COMMUNITY RESILIENCE CAPACITY

A STUDY ON NEPAL'S 2015 EARTHQUAKES AND AFTERMATH

Central Department of Anthropology
Tribhuvan University
Kirtipur, Kathmandu, Nepal

COMMUNITY RESILIENCE CAPACITY

A STUDY ON NEPAL'S 2015 EARTHQUAKES AND AFTERMATH

Mukta S. Tamang

In collaboration with

Dhanendra V. Shakya, Meeta S. Pradhan, Yogendra B. Gurung, Balkrishna Mabuhang

SOSIN Research Team

PROJECT COORDINATOR

Dr. Dambar Chemjong

RESEARCH DIRECTOR

Dr. Mukta S. Tamang

TEAM LEADERS

Dr. Yogendra B Gurung
Dr. Binod Pokharel
Dr. Meeta S. Pradhan
Dr. Mukta S. Tamang

TEAM MEMBERS

Dr. Dhanendra V. Shakya
Dr. Meeta S. Pradhan
Dr. Yogendra B. Gurung
Mr. Balkrishna Mabuhang
Mr. Mohan Khajum

ADVISORS/REVIEWERS

Dr. Manju Thapa Tuladhar
Mr. Prakash Gnyawali

USAID
FROM THE AMERICAN PEOPLE

COMMUNITY RESILIENCE CAPACITY

A Study on Nepal's 2015 Earthquakes and Aftermath

This study is made possible by the support of the American People through the United States Agency for International Development (USAID). The contents of this report are the sole responsibility of the authors and do not necessarily reflect the views of USAID or the United States Government or Tribhuvan University.

Published by
Central Department of Anthropology (CDA)
Tribhuvan University (TU), Kirtipur, Kathmandu, Nepal
Tel: + 977- 01-4334832
Email: info@cda.tu.edu.np
Website: www.anthropologytu.edu.np

First Published: October 2020
300 Copies

Cataloguing in Publication Data
Tamang, Mukta S.

Community resilience capacity: a study on Nepal's 2015 earthquakes and aftermath/ Mukta S.Tamang …[et al.] Kirtipur : Central Department of Anthropology, Tribhuvan University, 2020.

134p. : Col. Ill. ; Cm.

Includes references.

1. Anthropology - Nepal 2. Community- Resilience 3. Ethnographic research - Nepal 4. Culture and Resilience 5. Earthquakes – Nepal. i. Shakya, Dhanendra V. ii. Pradhan, Meeta S. iii. Gurung, Yogendra B. iv. Mabuhang, Balkrishna. v. Title.

306.095496–dc20

ISBN 978-9937-0-7863-4

Printed in Nepal by: Print Communication Pvt Ltd.

Cover Art Image: by Subas Tamang, "I Want To Die In My Own House," art exhibited in Srihatta-Samdani Art Centre and Sculpture Park, Sylhet, Bangladesh.

Tribhuvan University
OFFICE OF THE VICE CHANCELLOR
Kirtipur, Kathmandu, Nepal

Ref. No.:

TRIBHUVAN UNIVERSITY OFFICE OF THE VICE-CHANCELLOR KIRTIPUR

Foreword

I am delighted to introduce this report of the study on the "State of Social Inclusion in Nepal (SOSIN)," which is a result of collective endeavors of our academics, professional experts, associates and students at Tribhuvan University.

Tribhuvan University is the first national institution of higher education in Nepal and has a history of commitment to academic inquiry geared to the needs and expectations of the Nepalese people and international partners. One of the main objectives of the University is to be involved in the production and dissemination of empirical research and knowledge in the fields of arts, science and technology.

In this context, we promote systematic research on various themes. The SOSIN study, carried out by the Central Department of Anthropology at Tribhuvan University, aims to foster scientific understanding of the issue of social inclusion in Nepal. Social inclusion is a national agenda for Nepal and is also a key part of the Sustainable Development Goals (SDGs). Many policymakers and scholars have cited the lack of empirical data on the subject of social inclusion in Nepal. This research addresses this lacuna by providing scientific and comprehensive data on the gender and social inclusion at the national level and insights on inclusive governance and disaster resilience.

I hope that this contribution will generate vibrant scholarly debate, furthering the cause of intellectual discovery and the tradition of independent analysis. I also hope that it will assist policymakers to find solutions to the complex problems of exclusion and inequality in Nepal.

I would like to thank the United States Agency for International Development (USAID) in Nepal for providing valuable support for this research. This was a unique opportunity to synchronize research, teaching and policy application. I express gratitude to the National Planning Commission, Nepal for supporting the research and for the Commission's commitment to institutionalizing data use in planning processes. I would also like to congratulate the Central Department of Anthropology for making such a valuable and timely contribution to the field of social science research in Nepal.

