation and fieldwork interview from Nepal. Similarly, sub-objective 3 is answered using secondary data and interviews from Nepal supported by sub-objectives 1 and 2. Thematic analysis technique is followed for each sub-objective to analyze the data gathered from fieldwork. Finally, expected results are listed with respect to each research sub-objective.

Main objective: To assess the opportunities to implement FFP land administration with a focus on the poor and vulnerable in post-disaster Nepal.					
Research sub-objectives	Research questions	Data sources	Data collection methods	Analysis techniques	Expected results
I.To identify the post-disaster land issues in the post-disaster environment in relation to the poor and vulnerable.	<ol style="list-style-type: none"> 1.What are the post-disaster land issues arisen due to the earthquake 2015 in Nepal? 2. What is the current status of those issues in regard to the poor and vulnerable in Nepal? 	<p>Literature (articles, books, reports, and policy)</p> <p>NRA, OXFAM, CSRC, Lumanti Nepal</p>	<p>Literature review/ secondary data, field observation</p> <p>Semi-structured interviews</p>	<p>Thematic analysis (destruction, displacement and relocation, land records, land disputes, and reconstruction policy)</p>	<p>List of post-disaster land issues, and reconstruction policy in support of the poor and vulnerable</p>
II.To explore the 'security of tenure gap' that affects the land rights of the poor and vulnerable in the context of the UDHR.	<ol style="list-style-type: none"> 1. What are the different types of land tenure existing in Nepal? 2. Where is the 'security of tenure gap' in the current land administration system? 3. How does this gap affect the land rights of the poor and vulnerable in the context of the Universal Declaration of Human Rights? 	<p>Literature (articles, books, reports, and policy documents)</p> <p>Survey Department, MoLRM, and HURADEC</p>	<p>Literature review/secondary data</p> <p>In-depth interviews</p>	<p>Thematic analysis (land tenure status, tenure security, land as human right declared by UDHR and Constitution of Nepal 2015)</p>	<p>land tenure types like formal, informal and non-formal, gap in the documentation of land rights,</p> <p>human rights context</p>
III.To explore the legal, technical and institutional issues that impact the implementation of FFP approach in Nepal.	<ol style="list-style-type: none"> 1. What are the current legal, technical and institutional issues in land administration system in Nepal? 2. How do these issues impact the implementation of FFP approach in Nepal? 3. What guidelines can be adapted for the implementation of FFP approach in Nepal? 	<p>Literature (articles, books, reports, and policy)</p> <p>NRA, UN-Habitat Nepal, CSRC</p> <p>Survey Department, MoLRM, HURADEC</p>	<p>Literature review/ secondary data</p> <p>Semi-structured interviews</p> <p>In-depth interviews</p>	<p>Thematic analysis (issues in legal, technical and institutional aspects)</p>	<p>Gaps in the current spatial, legal and institutional frameworks</p> <p>Guidelines for FFP implementation in Nepal.</p>

Table 3: Research matrix showing the research objectives, data sources, collection methods, analysis and expected results

2.12. Summary

This chapter defined the methodological approaches for data collection based on qualitative approach of analysis. It described primary and secondary data where primary data is collected during the fieldwork and secondary data is extracted from the literature review. The fieldwork is planned to take place in Nepal in the case study areas Bansighat (an informal settlement) and Khokana (non-formal settlement). Primary data is exclusively acquired through in-depth and semi-structured interviews from a list of interviewees from different sectors like NGO, INGO, government organizations, CSO, local residents and administrators. Expert and purposive samplings are used during interviews based on FPIC principles. Thematic analysis technique is used to extract the key themes from the interview transcripts and literature review. Finally, the results produced are validated from the respondents, which increased the credibility of the results.

3. LAND ADMINISTRATION AND IMPACTS OF LAND TENURE SECURITY ON THE POOR AND VULNERABLE IN THE CONTEXT OF DISASTER

3.1. Introduction

This chapter deals with the general theory and concepts about the poor and vulnerable, post-disaster land issues, and the role of land tenure security in the context of disaster as well as UDHR. On the other hand, it also gives a detailed explanation of the legal, technical and institutional frameworks of the land administration in Nepal. The chapter also presents basic concepts and some specific examples of FFP land administration implemented across the globe, and the application of STDM in recording the informal land tenures existing in the society.

3.2. The poor and vulnerable in the context of disaster

According to FAO (2005), vulnerable groups are those who lack access right to land and has limited access to administrative and judiciary services. These categories include 1) Women 2) Victims of conflict and disaster 3) Ethnic and religious minorities 4) Squatters or slum dwellers 5) The poorest, who are least educated. Vulnerable groups are more likely to suffer displacement, discrimination, elite capture, and are unable to recover their land rights (Manirakiza, 2014). Due to the dominant social customs and norms, women are deprived of possessing property in their names and may have to compete with the male relatives while defending their rights (Reale & Handmer, 2011). In the same way, the poorest, also illiterate, face problems in understanding the processes of registration and recovery (FAO, 2007). Children made orphan due to disasters may be extremely vulnerable to exclusion from land rights. Similarly, ethnic or religious minorities may face discrimination by elites (FAO, 2005). In many cases, renters and informal right holders face complications receiving humanitarian assistance because of the lack of evidence or legal proof of land ownership (UN-Habitat, IIRR, & GLTN, 2012).

3.3. Disaster and post-disaster land issues

Disaster is “a serious disruption of the functioning of a community or a society involving widespread human, material, economic or environmental losses and impacts, which exceeds the ability of the affected community or society to cope using its own resources” (UNISDR, 2009). Disaster can be natural (floods, earthquakes, Tsunami or hurricanes) or human-made (war or conflicts) (Kusakabe, Shrestha, & Veena, 2015). This thesis focuses on the land issues arisen due to the earthquake in Nepal in 2015.

Mitchell & Garibay (2011) defines a land issue as “the need to protect pre-disaster property rights to land on landholdings where houses were damaged and people have been temporarily displaced.” The most common land issues resulting from natural or human-made disasters relate to the destruction (of land and property) and displacement (of the population) (Todorovski, 2016; UN-Habitat, 2010a). Similarly, land disputes arising due to the adjudication of land rights, problems faced by landless and tenants, proper evaluation of land and property, and planned resettlement are additional post-disaster land challenges confronted by the reconstruction authority (Fitzpatrick, 2008; Mitchell & Garibay, 2011). Furthermore, the relocation of victims, affected communities and the measures to improve disaster-resilient environment also create challenges for the authority in post-disaster context (Crawford & Brown, 2006). The impacts of disasters are increasing because of global change forces (people, land, and disaster) and disaster risk drivers (vulnerability, exposure, and hazard) (Unger et al., 2016).

In 2005, an earthquake struck Pakistan resulting in the destruction of 600000 houses and approximately 3.5 million were left homeless. Since the earthquake struck in mountainous areas, there was difficulty providing relief to the victims. The Indian Ocean tsunami 2004 destroyed over 200000 homes and displaced over 500000 in Indonesia (Fitzpatrick, 2008b). Similarly, the Haiti earthquake in 2010 killed 8831 people, destroyed many houses and displaced more than 800000 people (Mitchell et al., 2017). Disasters cause a large displacement of people, and relocation of victims becomes a prime concern. The movement of communities from one place to other place either via government or public option creates tension and incongruity between the two communities. For example, the movement of fishermen community near Dalit community caused due to Asian Tsunami 2005, created social conflicts between the two communities. The Dalits, the untouchables in India, feared that they the fishermen would dislocate them. Similarly, there was a problem faced by the Sri Lankan government when it was required to relocate coastal communities beyond 300 meters due to fear of future Tsunami. This also led to a disagreement between communities and the plan was dropped later (Brown & Crawford, 2006).

Land records serve as a strong basis for the government and humanitarian agencies while providing relief and housing grants to the victims. Loss of records can lead to land conflicts and impede the reconstruction process because the humanitarian agencies may feel difficulty providing housing facilities if the land ownership is not defined. As Rory Mungoven, senior human rights advisor of UN Country Team in Sri Lanka, argues, “the first step is to ensure people are able to recover their basic documentation, such as identity cards, and get death certificates issued for the purposes of inheritance” (Brown, Crawford, & Hammill, 2006). Similarly, without documents, urban tenants or renters may face challenges reclaiming advance payments in the event of a disaster (IFRC, 2014). Land ownership disputes and competing claims over land during land adjudication are triggering factors of land disputes. Delay in intervention may lead to elite grabbing of land as seen in case of Thailand and Sri Lanka where people were evicted after providing temporary shelter (Mitchell & Garibay, 2011). Similarly, in case of Pakistan, land disputes formed the major part of courts’ backlog. Due to long delay of courts in decision making and lack of community mediation aggravated the land disputes after disaster (Fitzpatrick, 2008b).

3.4. Land administration and the role of land tenure security in the context of disaster

3.4.1. Land administration in general

Land administration is defined as “the process of determining, recording and disseminating information about the ownership, value, and use of land when implementing land management policies” (United Nations Economic Commission for Europe, 1996). Likewise, Williamson, Enemark, Wallace, and Rajabifard (2010) states that land administration is the process run by the government using public or private sector agencies related to land tenure, land value, land use and land development. So, land administration is basically concerned with people to land relationships and their varying level of rights, also called the continuum of land rights (see sub-chapter 3.6.2). The three components of land administration play an important role in building resilience and facilitating reconstruction to the community in the context of disasters (Mitchell, Myers, & Grant, 2014). Here, we describe the role of land tenure security with an emphasis on post-disaster context.

3.4.2. Land tenure and the role of land tenure security in the context of disaster

Land tenure is “the way land is held or owned by individuals and groups, or the set of relationships legally or customarily defined amongst people with respect to land. In other words, tenure reflects relationships between people and land directly, and between individuals and groups of people in their dealings in the land. Land tenure system is a set of formal or informal rules and institutions which determine access to, and control over, land and natural resources” (UN-Habitat, 2008).

Land tenure can take several forms, from formal (freehold, leasehold, public and private rental), customary, or religious to informal and non-formal (see the continuum of land rights 3.6.2). Every tenure has varying level of legality and recognition set by the legal framework of a country. Land tenure systems can be different in different countries. For example, Islamic countries have Islamic tenure system where ‘Waqf’ (religious land), ‘mulk’ (individual ownership), ‘miri’(state land) and ‘musha/mushtarak’ (collective/tribal ownership) exist as four kinds of land tenure (UN-Habitat, 2008). Informal tenure in the Caribbean can be family land, illegally occupied public or private land, and customary land as well as communal land. In Georgia and Nigeria, pastoral land right is common (UN-Habitat et al., 2012). Land rights can be socially or legally legitimate depending upon the recognition and acceptance by society or law respectively. Rights can be non-formal (squatting, unauthorized sub-divisions, unofficial rental, etc.) or condominium (common property) (Palmer et al., 2009). Similarly, some land rights comply with the law but lack legal recognition and are extra-legal in nature like customary land owned by indigenous community. Rights can be de-jure (protected in laws) or de-facto (existing in reality) like grazing rights (FAO, 2005).

Land tenure security is “the degree of confidence that land users will not be arbitrarily deprived of the rights they enjoy over land and the economic benefits that flow from it; it is also the right of all individuals and groups to effective government protection against forced evictions” (FAO, 2003; UN-Habitat, 2008). With respect to land rights, UN-Habitat states “It is now well-recognized that secure land and property rights for all are essential to reducing poverty because they underpin economic development and social inclusion. Secure land tenure and property rights enable people in rural and urban areas to invest in improved homes and livelihoods. They also help to promote the good environmental management, improve food security, and assist directly in the realization of human rights, including the elimination of discrimination against women, the vulnerable, indigenous groups and other minorities.” Secure land tenure plays an important role both in pre-disaster and post-disaster phase.

I. Pre-disaster situation

The poor and vulnerable are the first to suffer in disaster. Their vulnerability to natural disaster is attributed to multi-dimensional factors like population growth and environmental management, social inequality and unplanned human settlements on riverbanks or in no-construction zones (Brown & Crawford, 2006; Gencer, 2013). Generally, the informal settlers do not possess secure land tenure. Adequate access to land and property rights helps to create disaster-resilient environment. It provides them confidence and security in their investment both in the present and for future generations (FAO, 2013). On the other hand, when land right is insecure, farmers or tenants hesitate in investing in the land and its improvements. There is a fear that the investment would be claimed or evicted at any time by the landowner without giving any compensation if there is no document (Griffith-charles, Spence, Bynoe, Roberts, & Wilson, 2014)

II. Post-disaster situation

During disaster, the poor and vulnerable are affected the most. Also, they are more likely to be relocated than any other groups and are generally under-represented during reconstruction. Moreover, due to weak tenure or lack of land documents deprive them in the recovery phase. Since many authorities demand the proof of title to the land occupied for reconstructions, they are bypassed or discriminated in the reconstruction and housing assistance. This pushes them towards increased vulnerability (McCallin & Scherer, 2015). As said by Clinton after Asian Tsunami 2005, “I can think of nothing that will generate more income over the long run for average families in this region than actually having title to the land they own”. So, the sooner people are made secure, the faster they develop resilience and the less dependent they are on humanitarian hand-outs (Brown & Crawford, 2006).

In Asian Tsunami 2005, due to the absence of secure land rights, renters and squatters faced great sufferings during recovery and reconstruction of Aceh in Indonesia. The Reconstruction of Land Administration System in Aceh and Nias ("RALAS") authority did not recognize the renters and squatters and no reconstruction services were provided initially. The renters and squatters went in protests and demonstrations against the authority until the government made a policy of free land and housing in February 2007. It was noted that the problems of renters and squatters need to be assessed as early as possible after a disaster. Undue delays may lead to social tensions and may increase future squatting and illegal settlements (Fitzpatrick, 2008a). But the 2001 earthquake in Bhuj of Gujarat favoured the rights of landless, secondary rights holder and issues of tenure security by providing housing assistance and security regardless of pre-earthquake land tenure situation (Fitzpatrick, 2008b).

Women find their tenure to be insecure in a male-dominated society. Often, women have only usufruct rights to land, i.e., right to use only and their claim to the land is made through their nearest kins (father or husband). The situation becomes worse-off, especially in disasters, when widows or female-headed households face challenges to secure their rights in case of land disputes or inheritance when they are competing against male relatives (Kusakabe et al., 2015). For example, though women in Pakistan possess the right to access land and property, the customary practice does not allow inheriting. The adverse effect of this was felt in the 2005 earthquake where many women were deprived of recovery and compensation services compared to men. This made women's right to land more insecure and vulnerable to eviction, loss of livelihood after the earthquake (Mumtaz & Noshirwani, 2007). Similarly, in Indonesia, though the RALAS authority implemented the gender inclusive steps to register land, it was observed that less than 5% of the land was registered jointly in the name of husband and wife because of dominant social norms (Fitzpatrick, 2008a).

3.5. Land administration in Nepal and its legal, technical and institutional frameworks

3.5.1. Introduction

The land administration in Nepal is conventional and honors only formal land title. Land tenure recorded formally by the land administration is *Raikar* tenure which comprises public land, government land and private land including the *Guthi* land (Acharya, 2008). MoLRM is responsible for the overall management of land-related policies and activities like mapping and registration in Nepal (MoLRM, n.d.).

3.5.2. Legal and regulatory framework: Land tenures in Nepal

The legal and regulatory framework covers set of rules and regulations, judicial and statutory systems, policies, directions and instructions of land institutions that help to administer land and its related functions (World Bank, 2012).

From history to the present, the status of land tenure in Nepal has changed from the absolute state ownership to the freehold ownership. Different customary tenures that existed were *Raikar*, *Birta*, *Guthi*, *Kipat*, *Jagir*, and *Rakam* (figure 6). After the establishment of Land Survey and Measurement Act 1963 and Lands Act 1964, all those tenures were converted into *Raikar* tenure. The various land tenure forms from past to the present are shown below with explanation (Acharya, 2008; Tuladhar, 2004).

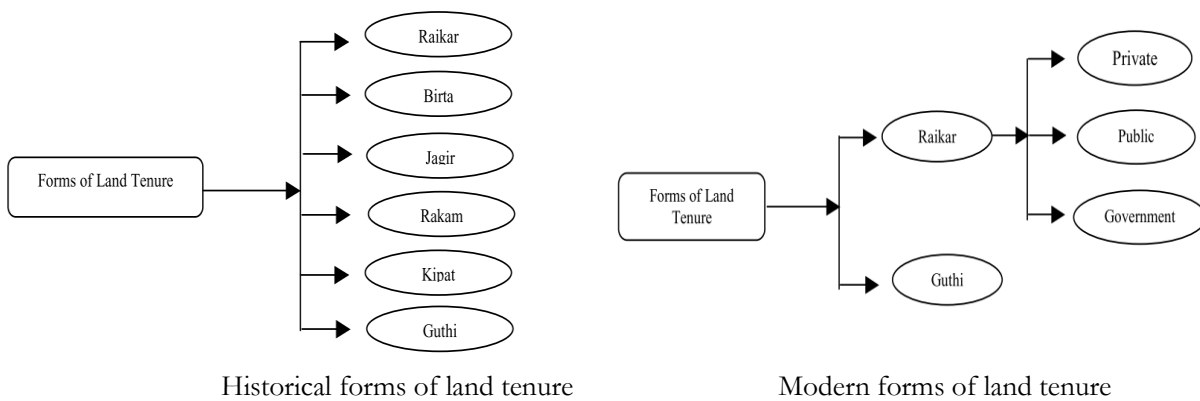


Figure 6: Land tenure forms in Nepal

Source: (Tuladhar, 2004)

I. Modern forms of land tenure

All the historical forms of land tenure were finally converted into *Raikar* tenure, except *Guthi* land which is still used for cultural purposes. The *Raikar* tenure is recognized as the formal land tenure in Nepal (Subedi, 2009; Tuladhar, 2004). Modern forms of land tenure now include:

- 1) **State land:** It includes public land and government land. Public land is the land which has been used by the public since ancient time and not limited to any individual ownership. They are well, water bank, pond and bank thereof, cattle exit, pasture land, graveyard, exhibition and sports place. Similarly, government land is in direct control of the government of Nepal. They are forest, jungle, river, stream, canal, lake, pond and bank thereof, canal, ditch, barren, steep or sandy land (MoLRM, 1978).
- 2) **Trust land:** This kind of land tenure is managed by Trust Corporation and relates only to religious activities. There are different forms of trust land (Guthi Sansthan, 1962; Trust Corporation, 1976). They are:
- 3) **Private land:** Land rights which are registered and documented in the government land records. They have high social and legal recognition. In private land, an individual has full right to use, sell, invest or mortgage land. According to the percentage distribution of land tenures in Nepal, state land in Nepal accounts for 73% of total area, private land 26.9% and trust land 0.38% (Wily, Chapagain, & Sharma, 2008), as shown in pie-chart below:

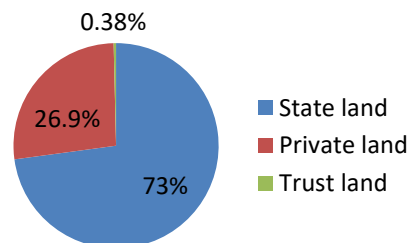


Figure 7: Land distribution in Nepal

3.5.3. Existing laws and regulations that affect land tenure security in Nepal

The existing legal framework is based on historical judicial lines rather than administrative approach. It is rigid and age-old and records only private ownership of land (Dijkstra et al., 2017). The current legal and regulatory framework governing land tenure in Nepal includes the following formal laws and regulations:

1) **The Land (Survey and Measurement) Act, 1963**

This act conducted systematic cadastral survey and mapping of the whole country in the initial phase “The major issue in the Act is the provision of re-survey. This provision does not clearly state that the District Land Revenue Office should compulsorily accept the new records generated through resurvey” (DoLRM, n.d.-b; Tuladhar, 2004).

2) **Land Revenue Act, 1978**

This act helps to carry out land administration activities like maintaining ownership, registration of new land as well as the settlement of disputes over land issues. “This Act is not so comprehensive as compared to others as this does not cover all substantial and procedural matters related to land administration and settlement of disputes. In most of the cases, other Acts are to be referred to settle the cases” (DoLRM, n.d.-b; Tuladhar, 2004).

3) **Trust Corporation (Guthi Sansthan) Act, 1976**

Under this act, the Trust Corporation administers and maintains records of trust land. This act also gives provisions regarding trust tenancy and other related trust land issues. However, there needs to be a good coordination between Trust Corporation with DLROs and LROs (DoLRM, n.d.-b; Trust Corporation, 1976; Tuladhar, 2004).

4) **The Muluki Ain (General Code or Common Law Codes or Civil Code), 1963**

This is a common law and is executed when there is no any law on any particular subject. Before the enactment of Land Revenue Act, 1978, it was used to administer all the land related issues but now it has become ineffective. “The courts, however, still refer the law codes relating to land to settle the disputes. Many of the provision made in the chapters, as mentioned above, of this law codes have been outdated and create confusion as being contradictory to other specific laws” (DoLRM, n.d.-b). *Muluki Ain* retains gender disparities against women as a daughter needs to return the shared ancestral property to her parental family after her marriage. Women do not have functional rights to land transactions unless permitted from the family members (Government of Nepal, 1963; International Organisation for Migration, 2016).

5) **Land rights in the Constitution of Nepal 2015**

Regarding land and property rights, the Constitution of Nepal 2015 contains the following articles.

Article18. **Right to equality:** All offspring shall have the equal right to the ancestral property without discrimination on the ground of gender.

Article25. **Right relating to property:** Every citizen shall, subject to law, have the right to acquire, own, sell, dispose of, acquire business profits from, and otherwise deal with, property.

Article37. **Right to housing:** (1) Every citizen shall have the right to an appropriate housing. (2) No citizen shall be evicted from the residence owned by him or her nor shall his or her residence be infringed except in accordance with law.

Article38. **Rights of women:** The spouse shall have the equal right to property and family affairs.

Article40. **Rights of Dalit:** (1) The State shall once provide land to the landless Dalit in accordance with law.

(2) The State shall, in accordance with law, arrange a settlement for the Dalit who do not have to house.

(3) The facilities conferred by this Article to the Dalit community must be distributed in a just manner so that the Dalit women, men, and Dalit in all communities can obtain such facilities proportionately. Source: (Government of Nepal, 2015)

6) **High Level Land Reform Commission 2008 and High Level Scientific Land Reform Commission, 2010**

These commissions were formed to establish land reform programs in Nepal by providing land to the landless, *sukumbasi*, indigenous groups, tenure security to the tenants, end feudal landownership and enable

women’s access to land rights. So far, the commissions produced an optimistic report but due to poor implementation, no considerable progress was achieved (MoLRM, 2008, 2010).

7) Landless Peoples' Problems Solving Commission (Sukumbasi Samasya Samadhan Aayog)

This commission identified 263738 *Sukumbasi* families worthy of land entitlement but the commission was only able to provide a temporary land entitlement paper to 10278 families and landowner certificates to 1278 families. This resulted in the invasion of public and forest lands by other landless groups mainly from *Udayapur, Chitawan, Nawalparasi* and *Bardiya* districts. Meanwhile, the land distributed to other groups was declared forest land by the new government and they were brutally evicted. So, the struggle to get land rights was again continued by these people (Karki, 2002).

8) National Shelter Policy 2012

This policy was enacted to provide housing to the landless and homeless based on building standards, formulate rules and regulations regarding rental housing and to plan housing and settlements for people living in unsafe zones (Ministry of Urban Development, 2012).

9) Commission for Planned Settlements (Byasthit Basobas Aayog), 2016/17

This commission was formed to stop the encroachment of state and trust land, improve and prepare a database of informal settlements and address the land tenure issues of landless and *sukumbasi* all over Nepal (<http://www.molrm.gov.np/>).

3.5.4. Institutional framework

Institutional framework relates to all the land management institutions like governmental, community or private stakeholders who are involved in surveying, administration and allocation of land (van Asperen, 2014).

The Ministry of Land Reform and Management is the state ministry responsible for land reform in Nepal. Also, there are four different departments, one Trust Corporation, and one land use project (figure 8). They are listed below with their functions:

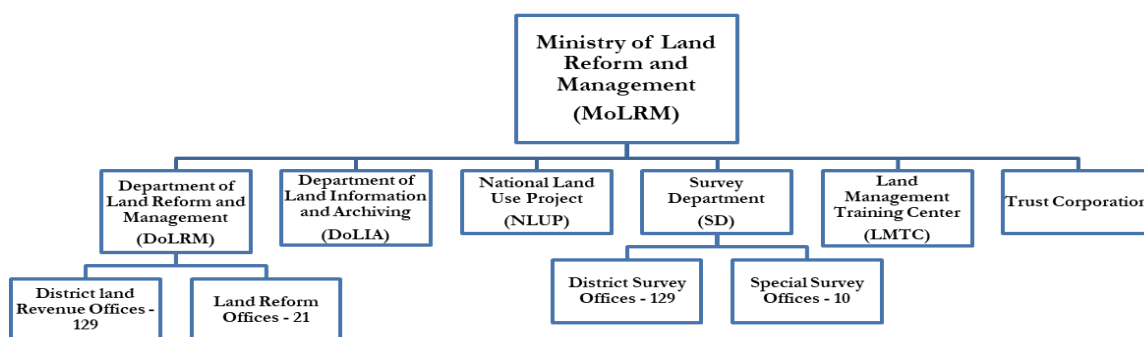


Figure 8: Organizations involved in land reform and management in Nepal

Source: (www.molrm.gov.np/)

- 1) Department of Land Reform and Management (DoLRM):** It consists of 129 District Land Revenue Offices (DLRO) and 21 Land Reform Offices (LRO) running all over the country. Major functions of DoLRM are land registration and updating of land records, management of tenancy rights, revenue

and tax-related tasks and resolving problems for the squatters and informal settlements through national and district level offices (<http://dolrm.gov.np/>).

- 2) **Survey Department:** It consists of 129 District Survey Offices (DSO) and 10 Special Survey Offices. Its major functions are the preparation of cadastral maps and updating of the land database, provision of surveying and mapping services like maps, aerial photographs, geodetic and administrative data of Nepal. The district level offices conduct land transactions and rights transfer in coordination with the Land Revenue Offices (<http://dos.gov.np/major-activities/>).
- 3) **Trust Corporation:** It has been established to maintain the land tenure issues related to trust land all over the country. All the religious and charitable land comes under trust land (<http://www.guthisansthan.org.np/eng/>).
- 4) **DSO Versus DLRO:** The initial survey and mapping works are completed by the DSO. DSO produces a complete database of ownership records, cadastral sheets, topographic features in the map, tenancy records and updated transactions in a document called *Field Book*. It then prepares land ownership certificates based on an individual claim or any evidence of tax receipt along with citizenship certificate. Finally, it transfers all the land ownership records to the DLRO except the cadastral maps. All the fundamental records of land transactions in DLRO are maintained in one register called *Moth*. So, if a transaction has to be completed, it has to be recorded at both the offices separately (Tuladhar, 2004).
- 5) **Involvement of other stakeholders:** There are several other organizations actively involved in addressing land issues in the country. The National Land Rights Forum advocates for the land rights of the landless farmers. Similarly, CSRC is focusing on the land and agrarian rights as well as contributing towards land reform policies. Several INGOs like UN-Habitat, OXFAM, Care Nepal, Action Aid Nepal, International Labour Organisation, and FAO are advocating for secure access to land to the poor and vulnerable groups in Nepal (CSRC, 2012).

3.5.5. Land governance in Nepal

According to Basnet (2012), good land governance includes 1) transparency 2) effective and efficient land administration system 3) civic engagement and participation 4) rule of law 5) inclusiveness 6) security of tenure to all 7) accountability and integrity 8) sustainability and accessibility 9) equity 10) subsidiarity and political stability. Land administration in Nepal is mainly concerned with survey and land registration of parcels. Since the survey office and the registry office are different and far from each other, separate cadaster system of land administration is in implementation in Nepal. The public has to often visit both the offices for the registry and transfer of land and property, which is cumbersome and lengthy. Since the offices are not at the same place, this increases the cost of transactions, time and effectiveness (Subedi, 2009).

According to Doing Business Report World Bank (2016), the process of land registration in Nepal is better than that of many countries in the world. In the report, Nepal has been ranked as 70nd position whereas New Zealand occupies the first position out of 190. In South Asia, Nepal ranks as the second position and has the fastest, cheapest and easiest registration processes of land and property. There are only three procedures which take only five days to register land and property in Nepal, and the cost is just five percent of total property (World Bank, 2016). On the other hand, in the report of Transparency International 2017, Nepal ranks 131st position in the world out of 176 economies in the corruption perception index 2016, while the score was 29 out of 100 in the year 2016. The status of transparency is

weak in Nepal and attributes to the higher percentage of corruption, namely administrative and bureaucratic corruption where officials take bribes and extortions for services to the public. The corruption is highest in land sectors especially in the land registration offices as people are compelled to pay a bribe to get their work done in fast track (Transparency International Nepal, 2016). Subedi (2009) identifies a number of weaknesses in the land administration of Nepal as complex procedures with more than 30 steps; paper-based transactions; biasness in land administration services against poor people; lack of integrated land information services; centralized land administration services and lack of integrity in land professionals. However, the government has initiated electronic land transaction system called Land Records Information Management System with a view to automate land records and related transactions in fourteen districts of Nepal. This is expected to increase efficiency in land business processes and promote accessibility of land information to land owners (DoLRM, n.d.-a).

3.5.6. Technical or spatial framework

The technical framework includes tools and technology applied to capture land records. Further, it deals with the GIS software and database technology required for processing of data and modelling of information (Augustinus, Lemmen, & Oosterom, 2006; UN-GGIM, 2014).

Land administration system in Nepal is conventional and highly paper-based. Majority of the surveys are still done using traditional plane table survey which is based on fixed boundaries system and rigid standards of accuracy (Dijkstra et al., 2017). The accuracy varies from 1:500 for urban and dense settlement areas to 1:2,500 for rural and large parcel areas (Tuladhar, 2004). The history of cadastral survey traces back to 17th century in Nepal until in 1965 a systematic cadastral survey was initiated which mapped the whole country. The main objectives were fiscal cadastre and land reform management. In total, 75 districts of Nepal have been captured in cadastral sheets and connected to national coordinate system network. Taking into consideration of land valuation and ownership disputes regarding accuracy, Survey Department commenced digital cadastral survey as a pilot project in Banepa of Kavre district in 2006, which is still in continuation (<http://dos.gov.np/>). In addition, computerization of all the existing paper land records is being done by DoLIA since 2000. It has completed the scanning of all cadastral map sheets of 84 districts and collection of ammonia print of 74 districts till now. DoLIA is attempting to create Centralized Integrated Land Information System (CILIS) by connecting the information of all district level offices to the central server (<http://dolia.gov.np/en/>).

The graphical technique of surveying is not fit enough for planning and development purposes. It is slow, cumbersome and expensive. Despite, the surveying works in Nepal are still being carried out using the same plane table method. Use of aerial imagery for surveying and mapping is still in debate in Nepal, though it is well accepted that the use of imageries and photographs would reduce field survey cost tremendously, increase landowners trust on images and promote public participation in mapping activities (Survey Department, 2012, p.9-13).

3.5.7. Land and human rights in the context of disaster

The right to own land and property has been internationally acknowledged as a fundamental human right. According to Article 17 of the Universal Declaration of Human Rights (UDHR) – (1), everyone has the right to own property alone as well as in association with others and that (2) no one shall be arbitrarily deprived of his property (United Nations, 1948). Though right to land as a fundamental human right has been enshrined in the constitutions of many countries, less developed countries (except for the developed (western) countries) continue to struggle with issues such as tenure insecurity, informal settlements and issues of women's land right (Enemark, Hvingel, & Galland, 2014). Reasons land administration system failed in covering the diverse tenure practices of people like customary, non-formal, informal or religious

(UN-Habitat, 2008a) which are socially acceptable yet not recognized legally, are lack of appropriate land policies, adequate information and weak enforcement of laws (van der Molen, 2002). Several guidelines and innovative approaches have been developed by UN-Habitat and FAO to embrace the diverse form of land rights existing in community ranging from informal tenure to freehold like the Social Tenure Domain Model (STDM) (UN-Habitat, Zevenbergen, et al., 2012) as well as the Voluntary Guidelines on the Responsible Governance of Tenure (VGGT) (FAO & CFS, 2012). The guidelines provide the basis for the governments to construct laws and policies, which meet the requirements to address all the existing land tenures in the country as well as fit with the purposes and the available resources of a country for building an appropriate land administration system.