Prof. Dr. Dharma Kant Baskota
Vice Chancellor
Tribhuvan University

Phone: 4330433/4330434, Fax: 977-1-4331964, E-mail: vcoffce@tribhuvan-university.edu.np, P.O. Box: No. 8212

Foreword

Since 1961, the United States Agency for International Development (USAID) has partnered with the people and Government of Nepal. Our partnership has contributed to some of Nepal's most dramatic and remarkable development successes, including: laying Nepal's first roads; installing its first telephone exchange; supporting the elimination of malaria from the Terai region; enabling agriculture to flourish across the country; increasing literacy rates; drastically reducing child mortality; and facilitating peace and democracy in the later decades. Today, USAID is building on these successes and continues to support Nepal's efforts to become more prosperous, democratic, and healthier.

Nepal's constitution envisions a nation that is inclusive, without any forms of inequality or discrimination. Inclusive development is also at the core of everything that USAID does and it is a hallmark of our work in Nepal. We believe in a future where all people, irrespective of caste, ethnicity, gender, sexual orientation, class, religion, area of origin, language, or disabilities, can exercise full and meaningful participation in their social, economic, cultural, and political lives; enjoy the benefits and opportunities of development; and contribute to their society. Our activities in Nepal are thus guided by the principles of Gender Equality and Social Inclusion (GESI) and achieving the sustainable development goal of Leaving no one behind.

USAID, therefore, partnered with the Central Department of Anthropology of Tribhuvan University to generate comprehensive knowledge and evidence on the social inclusion status of 88 caste and ethnic groups. The information was disaggregated by sex in various dimensions of social, economic, cultural and political lives, including electoral processes and civil service. The State of Social Inclusion in Nepal (SOSIN) study has consequently produced a wealth of empirical data and analysis on the current state of social inclusion in Nepal that can be used to measure progress in ending gender inequality and caste and ethnicity-based exclusion, as well as the remaining challenges. The data is also useful for designing new policies and interventions that help to achieve sustainable GESI outcomes, and to track progress in Nepal's graduation from least developed country to middle-income country status.

We hope that the research will help everyone understand the extent to which inequalities remain pervasive and deep-rooted in Nepali society and identify practical ways to Reach the furthest behind first. It is USAID's goal that the study drives evidence-based monitoring of social inclusion, and that this in turn promotes not only understanding of social inclusion, but also advances equity and opportunity for Nepalis who have been excluded for far too long.

Sepideh Keyvanshad
Mission Director
USAID/Nepal

PREFACE

Over the last decade, Nepal has witnessed a major political transformation. The country moved from a centralized monarchical system to a federal republic. The new constitution promulgated in 2015 envisions equality and social inclusion as major goals for creating a democratic and just society. Yet deeply-rooted social, economic, and political inequalities based on gender, caste and ethnicity remain major challenges.

With this background, the Central Department of Anthropology (CDA) at Tribhuvan University undertook this study on the "State of Social Inclusion in Nepal (SOSIN)." The study aims to produce a nuanced understanding of the situation and dynamics of social inclusion and gender equality. Using both quantitative surveys and qualitative assessments, this research generates empirical data about the current state of equality and social inclusion in Nepal and allows for the tracking of progress. This research is a sequel to the research project "Social Inclusion Atlas and Ethnographic Profile (SIA-EP)" implemented by the then joint Department of Sociology/Anthropology at TU in 2012-2014 with support from the Norwegian Embassy in Nepal. The SIA-EP established a comprehensive national database disaggregated by gender, caste and ethnicity, built a Multidimensional Social Inclusion Index through re-analysis of major national surveys, and produced profiles of 42 highly marginalized caste/ethnic groups to understand the micro-dynamics of exclusion.

SOSIN, carried out in 2018-2019, builds on the previous work and engages with emerging issues related to the theme. The SOSIN research has four major components, all of which use a common lens of social inclusion to understand Nepal's democratic institutions and development progress.

The first component of SOSIN is the Nepal Social Inclusion Survey (NSIS), which collected detailed data from 17,600 sample households across the country. The report "Nepal Social Inclusion Survey (NSIS) 2018" contains analysis covering a wide range of topics related to social inclusion, including household assets, health and social security, work and livelihood, language and education, social, cultural and gender relations, inclusive governance and women's empowerment and reproductive health. This study is unique in the sense that its results are disaggregated by sex, eleven main social groups and by 88 distinct caste/ethnic groups. The findings also provide evidence for tracking changes on a number of key indicators between 2012 and 2018.