Similarly, IASC (2011) has adopted operational guidelines to protect human rights to housing, land, and property in a situation of natural disasters. The guidelines emphasize that the land issues after disaster need to be addressed immediately based on the rights-based perspective in order to ensure sustainable recovery and reconstruction after a disaster (Fitzpatrick, 2008b). In addition, the land administration system should ensure human right to “minimal property” to live peacefully without any infringement to every citizen in the society by providing tenure security to all citizens (Enemark, et al., 2014).

3.6. Fit-For-Purpose land administration and its applications

FFP land administration is an approach that addresses “the needs of the people and their relationship to the land, supports tenure security for all and helps sustainable management of land use and natural resources” (Enemark et al., 2016). It focuses on the purpose of the system rather than concentrating on high-end surveys and stringent system requirements. It provides pioneering solutions to tackle land administration issues in a flexible, participatory and cost-efficient manner focused on developing countries (Enemark, Bell, et al., 2014). Elements of FFP approach are flexible, inclusive, participatory, affordable, reliable, attainable and upgradable.

3.6.1. Basic concepts and principles of FFP land administration

The three key characteristics of FFP approach are based on the purposes of the system, flexibility in adopting technology and solutions, and incremental improvement during the maintenance phase when required. Similarly, FFP has three core components: legal, technical and institutional frameworks, each of which consists of four key principles that help to construct country-specific guidelines for implementation of FFP land administration (refer to figure 9 and table 4 below). The legal framework supports the continuum of land rights (described in sub-chapter 3.6.2) and helps to close the ‘security of tenure gap’ existing in most developing countries by recommending flexible tools and guidelines for recording all the land tenure types existing in the country. Additionally, it advocates for gender equity and human rights regarding land and property rights. The spatial framework guides to use aerial imagery and a visual boundary approach (also known as “general” boundaries) for data acquisition followed by incremental updating of accuracy. This can minimize the registration time and mapping cost substantially. Similarly, the institutional framework supports VGGTs and advocates for good land governance, which ensure efficient and transparent administration of land rights and land information accessible for all. Importantly, the institutional framework brings the concept of integrated institutional frameworks by creating land and natural resources as a coherent whole rather than in silos and mandates for flexible Information and Communication Technology (ICT) approach (Enemark et al., 2016).

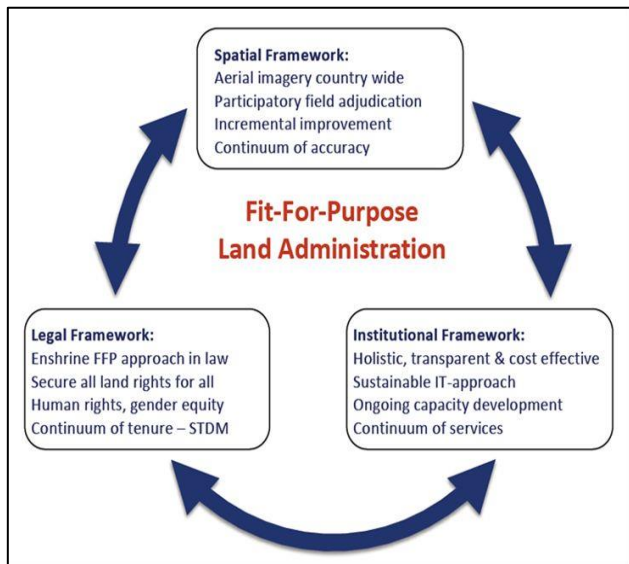


Figure 9: Basic concepts about FFP land administration

KEY PRINCIPLES		
Spatial Framework	Legal Framework	Institutional Framework
<ul style="list-style-type: none"> Visible (physical) boundaries rather than fixed boundaries Aerial / satellite imagery rather than field surveys Accuracy relates to the purpose rather than technical standards Demands for updating and opportunities for upgrading and ongoing improvement 	<ul style="list-style-type: none"> A flexible framework designed along administrative rather than judicial lines. A continuum of tenure rather than just individual ownership Flexible recordation rather than only one register Ensuring gender equity for land and property rights. 	<ul style="list-style-type: none"> Good land governance rather than bureaucratic barriers Holistic institutional framework rather than sectorial siloes Flexible IT approach rather than high-end technology solutions Transparent land information with easy and affordable access for all

Table 4: Key principles of FFP approach

Source: (Enemark et al., 2016)

3.6.2. Continuum of land rights

FFP supports the continuum of land rights (figure 10). The continuum of land rights is a range of possible forms of land rights, where the continuum has varying sets of rights, degrees of security and enforcement. The informal land tenure though has a social legitimacy is not recorded officially in many countries of Asia and Africa. Similarly, the parcels, plots or dwellings may change in status if informal settlers are granted titles or leases. Some countries have customary or communal tenure which may not be recorded by the new system and laws, but still, they prevail, and the transaction in them continues informally (UN-Habitat, 2008b). A continuum of land rights offers a practical and pro-poor recordation of land rights that allows people to get onto this tenure rights ladder. It provides an incremental approach of upgrading land rights over time in response to available technology and resources (Zevenbergen et al., 2012).

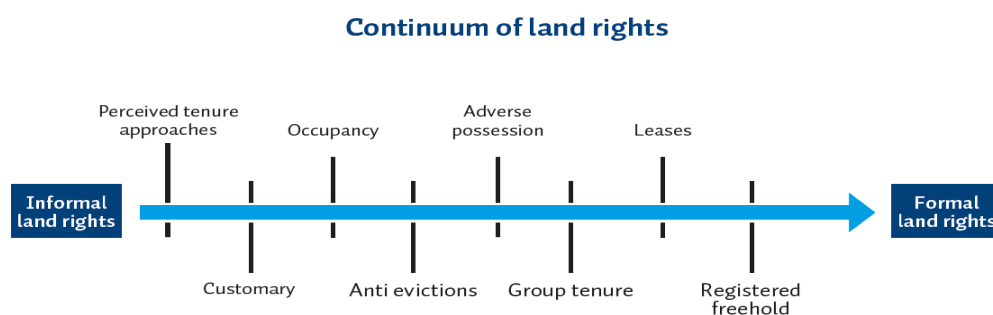


Figure 10: Continuum of land rights

Source: (UN-Habitat, 2008)

3.6.3. Examples and applications of FFP approach:

3.6.3.1. Social Tenure Domain Model (STDM)

Land rights like customary, informal, community, non-formal, secondary rights practiced in many countries remain outside the formal system of land administration. These land rights holder accounts to nearly 70% of the world's population. The Social Tenure Domain Model has emerged as a game changer.

It could close the gap by recording all the possible land tenure type existing in the community (Lemmen, 2013). STDM is a pro-poor, participatory and affordable land tool for recording land tenures along the continuum of land rights. It provides a clear picture of who owns what and where. It is an FFP tool for mapping land rights in a flexible and inclusive way (Lemmen et al., 2016). It describes the concepts of party (persons, families, groups), social tenure relationships (formal, informal, occupancy, usufruct, tenancy, leasehold, freehold, indigenous, customary or conflict, etc.) and spatial units (land, property, structures etc.) (UN-Habitat, 2014).

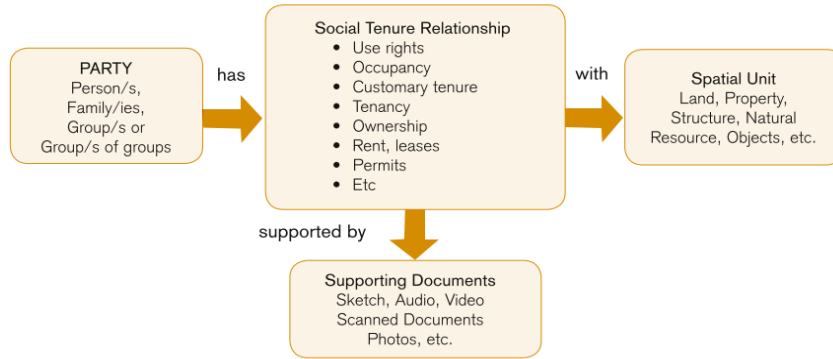


Figure 11: Core model of STDM

Source: (UN-Habitat, 2014)

Applications of STDM:

STDM was successfully used in Mbale of Uganda for upgrading the slums and informal settlements, land adjudication and to incorporate the data in land administration and information systems. Community-driven enumeration process was used to collect data on households by the slum dwellers themselves. The process empowered the slum communities and facilitated the local authorities in inclusive planning, access to basic services and tenure security improvement in an effective and cost-efficient way (Antonio, 2013).

STDM was proposed in Mozambique Participatory Fit-For-Purpose Massive Land Registration where nationwide coverage of land registration is being done independent of the level of formality, legality and technical accuracy (Balas et al., 2017). Similarly, STDM has been proposed by the government of Haiti for the post-crisis environment as an alternative land administration system. It would help in land use mapping and provision of tenure security to the Haitians in a fast and effective way. Also, the Colombian government piloted STDM implementation for settlement improvement and to “improve the security of tenure for households in a community” (UN-Habitat & GLTN, 2013).

3.6.3.2. Participatory enumeration in Philippines, Somalia and Mashimoni of Kenya

Participatory enumeration serves as an important base to gather socio-economic data for the post-disaster needs assessment and involves participatory approach (Unger et al., 2016). In Magallanes of the Philippines, participatory enumeration was used to gather data of informal settlements to produce reliable statistics for the relocation of the community members in a new area with all the basic facilities (UN-Habitat & GLTN, 2010). Also, the implementation of participatory enumeration in Mashimoni of Kenya allowed collecting census data on slum community by involving the slums themselves in the fieldwork.

3.6.3.3. FFP mapping in Rwanda

Rwanda serves as a good example of the application of FFP land administration using participatory mapping where locally trained para-surveyors delineated the parcel boundaries on an aerial imagery. This process helped to map the whole country only in four years in a very cost-efficient and quick manner. This contributed to the increased economic investment, fewer conflicts, land tenure security and overall

development of Rwanda. An incremental approach is now being used to upgrade the accuracy as per the requirement by the Rwandan land authority (Enemark, Bell, et al., 2014).

3.6.3.4. Flexible Land Tenure (FLT) Act, 2012 in Namibia

Flexible Land Tenure Act was established in 2012 in Namibia with a purpose to provide land tenure security to informal land tenure holders and create an alternative form of land titles that are simpler and cheaper to administer compared to existing forms of land titles. FLT has three forms of tenure: ‘starter’ title, ‘and hold’ title and ‘freehold’ title. ‘Starter’ title can be transferred and protects against eviction but cannot be used as collateral, whereas ‘landholder’ title can be registered, transferred and used as collateral. The registration system is such that both titles can be upgraded to freehold title eventually. The focus of FLT is social and economic empowerment (Christensen, 2015; Government of Namibia, 2012).

3.6.3.5. Community Driven Adjudication (CDA) in Indonesia

In CDA, the boundary marks of parcels are identified and delineated on the photographs. The ownership then is agreed upon by the community, which proves as a firm basis for future land titling. This approach was used successfully in Aceh of Indonesia after the 2004 Asian Tsunami. Most of the land disputes were settled at the village level, avoiding the top-down approach of addressing problems through bureaucratic procedures (Mitchell & Garibay, 2011). However, the CDA approach may be subject to delay and prone to inaccuracy when it is required to cross-check with the pre-disaster land records. Further, it needs to be protected in laws to provide legal recognition and avoid institutional delays. Overall, the CDA process quickened the post-disaster reconstruction and generated land tenure information, thus, making easier for the housing and grant provider (Fitzpatrick, 2008a).

3.7. Capacity development for land administration

Capacity development is defined as “The processes whereby people, organizations, and society as a whole unleash, strengthen, create, adapt and maintain capacity over time” (OECD-DAC, 2006). In many developing and transition countries, capacity development occurs as the main obstacle in sustaining the organization and often becomes the weakest part. Capacity development serves as an important tool in addressing the information gaps and reinforcing the existing capacity. Capacity development can be done at organizational level (government including private stakeholders), societal level (advocacy, awareness and dissemination) an individual level (human resource capacities including technical and operational aspects) (Enemark et al., 2016). Proper assessment of capacities is essential to build a strong foundation for sustaining land administration. Firstly, legal framework should be designed in a way that it addresses effectively the land rights of the people and provide enough space for public consultation and participation. Secondly, land administration services should be decentralized to promote public accessibility and affordability to local people. This can be facilitated by ICT that helps in the central processing of information and local management. A sound ICT policy needs to be in effect to build ICT infrastructure, which in turn is based on analyzing information flow and choice of hardware and software. Human Resource Development is crucial to building capacity of human resources in organization to perform tasks efficiently and effectively (Enemark & van der Molen, 2008).

3.8. Summary

This chapter presented general concepts about the poor and vulnerable, post-disaster land issues and role of land tenure security in the context of disaster. Similarly, it gave a detailed description of the legal, technical and institutional frameworks of the land administration as well as land governance in Nepal. The chapter highlighted basic concepts of continuum of land rights, FFP land administration and its diverse applications across the globe. The chapter ended with the discussion of the importance of capacity building in land administration.

4. LAND ADMINISTRATION IN POST-DISASTER NEPAL IN REGARD TO THE POOR AND VULNERABLE

4.1. Introduction

This chapter presents results of the fieldwork according to the methodology used during data collection period and lists the key themes extracted from the interview transcripts. The results are derived from interviews and data collection with the key informants, local residents and administrators in the case study areas. Interview results are validated from the respective research participants and their feedback is included, which increases the trustworthiness of the research. The chapter identifies land tenure issues faced by the poor and vulnerable groups after the earthquake 2015 in Nepal, land tenure types existing in Nepal as well as land rights that remain unaddressed in the current land administration system. It also lists out the legal, technical and institutional issues in the land administration systems of Nepal. Overall, this chapter addresses the research objectives and sub-objectives as presented in the research matrix in sub-chapter 2.11 of this MSc thesis.

4.2. Post-disaster land issues after the earthquake 2015

Based on the primary and secondary data collected during the fieldwork, the following land issues are more prominent in case of Nepal after the earthquake 2015.

4.2.1. Destruction and displacement

The earthquake 2015 displaced more than 650000 families, destroyed over 850000 houses and affected more than 8 million people across 31 districts of Nepal (Government of Nepal & DPNep, 2015; OXFAM, CSRC, HCGN, & N-CDMC, 2016). Reports from NRA show that fourteen districts (Sindhupalchowk, Dolakha, Gorkha, Dhading, Kathmandu, Bhaktapur, Lalitpur, Nuwakot, Okhaldhunga, Rameshhap, Rasuwa, Sindhuli, Kavre, and Makwanpur) suffered extreme destruction. Among the victims of these fourteen districts, seventeen percent of them are Dalits (OXFAM et al., 2016). Similarly, more than two-thirds of the affected victims all over the country belong to the indigenous (*janjati*) groups (Nougaret & Danuwar, 2016). Before the earthquake, a quarter of Nepal's population lacked access to land, the majority of whom were the poor and vulnerable groups like Dalits, *Janajati* and women. After the earthquake, this figure increased (OXFAM et al., 2016).