The second SOSIN component is a socially disaggregated analysis of Nepal's progress on the Sustainable Development Goals (SDGs). The report "Who Are Left Behind? Tracking Progress on the Sustainable Development Goals in Nepal" presents sex-, caste- and ethnicity-disaggregated data from NSIS 2018 on selected SDG indicators. Data for a total of 40 indicators are presented, including 36 indicators from the National Planning Commission's SDG framework and

four additional indicators proposed based on their relevance to rights and social justice. This report will be valuable for institutionalizing planning and targeting left-behind gender and social groups in order to achieve the SDGs, in line with the spirit of "leaving no one behind."

The third component of SOSIN is an analysis of the state of inclusive governance in Nepal in the new, post-federalization political context. The report "State of Inclusive Governance in Nepal" examines how inclusive governance policies have been translated into practice. Based on the NSIS 2018 survey data, ethnographic field work and secondary data, this report examines the representation of different castes, ethnicities and genders in the bureaucracy, elected local bodies and various committees related to education, health services and community-level development works. It presents perceptions, awareness and practices regarding inclusion within five key 'pillars' of governance, namely: the rule of law; participation; representation; transparency; and accountability. The report analyzes disparities between different caste, ethnic, religious and minority groups, as well as gender differences across these groups and examines possible hindrances to inclusion.

The fourth SOSIN component is a study on community disaster resilience. The report "Community Resilience Capacity: A Study on Nepal's 2015 Earthquakes and Aftermath," provides empirical data on disaster effects, recovery and resilience in the 14 most-affected districts. The study pays particular attention to disproportionate impacts, differential resilience capacities and social inclusion. As global climate change makes Nepal increasingly prone to multiple types of disasters, the results of this study help to enhance understanding of resilience capacity, improve on-going recovery tasks and strengthen disaster risk reduction and management planning.

Exclusion of certain groups of people from meaningful participation in the social, political and economic life of the nation can contribute to inequality and instability. Exclusion is a costly impediment to economic growth, perpetuating poverty and powerlessness among the marginalized. Disparities based on gender and social identity have persisted and may continue to widen, especially when compounded by disasters like the earthquakes and the ongoing economic downturn due to COVID-19. . This study is expected to help policy-makers plan, promote and monitor progress on social inclusion as both a desired outcome and a required strategy for sustainable growth and inclusive democracy. As an academic enquiry, this study will also be helpful for researchers, teachers and students interested in the theoretical contemplations and practical applications for the betterment of human conditions.

Mukta S. Tamang, Ph.D.
Research Director, SOSIN
Central Department of Anthropology,
Tribhuvan University, Kathmandu

Acknowledgements

With a commitment to integrating social research with teaching and combining academic analysis with policy application, the Central Department of Anthropology (CDA) at Tribhuvan University has been involved in systematic research on pertinent themes such as social inclusion in Nepali society over the last 15 years. The set of studies under the title "The State of Social Inclusion in Nepal (SOSIN)" is the most recent addition to the series and constitutes the flagship of the CDA's research program.

The successful completion of the SOSIN research was made possible with the generous support of various institutions and the efforts of around 200 individuals. We would like to extend our sincere thanks to all for their valuable contributions.

More than 38,000 men and women from different social backgrounds across the country shared their information, experiences and insights for this research. We express our deep gratitude to the respondents for their time and contributions in building the foundation for this research and analysis.

We express our special thanks to Prof. Sudha Tripathi, former Rector of Tribhuvan University, for giving permission to undertake this research project. Mr. Dilli Ram Uprety, the former Registrar, Prof. Dr. Shiva Lal Bhusal, Dean, Faculty of Humanities and Social Sciences, and Prof. Neelam Kumar Sharma, the ex-Executive Director of the Center of Research, Tribhuvan University deserve special thanks for their continuous support from conception to completion of the research. We would also like to extend our appreciation to Prof. Umesh Mandal, current Executive Director, Center of Research, for his passion and support.

We extend our sincere thanks to Prof. Pushpa Raj Kandel, Vice-Chairperson, National Planning Commission (NPC) for his guidance on the SOSIN research. We are deeply thankful to Mr. Min Bahadur Shahi, Member of NPC for his invaluable support to the research and his expressed commitment to utilization of the data in national planning and monitoring systems. We are grateful to the SOSIN Advisory Committee members: Ms. Mohna Ansari, National Human Rights Commission; Dr. Teertha Dhakal, Secretary, Office of the Prime Minister and Council of Ministers; Mr. Dilli Raj Joshi, Deputy Director General, Central Bureau of Statistics; Dr. Surendra Labh, Member, Policy Research Institute; Dr. Bimala Rai Poudyal, Member of Parliament; Mr. Rudra Singh Tamang, Secretary, Ministry of Federal Affairs and Local Development; and Dr. Ganesh Yonjan, social development expert and former Nepal Ambassador to Japan. These advisors provided guidance and support throughout the entire process of this study.