In the fourteen most affected districts, a quarter of damaged houses belong to female-headed households, the lowest number being in Nuwakot and Kavre districts and the highest being in Gorkha (National Planning Commission, 2015). The government has recently adopted Joint Land Ownership Certificate (JLOC) policy in the reconstruction process. According to the reconstruction policy "*the newly purchased parcel in disaster-hit zones must be registered in name of both spouses*" (translated from Nepali). As stated by CSRC and OXFAM, the poor and vulnerable are also deprived in recovery and reconstruction process as a result of social apartheid. So, they are at high priority in the reconstruction processes. The following map shows the districts where there are major problems regarding the poor and vulnerable groups:

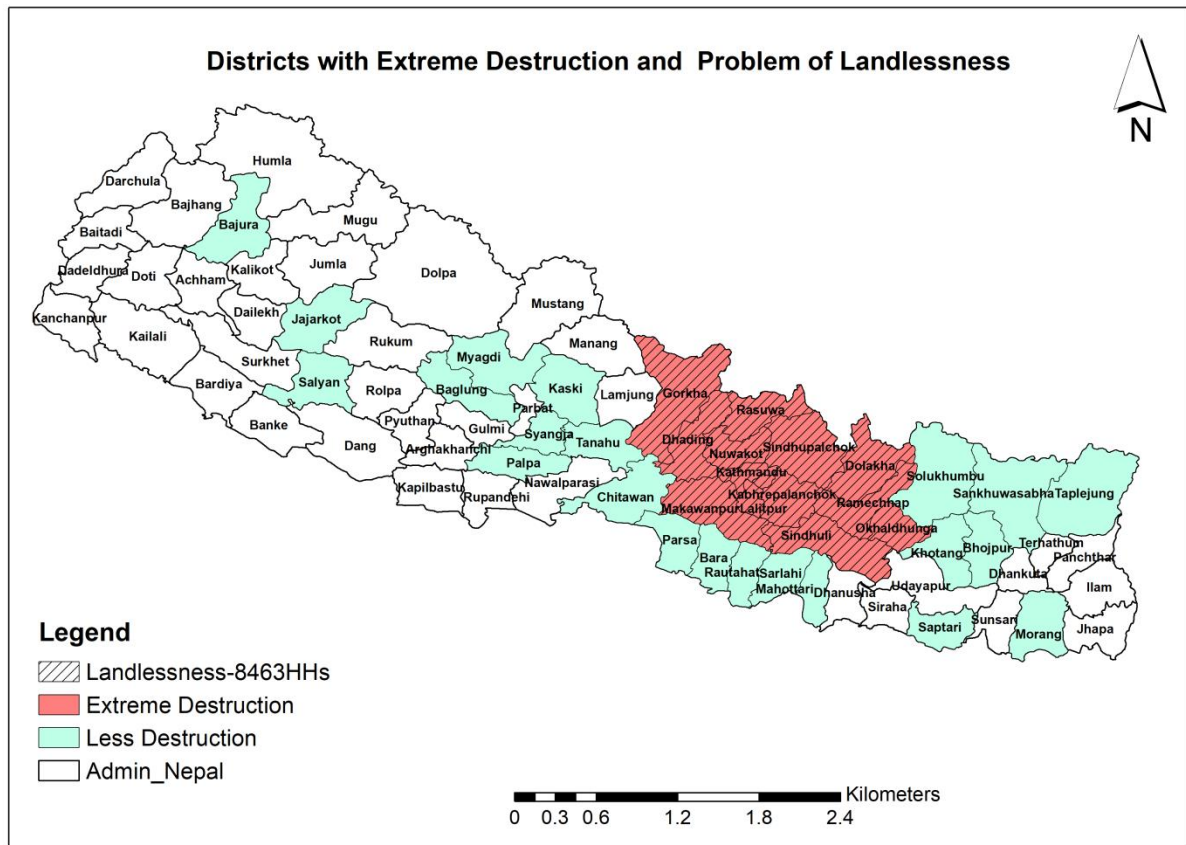


Figure 12: Map showing districts with extreme destruction and landlessness

Source: (Report from NRA, 2017)

4.2.2. Issues of relocation

Interview with NRA details that over 136 settlements are identified to be relocated to safe zones. Those settlements, which are unsafe, are relocated and those, which are moderately safe, are provided engineering support for durability of housing and constructions. Families who do not want to be relocated have been given separate grants to purchase land somewhere else and resettle. Additionally, the government has proposed an integrated settlement approach for relocation where, at least ten families can be relocated. In the initial phase, the settlements are relocated in state land or forest land. Relocation in forest or public land demands that the original parcel of the victims will be given to the government through land swapping. However, there are complicated bureaucratic issues with other ministries during land swapping, and the government is trying to purchase private land for relocation, which is time consuming and expensive. A major problem faced during relocation was the relocation of Dalit community since other castes did not accept them to live nearby. Moreover, the interview reported that the poor and vulnerable groups are unwilling to accept the government options in a fear that they would lose the original land in the process of relocation. Lumanti Nepal added that the poor and vulnerable groups of Kathmandu district are demanding guarantee of proper housing and land tenure security before relocation. Lumanti Nepal also remarked that the government had forcefully evicted the informal settlements in Thapathali areas of Kathmandu in the name of relocation but nobody was resettled. Lack of trust between the government plan and the informal settlements has created problems in relocation.

4.2.3. Land disputes

The court of Nepal has the highest number of cases regarding land conflicts than any other cases in Nepal. One record from the 2015/16 yearly report of the Supreme Court of Nepal shows that 25% of all the registered cases in the courts of Nepal account to land disputes. Similarly, more than fifty percent of the registered land dispute cases of the year 2015/16 are unsettled in the courts of Nepal (Supreme Court Nepal, 2017). The disputes are mainly from landlord-tenant cases, women's rights on land resources, displacements, land grabbing and issues of boundary adjudication. Normally, the court takes one-two year for simple cases resolution whereas complicated ones take years and generations. Due to the inefficient court resolution and weak land registration system, land dispute cases are increasing day by day (CSRC, 2012). OXFAM et al. (2016) report that more than 120000 earthquake-affected people are at risk of eviction because of complex land problems, which further creates land disputes and affects reconstruction in the long run.

According to the reconstruction policy, an alternative land disputes resolution mechanism has been initiated in every earthquake-affected district to adjudicate the boundaries of the parcels with the help of local community mediated by the local authority. The community helps to adjudicate land parcels and prepares a recommendation report further approved by the district level committee.

4.2.4. Land records and documents after the disaster

NRA emphasized land records as an important basis for getting reconstruction grants since the government had made provision for showing land ownership certificate to get grants. Those with land records availed the opportunity of selling their land to the government during land swapping. The existing land records made easy for the government to evaluate their land parcels based on land area, value, use and tenure situation. But loss of land records like land titles, contracts and agreement letters caused difficulties to landowners. It was estimated that 90% of earthquake-affected households had some sort of land records and documents (Nougaret & Danuwar, 2016). Secondary data from CSRC shows that estimated two-thirds of tenants lack tenancy documents. The tenancy, both urban and rural, is generally based on oral agreements. The unregistered tenants faced sufferings after the disaster as they could not claim for the tenancy against the landlord in absence of the land documents.

Interview with one respondent from NRA reported that the poor and vulnerable groups, due to absence of land certificate, were excluded from the reconstruction facilities by the state, but later the policy was amended, which provided grants to all victims regardless of their tenure status. According to the policy, *“For those victims, who have no land records at all but residing on the land since years, based on the recommendation letter of local level authority with two witnesses signed on the recommendation letter as the adjacent owners of the related parcel, will get the reconstruction grants to resettle on the parcel”* (translated from Nepali).

4.3. Land tenure types in Nepal

This sub-chapter presents different land tenure types existing in the Nepal besides formal land tenure as described in chapter 3. The data presented here were collected during fieldwork in the form of interview and secondary reports.

4.3.1. Informal land tenure

Respondents from MoLRM stated that informal land tenure is identified or mostly found in informal settlements and slums. It is not recognized legally by the state but possesses social recognition. People settling in informal settlements are generally Dalits and indigenous groups in Nepal, who are socially and economically disadvantaged. Commission for Planned Settlements (*Byasthit Basobas Aayog*) 2016/17 (MoLRM, n.d.) categorizes informal land tenure as land occupied by (translated from Nepali):

- 1) **Landless** (*Bhumihin*): People who have no land at all and are living in the government or public or forest land and depend on agriculture labor for a livelihood. A quarter of Nepal's population was landless before the earthquake which may increase after the earthquake (OXFAM et al., 2016).
- 2) **Slum settlement** (*slum basti*) or *Sukumbasi*: People who have settled on the government or public land in metropolitan, sub-metropolitan and municipal areas and rely on some small wage-earning for livelihood. Generally, they are the migrants from the rural areas of Nepal. A UN-Habitat (2010) report suggests that more than 20000 people live in the informal settlements in Kathmandu city and seven percent of the total urban population as informal settlers in Nepal.
- 3) **Encroached Right of Way (RoW)**: People who have settled along the roads, highways or road junctions by building small houses hut or make-shift houses. The land encroached is the rightful area of the road, also called Right of Way. They can be seen easily along the highways connecting Kathmandu to other districts. This kind of the land right has neither social nor legal acceptance.
- 4) **Encroachment tenure**: This is a new kind of informality seen as a result of encroaching public or government land or private land. This kind of tenure has neither social nor legal acceptance and are fully illegal. The land illegally possessed from landlords in the inner *Terai* (also called *Terai-Madhes*) area, land of government institutions, industries which are of high importance are examples of such tenure. People occupying this kind of land are reluctant to leave the land, which creates conflicts between authority and occupiers (UN-Habitat Nepal, 2016). There is no exact record of this kind of tenure.

FWLD (2015) shows 25% of the population in Nepal lack citizenship in the year 2017. Citizenship is an important document to acquire land titles in Nepal as well as to get reconstruction grants in the post-disaster phase. The poor and vulnerable groups lack land ownership documents, while many of them lack both land ownership and citizenship documents. So it was difficult for them to prove their identity and land ownership, which deprived them of reconstruction grants (Nougaret & Danuwar, 2016). Reports of High Level Land Reform Commission 2008 indicate that Dalit covers one-fifth of the total population but own only one percent of land in Nepal (refer to figure 14) whereas indigenous group represents one-third of the total population but own less than ten percent of land (MoLRM, 2008). During data collection in Bansighat settlement and meeting with some families suffered from the earthquake, they said that “*we have been living here for more than 25 years, time and again the government has just given us hope to resettle with a land certificate, but nothing has been achieved till now. The government evicts when they need land. After the disaster, we waited for reconstruction grants but due to the provision of showing land certificates, we were denied, finally, we managed in a small but.*”

4.3.2. Non-formal land tenure

According to one interviewee from MoLRM, non-formal land tenure possesses both social and legal recognition but lacks official registration. Non-formal land tenure includes those land parcels, which were left to be registered in the initial period of cadastral mapping and surveying in the form of “*Gaun block and Sahari block*”. *Gaun blocks*, also called village blocks, are areas of dense settlements, consisting of a parcel owned by several landowners and are mapped as a single block parcel with unique parcel number. *Sahari block* is found in cities and municipalities. Non-formal tenure also includes *Swabasi Jagga*- the land which has been occupied by people long ago since the time of the initial cadastral survey in 1963 (UN-Habitat Nepal, 2016). Furthermore, this kind of tenure accounts six percent of the total land area of Nepal. The process of formalizing of non-formal tenure started in the fiscal year 2005/2006, and still, more than three thousand hectares of land parcels is remaining to be registered. This type of tenure is found in fourteen districts (Sarlahi, Rupandehi, Saptari, Udaypur, Dhanusha, Mahottari, Kapilbastu, Siraha, Sindhuli, Illam,

Tanahun, Lalitpur, Nawalparasi and Chitwan) of Nepal (figure 14). Every year, the government allocates budget and manpower for updating this tenure, but the work goes slow and inefficient because of a lot of boundary disputes. The mapping is generally done using plain table survey technique, which is slow and expensive. Khokana settlement is an example in Lalitpur district where there is an issue of non-formal tenure affected by the earthquake.

Respondents from Khokana argued that before the disaster, there were no land tenure issues regarding non-formal tenure as it had legal recognition and people could invest, sell or buy land. Land transactions (generally informal) are done between people based on their trust and social acceptance. During the initial cadastral survey in 1963, landowners were given a sort of claim documents, which now serve as a proof during transactions. But after the disaster, the government made provisions to show land title, which posed challenges to the victims in receiving grants. During data collection in Khokana, it was found that local residents there were very concerned to survey their land parcels and get a land certificate in an efficient method using aerial imagery. According to them, *“a participatory approach of community-driven adjudication will be followed, funding would be done by NRA and mapping by Survey Department.”* To facilitate the task, the office of NRA has been established in Khokana. The Khokana residents are trying to avail this post-disaster reconstruction opportunity by getting land titles and tenure security in full phase, which would enable them to enter in the formal land market and collateral in future. However, the task has not yet started and almost three years have passed since the earthquake. The following map shows the distribution of non-formal tenure in Nepal.

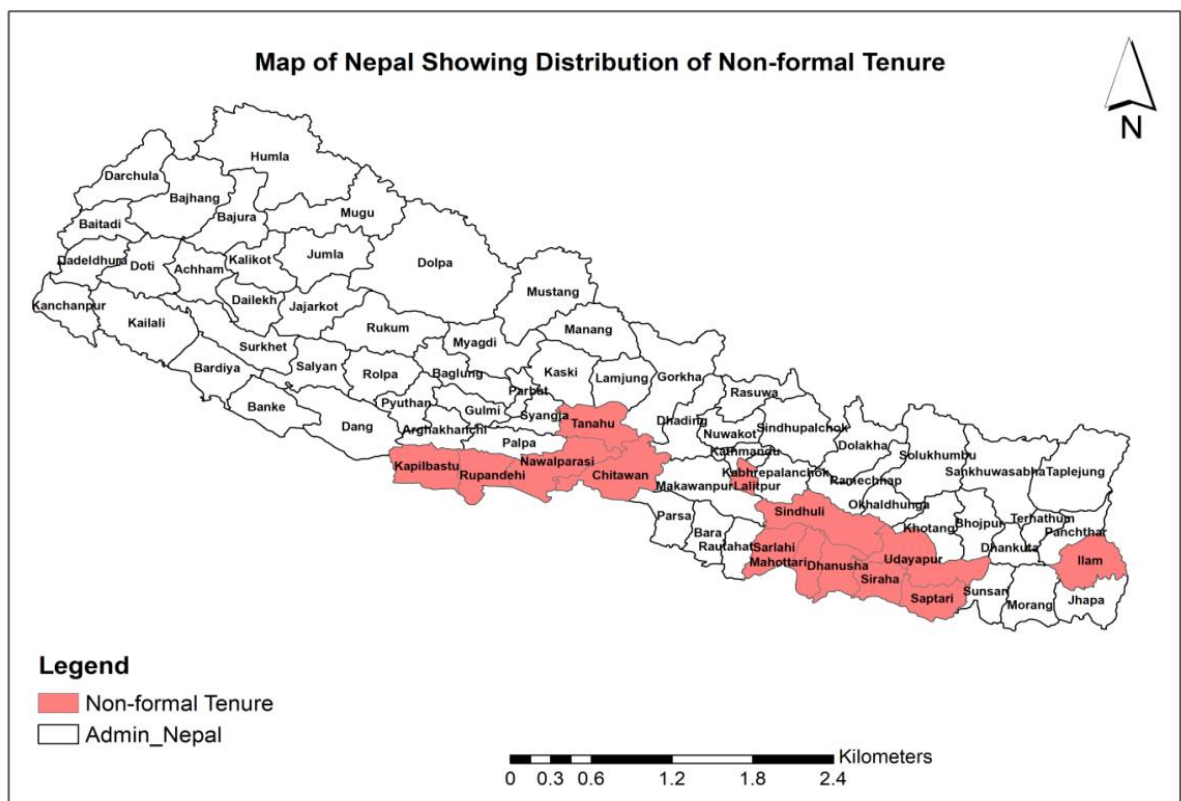


Figure 13: Districts showing the presence of non-formal tenure in Nepal.

Source: (Report from MoLRM, 2017)

4.3.3. Women land rights in Nepal

The woman is one of the most vulnerable entities in Nepalese society. According to the census 2011, there are 796422 more females in Nepal than males but only around one-fifth of households in Nepal had a female owner (CBS Nepal, 2011). The gender gap remains wide, as nearly 87 percent of eligible men have acquired citizenship certificates, compared to approximately 74 percent of eligible women. Similarly, the percentage of people possessing land is equivalent to zero in absence of citizenship title. The acquisition of land titles and citizenship certificates are complementary to one another. “Without a citizenship certificate, people cannot acquire official land or property title, but without official land or property title, people often cannot acquire a citizenship certificate” (FWLD, 2014).

Although, the constitution of Nepal 2015 grants equal rights to female, the civil code of Nepal (*Muluki Ain*) limits land to the unmarried females, with the assumption that females can get land inheritance rights only from their husband property (Government of Nepal, 1963). On the other hand, CSRC (2013) states that “The law does not recognize a transaction carried out by a woman without her husband’s consent where the husband’s property is concerned”. However, to increase land ownership in the name of a female, the government is providing twenty-five percent tax discounts on the registration of land in the name of a female. This has eventually increased women land ownership from 14% in 2001 to around 19% in 2011 (CSRC, 2013; OXFAM et al., 2016).