We are thankful to the expert reviewers Dr. Dyuti Baral, Dr. Lynn Bennett, Dr. Tone Bleie, Dr. Teertha Dhakal, Dr. Magnus Hatlebakk, Dr. David Holmberg, Dr. Sambriddhi Kharel, Dr. Kathryn S. March, Mr. Mukti Rijal, Dr. Brigitte Steinmann,

Dr. Chaitanya Subba, and Mr. Deepak Tamang for their insightful comments and suggestions which significantly helped improve the quality of the study. We express our sincere appreciation to Catherine Bollinger, Senior Gender Advisor in the USAID Asia Bureau, Kai Spratt, Senior Regional Gender Adviser at the Regional Development Mission for Asia and other experts at USAID/Nepal for their reviews and insightful suggestions on the report.

We owe gratitude to representatives of various government ministries, the National Reconstruction Authority, international development partners, civil society organizations and independent experts who participated and provided their valuable inputs over a series of consultation workshops on designing the research, analyzing the data and disseminating the results.

We would like to extend our thanks to the Nepal Health Research Council and the Ethical Review Board for review and approval of the SOSIN research.

We express our special thanks to Prof. Laya Prasad Uprety, former Head of the Central Department of Anthropology, who served as the SOSIN Project Coordinator during the first half of the research project. His support and guidance were crucial in successfully conceptualizing, designing and implementing the research. We would also like to express our appreciation for his continuous help and careful review of the reports and research papers.

This study was made possible by the generous support of the United States Agency for International Development (USAID). We would like to express our deep gratitude to Ms. Kristin Ray at USAID/Nepal for her crucial support during the early stages of conceptualization and for her endorsement of the significance of the research. Special thanks and appreciation go to Dr. Manju Thapa Tuladhar at USAID/Nepal for her encouragement and sustained pursuit of gender equality and social inclusion in Nepal over the last one-and-a-half decades. We are deeply thankful to Mr. Prakash Gnyawali for his untiring assistance and attention to meticulous detail in supporting the work. These USAID representatives' support extended from the research design phase through to technical monitoring, providing incisive reviews of the reports and coordinating with the government, international development partners and civil society organizations. USAID partners also helped resolve problems as they arose during the entire period of implementation of the project. Without their valuable support, this work would not have been successful.

Finally, our heartfelt thanks go to the field enumerators, supervisors and ethnographic field researchers who took part in collecting information, and research fellows and associates who provided inputs at various stages in the research. We thank Mera Publications for their careful editing and Dr. Dovan Rai for assistance with data visualization. Credit is due to the SOSIN statistical team who provided technical support to all research components. We also thank the staff members at the SOSIN office for taking the very important responsibility of everyday management for the work.

Dambar Chemjong, Ph.D.
Project Coordinator, SOSIN and Head of the Department
Central Department of Anthropology,
Tribhuvan University, Kathmandu

Contents

LIST OF TABLES

LIST OF FIGURES

LIST OF MAPS

Acronyms

CBS	Central Bureau of Statistics
CDA	Central Department of Anthropology
CPIU	Central Project Implementation Units
CPN	Communist Party of Nepal
DDCC	District Disaster Coordination Committee
DPIU	District Project Implementation Units
DRRMC	Disaster Risk Reduction and Management Committee
DUDBC	Department of Urban Development and Building Construction
GESI	Gender Equality and Social Inclusion
GMALIU	Grant Management and Local Infrastructure Unit
INGO	International Non-Governmental Organization
LDC	Least Developed Country
MoCA	Ministry of Culture and Aviation
MoEST	Ministry of Education Science and Technology
MoFAGA	Ministry of Federal Affairs and General Administration
MoHP	Ministry of Health and Population
MOHA	Ministry of Home Affairs
MoUD	Ministry of Urban Development
NGO	Non-Governmental Organization
NLSS	Nepal Living Standards Survey
NPC	National Planning Commission
NRA	Nepal Reconstruction Authority
NSIS	Nepal Social Inclusion Survey
PDNA	Post Disaster Needs Assessment
PDRF	Post Disaster Reconstruction Framework
PPI	Poverty Probability Index
PSU	Primary Sampling Unit
RCC	Reinforced Cement Concrete
SDG	Sustainable Development Goals
SOSIN	State of Social Inclusion in Nepal
TU	Tribhuvan University
UML	United Marxist-Leninist
UNDP	United Nations Development Programme
UNFPA	United Nations Population Fund
UNICEF	United Nations Children's Fund
USAID	United States Agency for International Development
VDC	Village Development Committee

Executive summary

Executive summary

Nepal and Disaster Vulnerability

Only ten countries in the world are more vulnerable to earthquakes than Nepal. Nepal also faces other natural disasters and hazards such as landslides and floods.

Nepal's 2015 earthquakes killed 8,970 and seriously injured 22,300 others. The earthquakes destroyed or damaged approximately 800,000 houses, and 283 settlements had to be relocated. The disaster pushed an additional 5.4 million people below the poverty line.