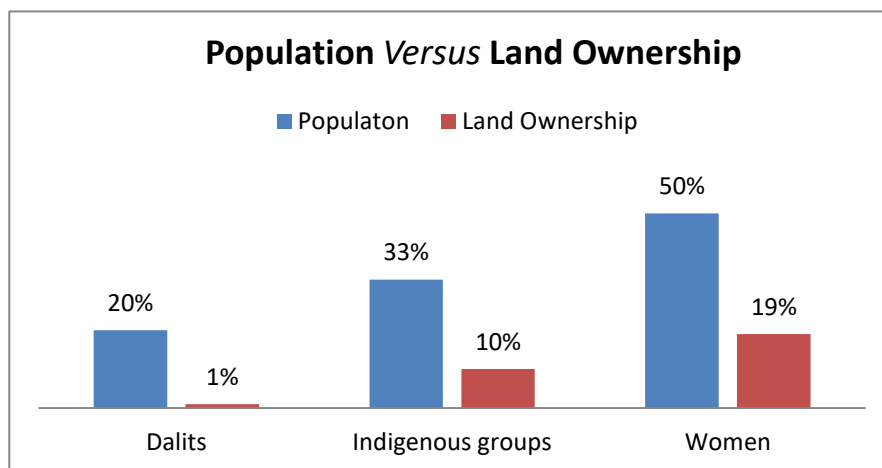


Figure 14: Population of vulnerable groups with corresponding land holding in Nepal

Source: (CBS Nepal, 2011; CSRC, 2013; MoLRM, 2008)

4.3.4. Status of public land in Nepal

An interview with one key informant of MoLRM highlights that in case of private land and government land, there is a complete record in the register but in case of public land, records are incomplete. Since public land is difficult to identify in field, and also it has been encroached by people, there has been a challenge to manage public land. Different ministries like MoLRM, Ministry of Forest and Soil Conservation, Ministry of road and Ministry of Social Welfare manage public land in Nepal. Lack of consistent records, institutional inefficiency, and sectorial silos have created a gap in the documentation of public land.

4.4. Human rights to land and property in post-disaster Nepal

Respondents from UN-Habitat and MoLRM remarked that the Constitution of Nepal 2015 has guaranteed land for a secure living to all the citizens of Nepal, (be it Dalits, tillers, tenants, indigenous community). Because of the changing situation of the government, it has been difficult to formulate

policy, rules and regulations as well as to implement them. There has been a provision to provide minimum land to all landless people to enjoy their living. They also added that the present constitution is very optimistic and land rights are well articulated but it is quite difficult to implement all the provisions of the current system. Respondent from MoLRM added that various commissions were established in the past to tackle the issues of informal land tenure like Landless Problem Solving Commission, The 2012 National Shelter Policy, High Level Land Reform Commission 2008 and High Level Scientific Land Reform Commission but due to lack of political commitment and stable government, there was no effective implementation. Recently, the government has established another commission called Commission for Planned Settlements 2016/17, which is hoped to resettle the landless, *sukumbasi* and manage the haphazard settlements by providing land and shelter right.

An interviewee from HURADEC, (*an organization advocating for land rights for the poor and vulnerable in Dolakha, Sindhuli and Ramechhap districts*), argued that land right is vital for survival and future resilience He further added that people never try to leave their land even though the land is under hazard-prone zones as observed in case of Dolakha.

4.5. Legal, technical and institutional issues in the current land administration with reference to the poor and vulnerable in Nepal

This sub-chapter presents the data collected and opinions of several key respondents regarding the legal, technical and institutional issues in current land administration in response to the poor and vulnerable groups in Nepal.

4.5.1. Legal and regulatory issues in the current land administration of Nepal

During the interview with Kamal Ghimire of NRA, it was observed that initially the informal and non-formal land tenure holders were excluded in the grant distribution process. The reconstruction policy favored only those landowners who possessed land certificate as well as citizenship. Since a greater number of the poor and vulnerable groups did not possess land certificates, the reconstruction policy was unsuccessful and against human right to land and shelter. Taking into account the prevalent land tenure issues, the policy was modified recently and context-based approaches were proposed to include all the tenure types, the poor and vulnerable groups. Concerning FFP approach, the respondent added that literally it was agreed to mention FFP in the policy but the executive officers at the ministry level were not convinced, and there are bureaucratic barriers as well, which would take time. He also remarked that no policy or tools can be implemented which is not supported by laws and regulations, so it is required to follow the existing system (the conventional approach of surveying). Though FFP approach is not cited in NRA policy, it was found interestingly that the new policy is providing grants to all victims irrespective of different land tenure forms, be it formal or informal. The policy also reveals the provision of joint land ownership, where the registration of newly purchased parcels in the disaster-affected areas is mandatory in the name of husband and wife.

However, during data collection, a respondent from CSRC argued that reconstruction works and policy are not in consistent with the Land Use Policy of Nepal, insisting that the present NRA reconstruction policy is not clear in practice and there is no public awareness about the policy. Likewise, the present reconstruction policy is a short-sighted approach, which only provides grants but does not guarantee land tenure security to the poor and vulnerable.

According to one participant from OXFAM Nepal, the existing land laws are biased where only men can register land in their name. Furthermore, there is nothing mentioned about community land right in current land administration system. OXFAM report states that “community land is the common land used by the community regardless of ownership like playgrounds or grazing lands”. There are a lot of

community land in Nepal (many of which has been captured by elite group), which shelter several people around. Well utilization of this land can address the challenges faced due to landlessness and informality in Nepal. In the reconstruction process, the government is relocating in its own way, without taking the prior consent and participation of the community. The community-led management of land could address the problems arising due to tenure security. Respondents from Lumanti Nepal and HURADEC pointed out the lack of concrete regulations concerning the relocation and resettlement of people. The current regulation does not see land as a fundamental human right. It has been unable to embrace the land rights of the vulnerable groups. They argued that STDM can be used to record land rights of the poor and vulnerable as well as build community participation at the local and national level stating that “STDM is a human right approach of land administration”. A respondent from Lumanti Nepal added that the government was neglecting the issues of urban informal settlements of Kathmandu district. She indicated the past cases of forceful eviction of settlements in Thapathali areas of Kathmandu district in the name of relocation.

In response to the legal and regulatory framework, MoLRM is flexible in changing rules and regulations to speed up the reconstruction process. For example, the land claim period over the registration of quake-affected parcel against the claim of others was reduced from 35 days to 15 days for the earthquake victims. Respondents from UN-Habitat and Survey Department opined the incompleteness in current land laws regarding informal tenure, legitimate and indigenous rights and emphasized the concept of STDM in recording these kinds of land rights. Participants from Khokana settlement were of the opinions that the current land laws and regulations are complicated and ineligible to illiterate people.

4.5.2. Technical issues in the current land administration of Nepal

Regarding FFP land administration, one respondent from MoLRM stated as “FFP is just the application of satellite imagery to trace the parcels and create land certificates upon the agreement of the landholders”. Since more than 90% of land parcels have been mapped and registered, there is no use of aerial imagery in Nepal. It may create inconsistency in the accuracy of the parcels as well as between land administration systems. FFP can only be used in the areas where initial mapping and surveying has not been done like in African countries. Similarly, a respondent from NRA argued that satellite imagery may bring panic in the surveyors and may lead to conflicts and court cases. Accuracy cannot be sacrificed in terms of time and cost. Similarly, DSO Dolakha also emphasized accuracy as an important element in surveying and mapping. To the contrary, CSRC stressed the application of aerial imagery as a good alternative against conventional surveying. In support of this, Lumanti Nepal commented that the current land administration lacks Participatory Rural Appraisal (PRA) tools. Tools like social mapping, Google images, and public participation can provide alternative ways of capturing data of slum and informal settlements in a very short and reliable manner. PRA tools also support decisions making and mitigate land conflicts.

Raja Ram Chhatkuli of UN-Habitat mentioned that the present mapping and surveying technology is age-old, follows rigid standards and is resistant to changing technology when dealing with time and cost and an emergency situation like post-conflict and post-disaster situation. The traditional surveyors who work in the field are unwilling to adapt to change. This traditional mindset prevents from using new technology and tools in land administration sectors. For example, in the post-conflict *Achham* district of Nepal, applying aerial imagery was proposed to regenerate maps and land certificates of people and provide them with titles for land tenure security in a fast and cost-efficient pace. Owing to rigid technical requirements and resistance from traditional surveyors community, use of imagery was aborted and traditional field survey technique like plane table survey was continued. Ten years passed and the project has still not completed. On the other hand, the traditional, especially the junior level surveyors community continue to speculate that they are going to lose their job and professional supremacy as they have limited knowledge

and experience and are reluctant to new tools and techniques. The population of such resistance group is more which acts as a barrier in promoting innovative tools and technology in the system.

With reference to a technical framework, Survey Department opined the application of open source tools arguing that the present tools and technology are costly and cannot be continued in future. Current tools cannot record the social legitimacy of land rights and is binding with the geometric accuracy. Bishnu Khadka of HURADEC experienced that victims after the earthquake demanded immediate housing and land security rather than accurate surveying and adjudication of parcels.

4.5.3. Institutional issues in the current land administration of Nepal

From the interview with NRA, it was discovered that reconstruction policy is standalone, ad-hoc and apply only to earthquake-affected zones. It does not comply with the existing rules and regulations of land administration system.

Ganesh Bhatta from Survey Department highlighted out the prevalent sectorial silos between different land institutions. Land institutions like DSOs, DLROs, and LROs are running in their own way without clear cooperation. One door policy of land administration has been in debate since 2000, yet the government has not been able to provide clear policy. Unclear procedures prevent public accessibility in these organizations and create communication barriers between public and land agencies. The system lacks transparency and has a centralised level of land administration. It is hoped that federal structure in Nepal, that is, the formation of three-tier land administration (local, state and central structure) would bring land administration closer to people and society and promote decentralization. Furthermore, the accuracy of data varies between the mapping done by Department of Land Information and Archive (DoLIA) and Survey Department. There has been use of two different software for the same work, i.e., Parcel Editor by Survey Department and Spatial Analysis Extension by DoLIA. This creates inconsistency between the accuracy and position of parcels. Cadastral maps of Nepal are the product of plain table survey done in 1963 and are still in use in the DSOs of Nepal.

CSRC and HURADEC reported lack of interaction between land institutions and CSOs. Land administration in Nepal lacks Public-Private-Partnership (PPP) approach, and there is no involvement of the community in decisions making related to land cases. An interviewee from Lumanti Nepal pointed out bad governance in land administration. There was no prior notice and property compensation for the *Thapathali* informal settlers after eviction. A respondent from MoLRM stated that every year different land reform commissions are formed to address the problems of *Sukumabasi*. Each time new regulations different from the previous ones are formulated without continuing the previous works. There is lack of consistency in the institutions made by the government.

4.6. Summary

This chapter presented different post-disaster land issues faced by the poor and vulnerable groups of Nepal as the destruction of houses; displacement of population; relocation issues; issues of land disputes; and land records. The recovery plans implemented to resettle the poor and vulnerable are inclusion of informal and non-formal land tenure holders in reconstruction process, adoption of JLOC policy and adjudication of land by CDA approach. The chapter identified additional land tenure types like informal and non-formal land tenure beyond formal tenure existing in Nepal. The chapter shows that women hold 19% of landownership, Dalits as 1% and indigenous less than 10% of total land in Nepal. The chapter also mentioned that the Constitution of Nepal 2015 has guaranteed land rights to vulnerable groups of Nepal but there is lack of implementation mechanism. Finally, this chapter highlighted the legal, technical and institutional issues of the land administration in Nepal.

5. DISCUSSION OF LAND ADMINISTRATION IN NEPAL IN POST-DISASTER CONTEXT

5.1. Introduction

This chapter discusses the findings and key themes presented in chapter 4 in relation to sub-objectives 1 and 2 against literature review. The chapter starts with the discussion of post-disaster land issues and recovery plans applied in support of poor and vulnerable in Nepal. Next, it discusses the land tenure types existing in Nepal, a gap in the documentation of land rights and its impacts on the poor and vulnerable in the context of the UDHR as well as in disaster.

5.2. Post-disaster land issues

The literature on post-disaster land issues refers land issues mostly to the destruction of houses and displacement of the population. Land disputes, issues of landlessness and relocation create additional challenges during reconstruction and recovery after the disaster. Results from Nepal show that the most serious post-disaster land issues faced after 2015 earthquake in Nepal are related to destruction of houses; displacement of population and issues of relocation. Besides that, loss of land records and land disputes are triggering factors which delayed reconstruction process.

5.2.1. Destruction and displacement

The 2005 earthquake in Pakistan destroyed 600000 houses resulting in 3.5 million people as homeless. Since the earthquake struck in mountainous areas, there was difficulty providing relief to the victims (Fitzpatrick, 2008b). Similarly, the Haiti earthquake in 2010 destroyed countless houses displacing more than 800000 people (Mitchell et al., 2017). Results show that the 2015 earthquake in Nepal destroyed over 850000 houses and displaced more than 650000 families. Compared to Haiti, the number of displaced population is lower while the destruction of houses is more than Pakistan in Nepal.

5.2.2. Relocation issues

According to literature review, relocation causes movement of people and communities from one place to another place and may create communal disharmony. The Dalit community (also known as untouchables) in India feared of being dislocated due to the intrusion of fishermen community after Asian Tsunami 2005. In Sri Lanka, the relocation of coastal communities stopped due to social disharmony (see section 3.3).

As mentioned in section 4.2.2, the relocation of the poor and vulnerable like Dalits in Nepal created challenges, too. They are also treated as untouchables in Nepal and are not allowed to live nearby other castes during relocation. This affected the reconstruction process. To facilitate the relocation process, the government has planned an integrated settlement approach where at least ten families can be settled via land swapping scheme. In contrast, the poor and vulnerable groups fear of losing the original land, and therefore, claim land tenure security before relocation, which created additional challenges to the authority. Moreover, interview results from OXFAM show that relocation is done without prior consent and active participation of people. This may create a communication gap between the government and vulnerable groups leading to a delay in the recovery of victims.

5.2.3. Role of land records in reconstruction

Section 3.3 identifies land records as an important basis for the government and humanitarian agencies while providing relief and housing grants to the victims. Loss or absence of records may create land

conflicts and obstruct the reconstruction process. Rory Mungoven, senior human rights advisor, argues that the restoration of land records should be dealt as the first and foremost step of reconstruction (Brown et al., 2006). IFRC (2014) adds that without documents, renters may face challenges reclaiming advance payments in the event of a disaster.

With regard to the results from Nepal, loss of land records posed auxiliary problems during relocation and land swapping though it was found that more than 90% of the victims possessed some kinds of land records (see section 4.2.4). Absence of records delayed victims from getting grants and housing assistance, while those who possessed land records were benefitted from reconstruction grants, proper land valuation, and land swapping scheme. Similarly, as both urban and rural tenants in Nepal are based on oral agreements, disaster made easy for the land lords to evict the tenants in the absence of land documents. Results show that with the amendment of reconstruction policy, each and every victim was given reconstruction grants regardless of the land records and documents.

5.2.4. Land disputes and CDA approach

Mitchell & Garibay (2011) mentions land ownership disputes as one of the triggering factors to land disputes and elite capture delay in intervention of which may result in an opportunistic land grab. This was evident in Thailand and Sri Lanka where people were evicted immediately after provision of housing assistance. Similarly, lack of community mediation and delay in court decisions aggravated land disputes in Pakistan, thus, affecting reconstruction as stated in section 3.3. On the other hand, the CDA approach in Indonesia quickened the post-disaster reconstruction of Aceh by facilitating settlement of most of the land disputes at the local level. Though CDA approach supported the reconstruction process, it was not recognised legally by the Indonesian government (Fitzpatrick, 2008a). This is a participatory approach to land adjudication whereby community-led decision helps to minimise land disputes.

In the context of Nepal, land dispute cases form the overwhelming amount of court cases, where more than fifty percent of land-related cases remained unresolved in the year 2016/17 as noticed in section 4.2.3. There is a lack of alternative dispute resolution mechanism in the current land administration system. Likewise, there is no mediation of local community, and all the land dispute cases are subject to court decisions as seen in Pakistan. To resolve these issues, NRA adopted the CDA approach of settling land disputes through adjudication mediated by local community and authority respectively. Besides stated in the literature, the CDA approach can reduce cost and time of going to courts. Compared to Indonesia, land adjudication done by local community members in Nepal has ample social and legal recognition.

5.3. Land tenure types in Nepal compared to other countries

UN-Habitat categorizes land tenure types as formal, informal, customary, religious or non-formal. These land rights can further be arranged from formal freehold to perceived land tenure across a continuum of land rights. Every land tenure has a different set of rights, restrictions and responsibilities set by the rules and institutions of a country. For example, Islamic countries have Islamic tenure system where 'Waqf' is called religious trust land. Similarly, informal tenure in the Caribbean can be family land or customary land while pastoral land right practice is common in Georgia and Nigeria (UN-Habitat et al., 2012). As discussed in the literature, formal or statutory tenure has strong legal protection while informal tenure lacks legal recognition. Rights can be non-formal like squatting; condominium (common property) or extra-legal.