This study investigates community resilience capacity and recovery with emphasis on social inclusion. It is a part of larger research on the State of Social Inclusion in Nepal (SOSIN).

Research Objectives: The primary objective of this study is to contribute to the understanding of community disaster resilience in relation to social inclusion by using the 2015 earthquakes as a case study. The research intends to answer three key questions:

- What are the differential effects of the earthquakes on various social groups?
- What is the current status of recovery of those social groups and who is being left behind?
- How are resilience and wellbeing distributed among those social groups?

The study analyses the extent of disaster effects, the pace and patterns of recovery of the community, household level resilience capacity, the role of the government and non-government actors during the reconstruction, and finally the level of disaster preparedness in terms of awareness and planning. The analysis is conducted by different social groups, income levels and with a gendered lens across all groups.

Methodology: The study combined quantitative and ethnographic/qualitative methods. A survey was conducted with 3,300 households sampled in the 14 most earthquake-affected districts. Additionally, 280 qualitative interviews and ethnographic research were conducted between March 2018 and June 2019 in seven locations/districts for qualitative information.

Study Area: The study area includes the 14 districts most affected by the 2015 earthquakes: Bhaktapur, Dhading, Dolakha, Gorkha, Kathmandu, Kavrepalanchowk, Lalitpur, Makawanpur, Nuwakot, Okhaldhunga, Ramechhap, Rasuwa, Sindhuli, and Sindhupalchowk. The total population of the 14 districts is 5,340,945.

Data Analysis: Analysis is done mainly by social groups. There are 34 castes and ethnic groups that live in the 14 districts. For statistical analysis, they are categorized into eight major social groups: Brahmin (Hill), Chhetri (Hill), Dalit (Hill), Magar (Hill Janajati), Newar (Hill Janajati), Tamang (Hill Janajati), Other Hill Janajati, and others. Disaggregation of data by sex and household economic levels has also been conducted where feasible and relevant.

Major Findings:

1. The devastating 2015 earthquakes have disproportionately impacted marginalized groups in the affected districts. Over the last four years, the communities have exhibited remarkable strength in recovering from the disaster.
2. The reconstruction of houses has been partially completed. A **composite index of the recovery status** based on four primary indicators: status of house reconstruction, all three tranches of grants taken, level of per capita expenditure and overall perception of having bounced back, reveals considerable disparity.
3. Similarly, an **index of the resilience capacity** based on household economic status comprising poverty, non-dependency upon wage labor, and availability of remittance; access to education, information and technology, basic services, social capital, illness and prior awareness of disaster risk reduction shows unequal distribution of capacity across the social groups.
4. A comparison between resilience capacity and recovery status shows that there is a clear correlation between these two variables. A common pattern that emerged reveals that the higher the resilience capacity, the more likelihood of better recovery. Brahmin, Newar and Chhetri who possess higher resilience capacity had higher levels of recovery rates. Similarly, richer households had a far greater recovery rate than their poorer counterparts. The Dalit, Tamang and other hill Janjatis fall behind in terms of overall composite resilience capacity and recovery status.
5. Thus the natural calamity did not have neutral impacts. Historical social inequalities shaped the disaster's direct impacts as well as the recovery; these pre-existing inequalities often undercut the resilience capacity of communities. The earthquakes disproportionately undercut the area's poor and historically marginalized peoples.
6. Government recovery programs, though effective in some regards, was led by a top-down bureaucracy with limited stakeholder participation and inclusion in decision making. It added to the disparities.
7. Resilient and inclusive governance that combines prudent disaster risk reduction and management with meaningful engagement of affected people that respects and promotes community solidarity, is the best way forward.

Differential Effects of the Earthquakes

1. **Disparities in death.** The earthquakes took the lives of everyone: women, men, children, and elders. Among all the households 1.5 percent lost at least one family member, the majority of whom were household heads or earning family members. Among those who died 56 percent were women or girls, and 32 percent were children, with two percent more girls killed than boys. Disparities by caste and ethnicity existed. Tamangs constitute 20.7 percent of the affected area's population but 35.4 percent of those who died. Similarly, the Dalit castes -- Kami, Damai/Dhole, and Sarki -- constitute six percent of the affected region's population but 7.7 percent of those who died. The primary reasons for relatively higher deaths is that they had higher rates of poverty, less sturdy house construction, lived in locations that are more vulnerable to earthquakes, and had harder access to roads for receiving emergency care.
2. **The earthquake caused injuries and psychological trauma.** Among those who suffered, 5.6 percent, including those physically impaired, have still not recovered. Women and children faced additional difficulties during the earthquake and its aftermath; for over 67 percent, finding safe shelter was the most difficult challenge.
3. **The earthquake disproportionately hit the area's poor and historically marginalized people:** 92 percent of households experienced destruction and damage to their houses; 20 percent of the poorest households

lost most of their assets; 23.8 percent of female-headed households were affected by the earthquake. Poverty was both a cause and a consequence of the disaster.

4. **Even when the level of damage was the same, the poor were further pushed towards economic hardship.** Those people who had savings and access to sources of support - "social capital" - recovered quicker. The poor shifted their income for basic survival and reduced spending on health and education as a coping strategy. The poor also had less access to the state and external organizations, and influential people for support.
5. **Trauma:** Earthquakes spur a fear of losing one's life. The anguish and general uncertainty, the unpredictability of the next tremor, the pain of living with loss of loved ones and physical pangs shake people to their basic core. As the survivors struggle on, without access to counseling services, they live with long-lasting feelings of trauma, fear, and fragility.
6. **Community Solidarity:** Despite the grief and loss, a strong sense of mutual support and help emerged in the crisis. People struggled with fear and uncertainty but earthquakes also awakened a deep sense of solidarity among community members. Some even died in the effort to save others.

Recovery Status: Partial Recovery in terms of Shelter but Significant Problems in Livelihoods

1. **Basic house reconstruction work was partially completed.** Despite the multiple problems, some of which are ongoing, the construction of 75 percent of houses by the end of the fourth anniversary of the earthquakes was a significant achievement.
2. **Poorer families show a lower rate of house reconstruction.** As of June 2019, only 65.7 percent of poorer households had built a new house compared to 77.6 percent of richer households. In all social groups, the poorer households had completed less reconstruction than middle income and richer households.
3. **Nearly one fifth of families still live in temporary housing.** As of June 2019, 17 percent of families are still living in temporary shelters, such as mud and wood sheds with corrugated zinc roofs or part of a damaged house. This is because they lack land, the capacity to arrange labor and materials, or access the government grants. Families headed by single women, elderly or under-age children have often faced particular challenges. There is a looming danger that these families and their children may end up living permanently in temporary shelters.
4. **Two out of five families have taken high-interest loans, including three out of five Tamang families.** Over 41 percent of families took loans to supplement government grants for reconstruction. Very few found low interest loans. Instead, they were paying interest rates of 20 to 36 percent, with an average of 23 percent per annum. Almost 60 percent of Tamang households took loans. Fewer Tamangs generally receive remittance than other groups.
5. **People built mostly one or two room houses.** In the villages where ethnographic studies were conducted, about 60 percent of houses built were with two rooms and 20 percent with one-story-one-room houses. Limited financing, government deadlines, and concerns about bureaucratic hurdles shaped house size choices.
6. **Some new houses are not being used for living because they are too small.** Except for the poorest households, who lived in very small houses before the disaster, some families who built one-room houses are actually not living in them, finding the space inadequate. People continue to live in temporary shelters and partially damaged houses while they use the newly built rooms for kitchen, storage and other purposes.
7. **People rebuilt using more disaster-resistant but less traditional house designs.** The increase of earthquake-resistant houses signals a major change. Over 47 percent of households thought that their houses before the disaster were earthquake resistant, but now almost 90 percent do. This is good news.

But only 18.5 percent of the survey households felt that their new house has a traditional style with some exceptions who built traditional design houses that are earthquake resistant.

Significant Problems in Livelihood Recovery

1. **Low household per-capita expenditure shows that economic recovery is still to take place, particularly for Tamangs and Dalits.** The overall average per-capita annual household expenditure in years after the earthquake is NRs. 73,110. Over half of all Dalit and Tamang households are concentrated in the poorest two categories while most Hill Brahmin and Newar households fall within in the richer 4th and 5th quintiles. Average per-capita expenditure for Dalits is NRs. 59,418 and NRs. 64,119 for Tamangs. Per capita annual expenditures for Hill Brahmin (NR. 91,270) and Newar households (NRs. 89,148) show them in a relatively better-off situation.
2. **Food sufficiency resembles the insufficient pre-quake situation.** 70 percent of households have less than 6-months food sufficiency. There is only a slight difference compared to pre-quake levels. Food sufficiency was and remains a key challenge for families.
3. **Well-off families see improvement while poorer families see worsening conditions compared to their pre-quake lives.** When asked to compare their pre- and post-earthquake situations, including economic and social aspects, 35.7 percent of families felt that their situation had improved, 43.9 percent thought their situation was the same as before, and 20.4 percent reported that their situation had worsened.
4. **Approximately one fourth of poor families reported that their situation had worsened.** Poorer families from all social groups experienced deteriorating conditions but especially so among the historically marginalized social groups including Dalits, Tamangs, Magars and other hill Janajatis. This is also true for female headed households, among whom, 23 percent felt that their situation had worsened across all caste and ethnic groups.
5. **Significantly, the highest percentage of households (42.1%) who felt that their situation had improved are from the Dalit community,** probably because of their dire pre-earthquake conditions. Interestingly, Dalits also have a higher proportion of households (22.4%) who felt their situation had worsened compared to the pre-earthquake situation.
6. **Government efforts to assist with livelihood recovery have been very limited and mostly ineffective.** To promote economic recovery in the worst hit earthquake districts, the government and other external agencies focused primarily on trainings. Nearly half of the trainings were in masonry. Out of 3,300 households interviewed, a little over five percent of people received training and four percent of those who received training were able to utilize the skills. A slightly higher percentage of households from Dalits and hill Janajatis received the training as well as utilized the skills.