As described in sub-chapter 3.5.2 and 4.3, there are three types of land tenure in Nepal: formal, informal and non-formal. Formal land tenure is also called *Raikar*, that is, land subject to taxation by the government. It includes state land (public and government land), trust land and private land. Trust land (also called *Guthi jagga*) is exclusively used for religious and charitable works. As explained above, informal

land tenure in Nepal lacks legal recognition but possesses social acceptance. Informal land tenure in Nepal is generally possessed by Dalits and indigenous group of Nepal. It exists in the form of landless, *sukumbasi* and encroachment tenure. Encroachment tenure lacks complete social land legal recognition. In contrast to what is mentioned in literature, non-formal land tenure in Nepal possesses both social and legal recognition and is not taken in the form of squatting. It is categorised as *Gaun block and swabasi jagga* in Nepal. Non-formal land tenure can be put up as collateral or mortgaged based on social trust and acceptance. It is being formalised by the government on a regular basis (refer to section 4.3.2).

5.4. 'Security of tenure gap' and its impacts on the poor and vulnerable in the situation of disaster

Literature review on land tenure security in the situation of disaster states that poor and vulnerable are affected the most in disaster, and are more likely to be avoided in the reconstruction phase. The poor and vulnerable, especially informal settlers, possess weak land tenure, which is not recognized by the formal land administration system. Insecure land rights may lead to eviction and elite capture. McCallin & Scherer (2015) argues that many land administration systems demand land certificate to impart reconstruction grants. This was seen clearly in the Indonesian Tsunami 2005 where the RALAS authority did not recognize the poor and vulnerable groups during the reconstruction phase. This resulted in protests and demonstrations until after two years policy of free housing and land was made (Fitzpatrick, 2008a). On the other hand, during the Gujarat earthquake 2001, the government immediately provided security to land and housing together with grant assistance without imposing any grant eligibility conditions. This helped victims secure their investment and security for long (Fitzpatrick, 2008b). Clinton after the Asian Tsunami 2005 stated that land titling could be a better way of developing resilience and livelihood than anything else (Brown & Crawford, 2006). Undue delays in reconstruction create disharmony in the community and may lead to future squatting.

With regard to results in section 4.3, the poor and vulnerable groups in Nepal possess informal land tenure and lacks legal proof of land. Lack of land tenure security affected most to the Dalits, indigenous groups, and women in Nepal. Similar to RALAS authority, initially NRA in Nepal demanded land ownership to distribute reconstruction grants. But this favored only land title holders while excluding a big population of the poor and vulnerable groups. Considering the successfulness of the policy, the reconstruction policy was amended, and thereafter, the government provided resettlement options and reconstruction grants to all the victims independent of land tenure status. This was an appreciable act of the government even though it was implemented only after two years of the earthquake. Arguably, results from CSRC notes that the policy provides the only temporary solution of shelters rather than land tenure security as provided by the Gujarat government. The victims can invest on the land but this does not guarantee tenure security in future. Moreover, the policy seems to be incomplete as the condition for grant distribution depends upon the agreement of the adjacent landowners, who can be biased against Dalits due to social apartheid.

As mentioned in section 3.4, an absence of land tenure security makes women vulnerable to eviction and social disempowerment. Due to weak land tenure security, women in Pakistan faced problems of eviction and socio-cultural sanctions against men in 2005 earthquake (Mumtaz & Noshirwani, 2007). The RALAS authority in Indonesia after Tsunami 2005 implemented joint land registration to safeguard women's land rights. However, it was seen that only 5% of the land was registered in the name of spouses (Fitzpatrick, 2008a).

Concerning the results, it was found that a quarter of houses in the fourteen most affected districts in the disaster had female as a landowner. Moreover, figure 14 illustrates that gender gap in the acquisition of land and property is comparatively high in female than male. Likewise, most of the women in Nepal lack citizenship certificate, which serves as a supplementary document in receiving reconstruction grants. Like

in Pakistan, dominant social norms in Nepal restrain women land rights in the name of men. Thus, discussion above infers that women in Nepal are most likely to be excluded from the reconstruction grants and may become the victims of social sanctions when competing with the men in the absence of land ownership documents. Comparably, with a view to secure women land rights after the disaster, the government of Nepal like Indonesia established JLOC policy making the land registration mandatory in the name of spouses. This might support gender equity in the reconstruction process. Nevertheless, the realization of this policy is yet to see.

It is clear from the above discussion that if land rights of the poor and vulnerable were recognized and documented by the state beforehand, there would not have been so many land issues regarding the poor and vulnerable after disaster. This is because of the multiple benefits of having secure land rights, from resilience to disaster to secure investment.

5.5. 'Security of tenure gap' and its impacts on the poor and vulnerable in the context of UDHR

United Nations (1948) places land as a fundamental human right stating that land right is indispensable and no one shall be arbitrarily deprived of land and property. Theory on land and human right elucidates the very importance of land rights and argues that land administration systems should address the issues of informal land tenure, customary land, landless, women land rights and other socially legitimate land rights with high priority. van der Molen (2002) recognized lack of appropriate land policies and weak implementation of laws as prime hurdles in the land administration of developing countries that prevent addressing of these land rights.

Findings from Nepal identify that land as a fundamental human right has been clearly defined in the Constitution of Nepal 2015 (Articles 25, 37 and 40). Rights related to property; prohibition against eviction; adequate housing and rights of Dalit are enshrined in laws with priority (section 3.5). Nonetheless, there exist various land tenures in Nepal like informal land tenure, women land rights, indigenous land rights and non-formal tenure, which have not been encompassed by the land administration systems. The land administration of Nepal lacks proper rules and regulations to address these land rights. Moreover, there is an absence of appropriate data regarding informal settlements. The increasing trend of informal settlements, issues of landlessness after the disaster and the gap in the land possession of the poor and vulnerable groups corresponding to their population indicate that land right has not been paid adequate attention by the government. The consequence of this was seen after the disaster, which affected mostly to the vulnerable groups.

United Nations- International Covenant on Economic, Social, and Cultural Rights requires state parties to ensure legal security of tenure to all persons by all means to guarantee legal protection against forced eviction and other threats. Similarly, UDHR notes that eviction must not be done except when considered to be justified by UDHR laws, and the state should provide adequate compensation for any property without rendering the individual landless. To the contrary, results from sub-chapter 3.5.3 illustrate different cases of human rights violation where the landless and *sukumbasi* were brutally evicted by the government in Udayapur, Chitawan, Nawalparasi and Bardiya districts including Thapathali areas in Kathmandu without giving any shelter and compensation. To address the issues of landless and *sukumbasi*, several land reform commissions like Landless Peoples' Problems Solving Commission 1995, High Level Land Reform Commission 2008, High Level Scientific Land Reform Commission 2010 and National Shelter Policy 2012 were established. Due to lack of implementation mechanism and political commitment, the commissions failed to work. In order to realize land as a fundamental right, the state as well as the land administration systems should incorporate all forms of land rights including informal, non-formal, women and indigenous land rights not only in laws but also in practice. Moreover, the state

should develop concrete rules and regulations concerning eviction and manage the provision of fair compensation to each and every loss suffered in order to safeguard land and human rights of people.

5.6. Summary

Discussion shows that post-disaster land issues affected majorly to the poor and vulnerable groups of Nepal. The relocation process is not able to accommodate the vulnerable groups as there is no guarantee of land tenure security after relocation. Similarly, absence of land records may create land disputes, which in turn impede the reconstruction process. The reconstruction policy is grant-based rather than providing tenure security to the poor and vulnerable. This may affect resilience of the people while land titling is supposed to secure further investment and underpin economic development in the long run. Due to dominant social norms and absence of land rights, women are most likely to be excluded in the reconstruction process. Evaluation of JLOC policy is essential in order to detect impacts on gender-gap in land ownership. Gap in the documentation of land rights of the vulnerable groups and cases of evictions point out that land right is not protected in Nepal although the government ensures minimal land right in accordance with UDHR. In order for the people to realize land as human right, concrete laws and compensatory measures against eviction are obligatory.

6. ASSESSMENT OF OPPORTUNITIES FOR FFP LAND ADMINISTRATION AND GUIDELINES FOR FFP IMPLEMENTATION

6.1. Introduction

This chapter focuses on the assessment of legal, technical and institutional frameworks of land administration in Nepal based on FFP frameworks as a requirement to accomplish sub-objective 3. The assessment will cover the results presented in chapter 4 with a focus on key themes relating to legal, technical and institutional issues in land administration in Nepal along with the supporting literature review on Nepal from chapter 3. At the end, the chapter develops possible guidelines for improving the land administration in Nepal.

6.1.1. Gaps in the legal and regulatory frameworks of land administration in Nepal

Legal and regulatory framework establishes rules, policy, roles and responsibilities of organizations to administer rights on land. Legal and regulatory frameworks of FFP land administration includes: enshrine FFP approach in law; secure land rights for all; human rights and gender equity and continuum of tenure-STD. Assessment of legal and regulatory framework provides the existing status, positive and negative aspects of an organization which can be used to further reform the system.

1) Gaps in existing rules and regulations

Results from this research show that land administration in Nepal refer to *Muluki Ain* to settle land disputes and follows judicial approaches like courts and notary. Moreover, it imposes inequitable provisions by confining women land rights in male. Several land acts like The Land (Survey and Measurement) Act 1963, Land Revenue Act 1978 and Trust Corporation Act 1976 were made long time ago and have not been revised and amended to suit the present contexts. Likewise, the laws conflict with one another and create discrepancies in the land administration services like land registration, mapping and disputes settlement (see section 3.5.3). After the disaster, the government adopted flexibility in the reconstruction process by amending NRA policy, where reconstruction grant is provided independent of land tenure status as stated in sub-chapter 4.5.1. In addition, law specifying the land claim period for the earthquake-affected parcels has been modified from 35 days to 15 days to accelerate reconstruction process.

2) Gaps in documentation of land rights ('security of tenure gap')

With respect to results, land administration in Nepal recognises only formal land tenure. As shown in section 3.5.2, formal land tenure types include state land, *Guthi* land and private land. Besides that, there are other land tenure types like informal land tenure, non-formal land tenure and women's land rights, which are not recognised explicitly by the state (refer to section 4.3). The informal land tenure is possessed by the large group of population in Nepal like landless, *sukumbasi* and encroachment tenure holders. Figure 14 illustrates wide gap in the land possession of the poor and vulnerable corresponding to their population.

3) Centralized recordation in *Field Book* and *Moth*

As in chapter 4, land administration system in Nepal is centralized where Survey Department manages 139 DSOs and DoLRM manages 129 DLROs. In each DSO and DLRO, fundamental land records are

maintained in one register called *Field Book and Moth* respectively. The records are maintained only by district offices (sub-chapter 3.5.4).

4) Gender gap in land ownership

As illustrated in figure 14, woman represents more than half of the population in Nepal. Conversely, less than twenty percent of land is owned by women. Results from CSRC show that women have to take the consent of male while doing any transaction. Likewise, existing rules and regulations do not address women’s land rights well whereas social norms deprive them from inheriting land and property in Nepal. With a view to encourage women in land ownership, the government provides twenty five percent tax discount while registering property in the name of women. This has eventually increased land ownership from 14% in 2001 to 19% in 2011 (CSRC, 2013; OXFAM et al., 2016). In the same way, NRA has adopted JLOC policy to promote gender-inclusive reconstruction.

Below table presents the summary of the assessment of the legal and regulatory frameworks of land administration in Nepal against the key principles of FFP legal framework.

FFP	Nepal (As is)
A flexible framework designed along administrative rather than judicial lines	<ul style="list-style-type: none"> •Based on historical judicial lines •Refers to Muluki Ain, Land acts 1963, 1978
A continuum of tenure rather than just individual ownership	<ul style="list-style-type: none"> •Honors only individual ownership •Excludes big population of poor and vulnerable who possess socially legitimate land rights
Flexible recordation rather than only one register	<ul style="list-style-type: none"> •Centralised level of land administration limited in <i>Field Book and Moth</i>
Ensuring gender equity for land and property rights	<ul style="list-style-type: none"> •Women land rights are constrained by <i>Muluki Ain</i> and social norms •Gap in women land rights compared to men

Table 5: Legal and regulatory framework of land administration in Nepal versus FFP key principles

6.1.2. Gaps in the institutional frameworks of land administration in Nepal

Institutional framework is a collection of activities and processes carried out in relation to people and land. Institutional frameworks of FFP land administration includes: Holistic, transparent and cost-effective approach; sustainable IT-approach; ongoing capacity development and continuum of services. Assessment may help to identify the efficiency and effectiveness of the business processes as well as governance in land administration (van Asperen, 2014).

1) Land governance

As mentioned in literature, governance in land can be assessed by the following seven elements of land governance:

- **Security of tenure to all**

Chapter 4 demonstrates that majority of the population in Nepal lack land tenure security. Land rights of poor and vulnerable groups like informal settlements, Dalits, indigenous groups, non-formal tenure and women remain unaddressed. There is an increasing growth of informal settlements from 2000 in 2010 to 63000 in 2107 (Dijkstra et al., 2017).

- **Effective and efficient land administration system**

The Doing Business Report World Bank (2016) ranks Nepal as 72nd in the World and 2nd in South Asia. There are only three procedures in land registration which takes only three days with the minimum cost of five percent of total property. Notwithstanding quicker business processes in Nepal, too many rules and procedures in land agencies complicate the processes. There are more than thirty steps to be followed to complete land transaction (see section 3.5.5)

- **Civic engagement and participation**

Interview from CSRC and HURADEC reveals that there is lack of interaction between land institutions and CSO. There is no participation of community in decision making related to land issues. It lacks PPP approach. Land dispute cases are referred to court decisions without mediation of community. However, in the reconstruction process, NRA has adopted CDA approach of land adjudication, which is expected to engage public and local community in land adjudication process.

- **Sustainability and accessibility**

Subedi (2009) describes land registration process in Nepal as cumbersome and lengthy since people have to visit cadaster and land registration offices separately, which increases cost and time of transactions. Land transaction is done manually and based on paper that is prone to losses and frauds. Results from Nepal show that recently the government has set up land records management system to implement digital transactions and enhance accessibility of land information to public. Moreover, DoLIA scanned all the land records nation-wide and is on the verge to implement centralized land information system.

- **Subsidiarity and political stability**

Interview from Survey Department notes that land administration in Nepal is centralized. Decisions and policy making are limited to MoLRM without the involvement of other land stakeholders. Land records are centralized in DLRO and DSO offices. On the one hand, federalization in Nepal is supposed to bring land administration systems in three-tier (central, state and local) structure and promote public participation in the land administration. On the other hand as reported by MoLRM, the quick transition of government impacted the implementation of rules and regulations regarding land reforms. The new government replaces the land institutions established by the former government with new programs and policy, which brings inconsistency during implementation phase.

- **Equity**

Compared to men, women land rights are circumscribed by social norms as well as existing laws as explained in *Muluki Ain*. The poor and vulnerable are neglected in the reconstruction process due to social biasness (section 4.2.1). Land registration services are influenced by socio-economic status of client. Similarly, land administration services are swayed by nepotism and favoritism.

- **Transparency**

Transparency International 2017 ranked Nepal 131st position in the world in the corruption perception index 2016 with score of 29 out of 100 in the year 2016. Transparency International Nepal 2016 reported highest level of corruption in land sectors in Nepal especially during land registration. Furthermore, customers are compelled to pay bribes and extortions to get works done in fast track. In addition, results from OXFAM identify that there is a little awareness about the present NRA reconstruction policy, and the policy is not eligible to local people.

2) **Lack of coordination between land institutions**

According to interview results from MoLRM, land in Nepal is managed by different institutions like MoLRM, Trust Corporation, Ministry of Forest and Soil Conservation, Ministry of road and Ministry of Social Welfare in Nepal. Each institution has different rules and regulations regarding access, use and

control of land resources, which create conflicts during land management. Similarly, there is a gap in between The Land (Survey and Measurement) Act 1963 and Land Revenue Act 1978 stating that the works done by DSOs may not be necessarily accepted by DLROs (see section 3.5.2). Moreover, Survey Department states that the accuracy of data differs between the paper cadastral maps of DSOs and the scanned maps of DoLIA.

3) Lack of integrated ICT approach

Land administration in Nepal is paper-based and lacks integrated ICT approach. Transactions and land records are generally maintained manually. However, DoLIA has commenced the computerisation of all land records of Nepal and is attempting to create CILIS by connecting information of all district level offices to central server (refer to section 3.5.6).