Uneven Household Resilience Capacity

1. **High likelihood of poverty for Janajati groups and Dalits:** The likelihood of poverty measured through the Poverty Probability Index (PPI) shows that in the 14 earthquake-affected districts 15.1 percent households are likely to be below the poverty line. Tamangs have the highest percentage of households (19.1%) that are likely to be below the poverty line, followed by Other Hill Janajati (17.3%), Dalits (15.9%), and Magars (15.9%). Newars have the lowest percentage of households likely to be below poverty (9.9%) followed by Brahmins (11.8%) and Chhetris (13.0%).
2. **High dependency on wage labor, particularly among marginalized groups:** Overall, 39 percent of the households depend on wage labor to supplement household income. Dalits (53.3%) have the highest percentage of households working as wage laborers, followed by other Janajati (52.0%) and Tamangs (50.0%). Hill Brahmins (17.6%) have the lowest percentage.

3. **Remittance dependence:** Overall, 41.5 percent of households have at least one family member who has left home for work, including both in and outside Nepal. Not all labor migrants are able to send money back home. Only 24.8 percent of households have reported that they have received remittances in the last episode of migration.
4. **Educational disparities:** In the 14 districts, Tamangs (32.6%) and Hill Dalits (31.6%) had the highest rates of illiteracy and lowest of higher education – completion of bachelor's degree and above, at 2.0 percent and 2.1 percent, respectively. In all social groups, women are much behind than men.
5. **Increased school drop-out rates:** Almost all groups reported a higher rate of school dropout after the earthquakes. For school-age children between 6-18 years, Dalits had the highest drop-out rate (15.2%), followed by Tamang (13.9%). The lowest drop-out rate is among Brahmins (2.9%), Chhetris (7.2%), and Newars (7.4%). Boys have a higher drop-out rate (12.6%) compared to girls (7.9%).
6. **Disparities in access to information and a growing digital divide:** Only half of all households in the affected districts currently possess a television but over 94 percent of households have at least one user of mobile phones. These rates are similar across social groups. But differences are much sharper in access to the internet. Almost 26 percent of Newars and 15.8 percent of Brahmins have internet access but only 3.8 percent of Tamang and 3.9 percent of Dalit households have internet access.
7. **Access to services varies by social group:** Overall 40 percent of households have market access within 30 minutes' walking distance - 29.5 percent to a paved road, 8.7 to a hospital, and 35.3 percent to government service centers. Tamangs and Dalits have the lowest percentage of households with such access. Among Tamangs, only 17. 9 percent of households have access to paved roads within 30 minutes' walking distance, 4.3 percent to a hospital, and 32.6 percent to government service centers. Among Dalits, 21.2 percent of households have access to a paved road within 30 minutes' walking distance, 6.6 percent to a hospital, and 35.1 percent to government service centers such as local government office, agricultural service center and others.
8. **Household demographic factors undermining resilience:** Three characteristics - female-headed households, households with persons with disabilities, and households with an absentee member - are indicators that reduce resilience capacity. Of the total number of households, there are 23.8 percent female-headed households, 6.5 percent households with persons with disabilities, and 43.7 percent with an absentee member.
9. **Dalits and Tamangs have significantly less "linking" social capital:** Linking social capital is crucial in times of crisis. Linking social capital means access to formal institutions, including the state, and connections to people with influence. Over 45 percent of Brahmin households and 41.1 percent of Newar households report knowing at least one influential person. Only 24.6 percent of Tamangs and 26.9 percent of Dalits report a link with influential people.
10. **"Bonding" and "bridging" social capital.** "Bonding" capital indicates support within the community in the form of food, cash, animals, or labor. Our research shows that 1 in 2 households provided support during reconstruction and 1 in 3 received support. Around half of those who gave or received support did so from or to relatives. "Bridging" capital is support provided or received from outside the community. Roughly 1 in 3 households either received or gave support to people outside their community.
11. **Barriers exist to obtaining legal identification:** Overall, 26.5 percent of children below five years in the surveyed families do not have a birth certificate. Additionally, 7.6 percent people aged 16 years and above currently do not have a citizenship certificate. The highest among those who do not have citizenship certificate is Dalits (12%) followed by Tamangs (9.6%) and Other Hill Janajatis (9.4%).