4) Lack of transparency and accessibility

This is explained in earlier section of land governance.

Below table presents summary of the assessment of institutional framework of land administration in Nepal against the key principles of FFP institutional framework

FFP	Nepal (As is)
Good land governance rather than bureaucratic barriers	<ul style="list-style-type: none"> •Lacks participatory approach, lacks security of tenure to all, absence of gender equity and political stability, cases of forceful eviction
Integrated institutional framework rather than sectorial silos.	<ul style="list-style-type: none"> •Land managed by different organisations •Inconsistency between rules and regulations
Flexible ICT approach rather than high-end technology solutions	<ul style="list-style-type: none"> •Lacks integrated ICT approach, more inclined to paper based systems.
Transparent land information with easy and affordable access for all.	<ul style="list-style-type: none"> •Lacks transparency in land administration, rules and regulations ineligible to people, existence of several rules and regulations

Table 6: Institutional framework of land administration in Nepal versus FFP key principles

6.1.3. Gaps in the technical frameworks of land administration in Nepal

Technical framework is a combination of tools and technology that support the recordation of land related data by surveying and mapping. Technical framework of FFP land administration covers: aerial imagery countrywide; participatory field adjudication; incremental improvement and continuum of accuracy. Assessment of technical framework assists in evaluating the standards and requirements of cadastral system in regard to cost, time and quality as well as its adaptation with the local situation (Augustinus et al., 2006).

1) Fixed boundaries survey since 1963

Apropos of section 3.5.6, land administration in Nepal operates on fixed boundaries survey and follows graphical survey method. This system of surveying operates on rigid technical standards and focuses more on geometric accuracy. It is well noted from Raja Ram Chhatkuli of UN-Habitat Nepal that in post-conflict *Achham* district of Nepal, owing to rigid technical requirements, use of aerial imagery was aborted and fixed boundary survey was continued.

2) Use of conventional surveying

Survey Department (2012, p.9-13) argues that though it is well accepted that graphical technique of surveying is expensive, slow and unfit for mapping and planning purposes, there has not been enough agreement to use aerial imagery in Nepal. Plane table has been used in Nepal since 1963 and is still in continuation.

3) Binding to geometric accuracy

Results from interview with NRA and MoLRM show that aerial imagery may create inconsistency and inaccuracy in land administration systems. Due to insufficient accuracy, it may lead to land disputes and court cases. Accuracy can't be sacrificed in terms of time and cost.

4) Expensive survey tools used to update and upgrade accuracy

According to results, graphical surveying is used in remote areas of Nepal whereas total station is used in the urban areas for higher accuracy. Interview from Survey Department shows that the use of open source tools like STDM and SOLA can serve as an alternative to conventional mapping.

Below table presents a summary of the assessment of technical frameworks of land administration in Nepal against the key principles of FFP technical framework.

FFP	Nepal (As is)
Visible boundaries rather than fixed boundaries	<ul style="list-style-type: none"> • Based on fixed boundary survey
Aerial/satellite imagery rather than field surveys .	<ul style="list-style-type: none"> • Use of plane table survey method since 1963
Accuracy relates to the purpose rather than technical standards.	<ul style="list-style-type: none"> • Binding to geometric accuracy, rigid technical standards
Opportunities for updating, upgrading and improvement.	<ul style="list-style-type: none"> • Incremental improvement is based on expensive tools • Initiation of open source tools

Table 7: Technical framework of land administration in Nepal versus FFP key principles

6.2. Discussion of the main findings from the assessment

Continuum of tenure - STDM: Various literatures and applications of FFP approach across the globe show that a continuum of tenure is an alternative to costly land registration and offers practical ways of recording land rights. This is evident from the Namibia's FLT act, which established a three-tier land tenure system. These land rights empowered the informal land tenure holders as they could enter the land market through collateral and mortgage. The system allows incremental upgrading of land rights to freehold over time (Christensen, 2015; Government of Namibia, 2012). Participatory enumeration used by the government of Philippines and Somalia during the relocation and resettlement of informal settlements also provides an application of STDM. Stunning example of FFP approach comes from Mozambique's Participatory Fit-For-Purpose Massive Land Registration where nationwide coverage of land registration is carried out independent of the level of formality, legality and technical accuracy. Similarly, STDM has been proposed by the government of Haiti for the post-crisis environment as an alternative land administration system (UN-Habitat & GLTN, 2013).

Findings from the assessment show that land administration system in Nepal is judicial-based and honors only formal land tenure, while excluding other forms of socially legitimate land rights like informal land tenure, non-formal and women's land rights. The Post Disaster Needs Assessment in Nepal recognized the importance of protecting land rights of the vulnerable stating "measures to support and promote

attainment of ownership rights and tenure rights are essential to ensure that post-disaster recovery programs do not reinforce the inequalities faced by women and vulnerable social groups” (National Planning Commission, 2015). In response to this, NRA adopted flexible reconstruction policy and provided grants to all tenure holders including informal land tenure. So, to support NRA policy, a flexible land tenure approach can be adopted as done in case of Namibia FLT where all the legitimate land rights like informal, non-formal and indigenous land rights can be defined in the land policy as a first step towards formalizing. Secondly, concepts of STDM and participatory enumeration can be used as a pro-poor land tenure recordation for capturing the social tenure relationship between informal settlements and the land occupied. Finally, this data can be integrated into national cadaster where it could be upgraded in response to desired accuracy and requirements.

Aerial imagery: FFP approach advocates the use of aerial imagery as an alternative to conventional mapping. Aerial imagery uses visual boundary; demand low accuracy; involves cheaper and faster methods and is useful in remote and rural areas where settlement is low and accuracy is insignificant. Boundary on imagery can easily be interpreted and does not require specialized skill as experienced in Ethiopia. It is argued that this approach can minimize the registration time and mapping cost substantially by three to five times than field survey. Rwanda serves as an exemplary of FFP mapping where locally recruited para-surveyors mapped the whole country within 4 years in a cost-effective and efficient manner (Enemark, Bell, et al., 2014).

Assessment shows that land administration in Nepal is conventional and binding to rigid technical standards rather than serving the purposes. Compared to Rwanda, in the post-conflict Achham district of Nepal, fixed boundary survey technique was implemented for capturing land records, which took ten years, yet the project is incomplete. This shows that conventional survey is time-consuming and incurs high cost and effort. It is obvious that the purpose of the post-disaster is immediate provision of land and shelter rather than accuracy. This is also apparent from the interview with HURADEC in Dolakha. To speed up reconstruction in Nepal, use of aerial imagery facilitated by CDA approach can provide faster and reliable capturing of data. The CDA approach can assist in adjudication of parcels whereas aerial imagery can reduce time and cost of land registration.

Land governance: UNECE (2005) states that land administration agencies managed in an integrated basis (as in Finland and Sweden) leads to a good governance of land and removes inconsistency between organizations. Concept of one-stop shop can prevent duplication of records, enrich delivery of land information and saves cost and time of going to several offices. FAO identifies good governance in land administration through clear and visible transactions, development of single integrated agency, public inspection and electronic-based transactions. However, Fetai (2015) identifies that merging of land institutions may create possible issues of ‘winners’ and ‘losers’ and may lead to inconsistency between the cadastral and registry database.

Assessment shows that status of land governance in Nepal is below average and is ascribed to higher corruption index, lack of tenure security, gender inequity and institutional silos. Land administration is centralized and lacks transparency. However, federal structure is expected to bring land administration closer to public and encourage civic engagement and public accessibility. Moreover, implementation of online-transaction would curb the corruption and boost service delivery in land transactions. To eliminate inconsistency between land institutions, land and its related resources needs to be managed in an integrated structure and one baseline data could be created to check inconsistencies, data duplication and frauds.

6.3. Opportunity of FFP land administration in Nepal

“While the post-disaster period provides an opportunity for introducing FFP land administration, the earthquake creates an additional ‘purpose’ though the ‘purpose’ may differ country-wise” (Mitchell et al., 2017). This statement can be substantiated by the amendments in the policy of NRA in response to the informal and non-formal land tenure holders during reconstruction. With regard to results, the provision to provide reconstruction services to all the land tenure holders in Nepal irrespective of the previous tenure situation and the adoption of gender-inclusive reconstruction approach reflects a strong foundation to implement FFP in Nepal. Similarly, in response to legal and regulatory framework, MoLRM adopted flexibility in the claim period over the registration of quake-affected parcels against the claim of others by reducing claim period from 35 days to 15 days for the earthquake victims. This quickened the process of reconstruction. In addition, resolution of land disputes and involvement of local people through CDA approach also indicates the initiation of participatory inclusive step in the land administration systems. Though there has not been a considerable agreement in the technical framework regarding the use of aerial imagery, ignition of FFP approach via legal framework has been kicked off. The Constitution of Nepal 2015 advocates gender equality concerning land and property acquisition. It provides rights to the poor and vulnerable like landless, *sukumbasi*, indigenous groups and women in terms of housing and land security. Similarly, federal structure brings land administration closer to public and society and stimulates decentralization in land administration. Also, lately, the government promoted open source software as a substitute for expensive land tools and technology. These all will help build a skeleton for the implementation of FFP land administration in Nepal.

In addition, the assessment of legal, technical and institutional frameworks of land administration in Nepal shows that the present land administration needs improvements to adapt to the existing needs of the society. It needs to address the issues of informal settlements, gender equity, transparency and issues of institutional silos in order to establish good land governance in the land administration systems. Assessment of the gaps provides direction for improvements whereas post-disaster opportunity provides support to adopt new policy and review the existing systems to adapt with the benefits of FFP land administration. The guidelines proposed below could help to bridge the gaps in the land administration and aid in the implementation of FFP approach in Nepal.

6.4. Proposed guidelines to implement FFP land administration

In regard to the above assessment and discussion, following guidelines can be proposed in order to bridge the gaps in the legal, technical and institutional frameworks of the land administration in Nepal. The guidelines may help to construct flexible, gender-inclusive and participatory land administration, which in turn may help to achieve sustainable post-disaster reconstruction.

6.4.1. Legal and regulatory framework:

The legal and regulatory framework of land administration implies that land administration systems could be established in such a way that it incorporates all the land rights of people and provide security of tenure to all. In case of Nepal, following guidelines can be adapted to implement FFP approach.

- **Reconstruction grants with secure land tenure:** Distribution of reconstruction grants to the poor and vulnerable should not be limited only in constructing shelters. The reconstruction policy could provide tenure security along with grants to ensure the benefits of grants in secured investment. This can be achieved by providing temporary land certificate which can be formalised later in future in accordance with the continuum of tenure.

- **Eligibility criteria in the context of disaster:** Most importantly, grant eligibility criteria should not enforce any condition for the poor and vulnerable, that is, ‘preparation of recommendation letter for land adjudication via agreement of adjacent landowners’ as quoted in reconstruction policy. There is a probability that Dalits may be biased from other castes during land adjudication, which may affect ‘recommendation letter’, and thereby reconstruction grants.
- **Human rights and eviction:** It is strongly recommended that all forms of socially legitimate land rights be enshrined in laws. Eviction is a prima facie unacceptable to all except under specific circumstances that comply with UDHR laws. Proper laws and regulations should be executed along with just compensation to realize human rights to land and property by people. Similarly, a national housing policy could be developed to provide land and shelter to the landless. The policy could be realized at all levels of the government like central, state and local supported by the central authority.
- **Adequate awareness about laws:** Successful implementation of reconstruction policy can only be possible if there is a complete awareness in public about the policy. Laws and regulations could be made simple, easy to understand and accessible to local people. According to VGGT, laws and regulations should be published in languages eligible to local people.
- **Relocation with consent and tenure security:** The relocation process is highly recommended to be carried out with the consent of the community and victims. It should not affect the livelihood, family ties, and communal harmony. It is imperative to assure victims of secure land tenure before relocation. Likewise, relocation process should be done in consistent with the land use policy to prevent resettlement in hazard-prone zones.
- **Community mediation in land-related cases:** Alternative dispute resolution mechanisms like CDA and PRA tools, which involve community mediation, could be protected in laws to guarantee legal recognition and sustainable land disputes resolution.
- **Define legitimate rights in land policy and recognise nationwide:** It is strongly recommended that legitimate land rights like informal, non-formal and indigenous land rights be identified and documented by the government nationwide. These rights need to be well defined in land policy in order to ensure both social and legal recognition. A flexible land tenure approach can be adopted as done in case of Namibia FLT whereby, based on the continuum of land rights, these land rights can be upgraded to freehold by the land authority over time. To expedite these approaches, STDM and participatory enumeration can be used as a pro-poor land tenure recordation for capturing the social tenure data.
- **Separate layer for social and legal tenures and their upgrading:** Creation of separate layer of social and legal tenures is suggested to enable upgrading of its security. Based on the continuum of land rights, this could be done as: 1) firstly, upgrading of social tenure should meet the conditions and requirements set by the legal framework 2) secondly, public notice regarding the upgrading of rights is necessary so as to examine the competing claims over the parcels in a transparent manner. A land claim period could be fixed for the public notice as well.
- **Flexible land recordation:** Recording and archiving of land records could be decentralised, that is, could be done at different levels. Because centralised land records are prone to destruction, a flexible approach of keeping land records to more than one place and register needs to be

adopted. Local recordation of data could be initiated where community can take responsibility of recording and storing of data.

- **JLOC policy together with awareness:** In order to strengthen woman land rights in Nepal, the state could implement JLOC policy nationwide and not limiting only in disaster-affected areas. Similarly, further monitoring and evaluation of JLOC policy is required to guarantee whether the policy is achieving its targets. Most importantly, gender awareness raising programs could be campaigned to encourage women rise beyond social norms and understand the impacts of land tenure security.
- **Inclusion of disaster-responsive land policy:** It is highly recommended to include disaster-responsive policy in the national land policy. This may include management of grants in case of disaster; immediate response to land issues after the disaster; provisions to ensure the poor and vulnerable are not excluded from the recovery and reconstruction in absence of land tenure security; alternative dispute resolution mechanisms; and right to housing, land and property in case of landlessness.
- **Gender-sensitive land laws:** Formulation of gender-sensitive land laws based on the sphere of gender equity and equality is strongly recommended. Prompt action is required in order to safeguard women land rights against eviction and vulnerability.

6.4.2. Technical framework:

The technical or spatial framework should fit with the purposes of the system rather than adhering to the rules and regulations. The most suitable technology and tools could be applied and consideration of time, cost and quality could be taken into account while doing survey and mapping works. The technical framework should address the needs of society based on available resources and time. Based on our discussion and assessment, following guidelines can be adapted by the land administration system to implement FFP technical approach.

- **Aerial imagery over conventional surveys:** Taking into account of the resilience of the poor and vulnerable and the time and cost accrued due to conventional surveying, the government could adopt the application of aerial imagery in post-disaster reconstruction and mapping. On the basis of topography and settlement density, scale of the map could be selected. Directives and standards could be issued for judging image quality, accuracy criteria and software. Technical standards are made flexible and could be employed based on available resources and technology.
- **Address needs rather than accuracy:** Visual boundary approach of surveying could be considered where land tenure security is more essential than geometric accuracy like in the case of post-conflict and post-disaster.
- **Promote open source tools:** Open source tools like STDM or SOLA is highly recommended as they encourage participatory mapping, provides incremental improvement and saves time and cost.
- **Capacity building for technical framework:** Adequate capacity regarding the operation, maintenance, update and upgrade of the tools and software system needs to be developed to ensure sustainability of the technical framework. Training and short-term capacity development programs could be carried time and again to bolster the technical skills of employees in the organisation.

6.4.3. Institutional framework:

Inconsistencies between organizations impede the business processes of land administration and affect the efficiency of service delivery. Based on the assessment and discussion above, following guidelines can be adapted to make the institutional processes synchronize with each other and improve land governance in the land administration of Nepal.

- **On-stop shop policy:** One-stop shop policy needs to be regulated in order to deliver accessible and affordable land administration services. Since DSOs, DLROs and LROs operate land administration services in Nepal, there should be well coordination in between the activities of these organisations. A common baseline data is a pre-requisite to get rid of inconsistencies, and mechanisms could be developed to ensure a consistent flow of information to and from these organisations in order to prevent data duplication and frauds.
- **Promote PPP:** PPP approach needs to be developed to make land administration systems participatory. Decisions and contributions of CSOs should be taken into account while creating land policy.
- **Visible land transactions:** It is strongly recommende that land registration and transfer process be clearly visible and understandable to public. Enough time could be given for public scrutiny of land documents.
- **Develop ICT policy:** Flexible ICT approach is highly recommended. Electronic system of land transactions and archiving could be maintained to minimise corruption and duplication of records. In order to install ICT approach, firstly, the in-and-out information flow in land institutions could be analysed, and based on the analysis, a sound ICT policy could be mandated. Capacity development of existing manpower should be established beforehand to operate and sustain ICT infrastructure and expertise. Rules and regulations regarding digital data security are equally essential to check digital attack and data integrity.
- **One land policy:** Attention needs to be drawn that decentralisation of land administration services does not create the formation of separate land laws and regulations by individual federal state. One policy regulating land administration systems and one central server connecting each federal state to create a central archive of land records is highly recommended. On the other hand, specific local land rights could be documented locally and managed by the local land institution.
- **Capacity development:** Training and capacity building of land surveyors should be taken as the first and foremost task before establishing FFP land administration. This can be achieved by providing proper education and training to surveyors as well as assessing the existing capacity of land professionals.
- **Computerization of legacy land data:** Computerization of legacy land data is essential to create a sustainable backup that could be used to restore the original after loss in disaster or any event. Moreover, it could help settle issues arising from land disputes, land and property inheritance, and can be used in planning purposes of city and informal settlements.
- **Quality improvement of the registry, the cadastre and the link after digitizing:** Continuous improvement of registers is important to enable data integrity, interoperability, and minimization of duplicate land records.

6.5. Summary

This chapter assessed the legal, technical and institutional gaps existing in the land administration in Nepal and proposed guidelines to bridge the gaps in the system. The guidelines draw attention to develop a flexible land tenure policy for including legitimate land rights all over the country. It highlights the application of aerial imagery in post-disaster reconstruction as a cheaper and quicker option over existing methods of surveying. In addition, it stresses development of one-stop shop policy and visible transaction services to enable accessible, affordable and transparent delivery of land administration services. Finally, these guidelines pave the path where required improvements can be done to implement FFP land administration.

7. CONCLUSIONS AND RECOMMENDATIONS

7.1. Introduction

This research has been carried out with an aim of exploring the gaps in the current land administration in Nepal and to develop guidelines for implementing FFP land administration. To fulfil the aim of this research, a thorough literature review as well as collection of primary and secondary data in Nepal is done. Following this, final processing of results is performed through thematic analysis. Remarkably, validation of results is done with the research participants that increased the legitimacy and authenticity of the research. This research has demonstrated that post-disaster context in Nepal generated opportunity to address the land tenure issues of the poor and vulnerable; established policy concerning gender equity and promoted participatory approach of land adjudication. This research also linked the impacts of land tenure security in the context of disaster and UDHR. Finally, the research assessed the gaps in the legal, technical and institutional frameworks of land administration in Nepal and proposed guidelines that could be utilised to bridge the gaps towards the implementation of FFP land administration in post-disaster context. The assessment together with the guidelines helps to visualize the improvement areas where the post-disaster opportunity can be aligned with and scaled up. This chapter presents the conclusions of this research and outlines possible recommendations for further research.

7.2. Conclusions

This thesis has been carried out with an objective of assessing the opportunity to implement FFP land administration in post-disaster Nepal in the context of the poor and vulnerable group. The main objective is accomplished through the three supporting objectives. The achievement of the three sub-objectives is summarised below:

Sub-objective No 1: *To identify the post-disaster land issues in the post-disaster environment in relation to the poor and vulnerable.*

This sub-objective identifies different land issues faced by the poor and vulnerable after disaster and the recovery plans implemented towards reconstruction. Post-disaster land challenges faced were destruction of houses and displacement of population; issues of land disputes and land records as presented in details in section 4.2. Relocation created additional problems in case of the poor and vulnerable. The most affected population are Dalits and indigenous groups, informal tenure holders, women and tenants. Recovery plans implemented were the establishment of reconstruction policy to incorporate all the existing land right holders including informal land tenures. Similarly, adoption of JLOC policy and CDA approach of land adjudication promote gender-inclusive reconstruction as well as community involvement in land adjudication respectively (refer to sections under 4.2).

Sub-objective No 2: *To explore the “security of tenure gap” that affects the land rights of the poor and vulnerable in the context of the Universal Declaration of Human Rights.*

This sub-objective explores land tenure types in Nepal, gaps in land tenure documentation and its impacts on the poor and vulnerable in the context of disaster and UDHR. Besides formal land tenure, there exists informal land tenure (in the form of landless, *sukumbasi* and encroachment tenure) and non-formal tenure in the form of *Gann* block and *swabasi jagga* as elaborated in sub-chapter 4.3. Non-formal tenure possesses both social and legal legitimacy whereas informal tenure lacks legal recognition. Gap in the documentation of land rights shows that nearly fifty percent of the population of Nepal, especially the poor and vulnerable lacks secure land tenure (refer to figure 14). Lack of tenure security deprived the poor and vulnerable from recovery assistance. In the same way, owing to weak tenure security, women are most

likely to be excluded from reconstruction services and may face social sanctions as discussed in section 5.4.

UDHR states land as a fundamental human right and requires that eviction must not be done except under state obligations (see section 5.5.) In the same way, Constitution of Nepal 2015 defines land rights through rights related to property, adequate housing and rights of landless. However, gap in the documentation of land rights of poor and vulnerable group shows that though land as a fundamental human right is mentioned in the Constitution of Nepal 2015, it has not yet been realized in Nepal. Similarly, different cases of forceful eviction indicate that land right is not secured. In order to ensure land as a fundamental human right, the government should address all forms of legitimate land tenure types via documentation as well as safeguard those land rights against eviction by taking immediate measures and assuring adequate compensation. Concrete rules and regulations are necessary to implement these protective measures.

Sub-objective No 3: *To explore the legal, technical and institutional issues that impact the implementation of FFP approach in Nepal.*

This sub-objective made an assessment of the land administration frameworks in Nepal to dig out the loopholes in the land administration systems (refer to chapter 6). The assessment of the legal, technical and institutional frameworks in the current land administration in Nepal reveals that the land rights of the poor and vulnerable groups like Dalits, indigenous groups and women have rarely been spoken about. The laws and regulations governing the land administration systems are judicial-based but there could be more consistency. The technical framework follows inflexible standards and is based on geometric accuracy rather than fitting with the purposes of societal context. Likewise, there has not been enough agreement to use aerial imagery though it is well accepted that aerial imagery would cut down the operational cost of mapping and surveying. Land is managed by several land organisations, and coordination is proposed to be developed. Institutional silo is prevalent and the status of land governance is weak in Nepal. Overall the assessment provided directions which can be used to further improve the land administration system in Nepal based on FFP approaches.

Relevant guidelines are proposed in order to bridge the gaps in the land administration systems and assist in building context-based, participatory and inclusive FFP land administration system (see section 6.4). Firstly, the guidelines stress on land tenure security of the poor and vulnerable with the documentation of legitimate land rights using STDM. Secondly, use of aerial imagery to capture land rights in post-disaster context is proposed, which could speed up the reconstruction process. Thirdly, integration of land institutions and development of one-stop shop is essential to enable good land governance in land administration. Finally, capacity development of the land institutions in legal, technical and institutional aspects needs to be done beforehand in order to sustain FFP land administration.

7.3. Recommendations

This research delved into the gaps present in the current land administration and developed guidelines to fill the gaps by implementing FFP land administration and availing post-disaster opportunities. Recommendations, on the other hand, could help effectuate the guidelines and accelerate the post-disaster reconstruction process. Listed below are two recommendations for two of the guidelines:

7.3.1. Aerial imagery over conventional surveying

Research shows that the use of satellite imagery can reduce the cost and time of mapping significantly. In a post-disaster reconstruction in Nepal, as this also creates an opportunity, a pilot project is highly recommended in order to cross-check the quality of aerial imagery compared to the existing cadastral

maps of Nepal. Evaluation of cost, time and quality can also be done to guarantee which method is quicker and cheaper.

7.3.2. Scaling up post-disaster opportunity

Disaster creates a window of opportunities for the society and organizations. The reconstruction policy is limited to earthquake-affected districts. At this time, it is an opportunity for the government to identify the landless, *sukumbasi* and informal settlements nationwide and develop policy to include all these poor and vulnerable groups in the land administration system - one for earthquake-affected areas as an emergency approach, and another beyond earthquake-affected areas as an on-going process. This could be achieved by formulating a flexible land tenure act.

7.4. Suggestions for further research

This research showed areas of improvements in the current land administration where the post disaster opportunities can be applied to fix the gaps. Based on the findings, this research suggests the following areas for further research:

- Further research could focus on the assessment of JLOC policy concerning gender equity in earthquake-affected districts.
- Research based on the perception of tenure security by the poor and vulnerable groups after receiving reconstruction grants can also be beneficial in order to assess tenure security of the poor and vulnerable.
- Moreover, research could also be conducted to assess the impacts of relocation and resettlement measures over the poor and vulnerable.

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APPENDICES:

Appendix 1: List of organizations and respondents contacted during fieldwork

SN	Where	With whom	Methods and Techniques Used	Data Available
1	Bansighat, an informal sector in Kathmandu	Disaster victims	Field observation, informal discussion	Observation photographs, data collection
2	National Reconstruction Authority (NRA)	Kamal Ghimire (Under-secretary)	Semi-structured Interview	Interview recording, data collection, policy documents,
3	Khokana, a non-formal sector in Lalitpur	Rabindra Maharjan (Ward chief), local residents	Field observation, Semi-structured	Observation photographs, data collection
4	Community Self Reliance Center (CSRC) - NGO	Jagat Deuja (Executive Director)	Semi-structured Interview	Interview recording, data collection like reports, books
5	Lumanti Nepal - NGO	Lumanti Joshi (Executive Director)	Semi-structured Interview	Interview recording, data collection like reports, books
6	UN-Habitat Nepal - INGO	RR Chhatkuli (Former DG of Survey Department)	Semi-structured Interview	Interview recording, data collection
7	OXFAM - INGO	Mahendra Mahato (Executive Director)	Semi-structured Interview	Interview recording, data collection like reports, books
8	Survey Department	Ganesh Pd. Bhatta (Director General (DG))	In-depth interview	Interview recording, data collection
9	Ministry of Land Reform and Management (MoLRM)	Gopal Giri (Under-secretary), Helina Shrestha (Survey Officer)	In-depth interview	Interview recording, data collection, policy documents,
10	HURADEC (CSO)	Bishnu Khadka (Executive Director)	In-depth interview	Interview recording, data collection and observation
11	District Survey Office (DSO), Dolakha	Ram K. Basnet (Survey Officer)	Semi-structured Interview	Data collection

Note: *Expert sampling covers: Survey Department, MoLRM and UN-Habitat Nepal while purposive sampling covers all the rest*

Appendix 2: Questionnaires used during interviews

A. Letter to ask permission for interview

Dear Sir/Madam,
Namaste!

My name is Subodh Kumar Yadav. Currently, I am doing MSc thesis in Land Administration. *My thesis topic is, "Land administration in post-disaster Nepal in support of poor and vulnerable: Assessing the opportunities to implement FFP land administration"* I have come to Nepal to conduct field research which is a part of my study. Based on ethical principles of research, I would like to conduct interviews with you with questions listed below. Your information provided to me will be confidential and solely used for educational purposes. Your cooperation and response to the questions will be highly appreciated. The results of this research would contribute to the improvement of land administration systems that could address the numerous land issues faced in our society.

Regards,
Subodh K. Yadav

B. Interview questions for CSRC, Lumanti Nepal and OXFAM (NGO/INGO):

- 1) Could you please tell something about your organizations in relation to land sectors?
- 2) How long have you been working in these sectors?
- 3) In the context of earthquake 2015, what kind of land issues is faced by the society the most? (*Like displacement, women issues, land records, land disputes*)
- 4) Which groups were affected the most in the earthquake 2015?
 - Dalits
 - Janjatis
 - Brahmin/Chhetry
- 5) What are your efforts in addressing those land issues?
- 6) How is the reconstruction policy helping the disaster victims? What is your opinion about the benefits of reconstruction policy in regard to the poor and vulnerable groups?
- 7) Is awareness about reconstruction grant clear with regard to the illiterates and socially vulnerable victims?
- 8) What is your opinion about Fit-For-Purpose land administration? Can it be implemented in Nepal?
- 9) Can FFP address the prevalent land issues in Nepal?
- 10) Do you get any aid from the government or the community where you work?
- 11) How is the government addressing the issues of informal settlements in Kathmandu district?
- 12) What is your suggestion about making the land administration system participatory? What land tools do you implement during land disputes?

C. Interview Questions for UN-Habitat (FFP implementers in Nepal):

1. It is heard that NRA is trying to adopt FFP approach in order to facilitate and speed up reconstruction grants to the poor and vulnerable like squatters, Dalits or landless people. What role is UN-Habitat playing in this aspect?
2. Why FFP approach and not the conventional methods of mapping and establishing tenure security? Can FFP be implemented to record informal tenures and facilitate reconstruction grants to the informal settlers of Kathmandu valley or elsewhere? (Scope of FFP LA in Nepal)
3. What tools can be implemented to record the informal tenure? Is STDM recommended tool to record their rights?
4. Does it provide an opportunity to the poor and vulnerable to get the land tenure?
5. What issues like legal, technical and institutional can be faced in the implementation of FFP approach in Nepal?
6. Please tell something about the informal land tenure in Nepal.
7. What are your experiences regarding land tenure issues in Nepal?

D. Interview questions for Civil Society Organisations - HURADEC:

- 1) Since how long have u been working in this sector?
- 2) Which group faces land issues the most?
- 3) How do you relate land and human right?
- 4) What can be done to provide land tenure security to the victims in an efficient manner?
- 5) What is your opinion about STDM mapping?

E. Interview questions for NRA:

1. What are the major land issues faced after 2015 earthquake?
2. What kind of population was affected the most?
3. What interventions government has made towards recovery and reconstruction?
4. How is reconstructing policy addressing the post-disaster land issues?
5. How did you address the issues of poor and vulnerable groups like Dalits, women, indigenous groups?
6. How do you deal with the issues of informal settlements in Kathmandu Valley regarding Khokana and Bansighat settlements?
7. On what basis are you going to give reconstruction grants to the informal land tenure holders since they do not possess land certificates?
8. It is heard that NRA is on the verge of implementing FFP approach in post-disaster reconstruction? What is your opinion regarding FFP implementation in Nepal?
9. Is FFP approach only ad-hoc or scalable to whole Nepal?
10. What is your perception of using aerial imagery instead of conventional surveying to speed up mapping process in in post-disaster context?

F. Interview questions for land professionals – MoLRM, Survey Department and DSO Dolakha:

- 1) What kind of land tenure types exist in Nepal?
- 2) Are they all recognised by our land administration system? If not why?
- 3) Though UDHR (art. 17) and constitution of Nepal 2015 has granted rights to informal and vulnerable groups, why are their rights not recorded and recognised?
- 4) FFP LA is an alternative to conventional system, but political will is must to implement. What is the perception of MoLRM regarding its implementation?
- 5) UN-Habitat and GLTN projects in African countries have shown that aerial imagery can reduce cost and time considerably? What about using aerial imagery to speed up mapping process in Nepal?
- 6) Does disaster create an opportunity to formalise all the informal tenures?
- 7) How are the issues of informal settlements or landless being addressed in post disaster reconstruction stage?
- 8) Several land reform commissions have been established in the past to tackle land issues but the issues continue as it is. Could you justify?
- 9) Conventional methods honour only freehold/formal tenure, use expensive methods and technology to record and map, takes time and cost and is binding to rigid rules and regulations. What is your opinion about current land administration in terms of legal, institutional and technical frameworks?
- 10) In case of post disaster context, immediate and cheap solutions are more deemed essential, that is most fit-for-purpose tools and procedures should be used for mapping, surveying and land titling. What are the prospects of STDM implementation in the LA of Nepal for recording legitimate land rights of the vulnerable groups?
- 11) Nepal has gone under federal structure, LA to be implemented in three tier, Central, State and Local level. What is your opinion on the use of open source technology and tools like STDM (QGIS), SOLA, low cost imagery...?).
- 12) What are the institutional silos due to separate cadastre like Napi and Malpot offices working separately? Is it possible to create integrated cadaster?
- 13) What is your perception of accuracy regarding conventional mapping and STDM?

Appendix 3: Photo gallery from fieldwork



Interview with Kamal Ghimire (NRA) with booklet of reconstruction policy



Meeting earthquake victim, Bansighat



Temple under reconstruction, Khokana