Success and Shortcomings of the Government Interventions

1. **The government's rescue work was appreciated by communities.** The government, especially the army and police forces, earned enthusiastic appreciation from the public for their help in rescue operations at the time of emergency. People in remote villages remember when an army team visited their village to help them with the demolition of risky and damaged structures.
2. **People have welcomed governmental initiatives to identify and provide additional support to landless, dislocated and vulnerable households.** The NRA gave additional grant support to selected landless, dislocated and households identified as vulnerable. This was an important initiative to address equity concerns in reconstruction support. A significant number of landless households were able to get ownership of homestead land. The provision of NRA grants for vulnerable people, however, has mostly been a symbolic gesture. It has not delivered the desired outcome. The criteria defined for vulnerability is narrow that excludes the region's poorest households.
3. **The government reconstruction mechanism was led by a top-down bureaucracy with limited stakeholder participation and inclusion in decision making.** The NRA, embodied centralized authority who operated through bureaucracies without inclusive mechanisms and stakeholder participation in decision making and implementation. This was a top-down model.
4. **The government chose the easiest but not most effective way to identify eligible beneficiaries.** The procedure for identification of eligible beneficiaries was determined centrally. The multiple and often contradictory eligibility identification processes created doubts about the efficiency of the government work. Lack of collaboration with local leaders increased the number of grievances and dissatisfaction.
5. **The government's piecemeal grant release and shifting deadlines led to families making smaller houses than desired.** The government provided financial grants in three tranches accompanied with stringent verification. The NRA persistently pushed the families for a faster pace for taking grants with shifting deadlines. People were rushed for reconstruction at a pace faster than they would have preferred, building with synchronizing household resource management and timing.
6. **The government's techno-financial approach to reconstruction overlooked other crucial aspects in the recovery process.** For reconstruction, the government and development partners prioritized technical input and financial grants as the main solution to reconstruction. Reconstruction requires more than techno-financial solutions. This approach overlooked participatory processes for decision making and specific needs of groups.

Differential Impact on Women and their Resilience Capacity

1. **Women and girls were disproportionately impacted by the disaster.** Overall, women and girls died and were injured at higher rates. Of those who perished, 56 percent were female (women 39%, girls 17%) and 44 percent were male (men 29%, boys 15%). Women also endured greater rates of physical injuries and psychological trauma. A common reason attributed to this was that the women happened to be inside the house at the time of the earthquakes.
2. **Women and girls' vulnerability to various forms of discrimination and gender-based violence heightened during the earthquake and its aftermath.** 87 percent of women reported problems of security and safety in the temporary shelters. Other problems encountered by the women and girls include lack of privacy, toilet and sanitation, and access to reproductive health services. Trafficking was another major challenge.
3. **The support provided by the government and external agencies in rescue, relief and recovery has taken some considerations of the specific challenges faced by women and girls.** The distribution of dignity kits containing individual packages of clothes, hygiene supplies including sanitary pads were appreciated.

Except for an emphasis on the participation of women in masonry and other trainings, there were no targeted programs for women as a special needs group. For special assistance grants, only women who were 65 years and above, heading households were included as vulnerable and eligible for additional support.

4. **Women and girls were disadvantaged and vulnerable even before the earthquake and they constitute a special needs group during disasters.** The rate of illiteracy among women (26%) is double than that of men (13%). Women's access to information is lower than men. Female-headed households comprise 23.8 percent of the total sample in this study. The likelihood of them falling below the poverty line is generally higher after such disasters.
5. **While women are more vulnerable to disasters, their capacities to respond to the stressors also show them as more resilient.** Contrary to common representation of women as mere victims of disasters, the women in the study area were not only proactive in rescuing and saving lives but also have taken responsibility to support children and other family members. The women's informal networks and communication with relatives and community members play a crucial role in forming bonding and bridging social capital. Similarly, in many instances, the women were more active in mobilizing the community members in times of needs for mutual support. These features of women's resilience capacity often remain unrecognized.

Disaster Preparedness and Management Planning

1. **Awareness on disaster risk reduction increased.** Only 15.7 percent of households were aware of disaster preparedness prior to 2015 earthquakes; now 95 percent reported that they are aware of the need for disaster preparedness.
2. **Majority of the households are confident that their new houses are earthquake resistant.** Over 62 percent of households felt confident about the earthquake safety measures taken in the building of their new houses. One-third of the households felt that they have built according to the standards set by the NRA and believe it should be safer. Only three percent of households were unsure about earthquake resistant design.
3. **Disaster Management Committees at the community levels are yet to be formed and operationalized.** Only 7.8 percent of the households are aware of the existence of disaster management committees at the local level. Disaster preparedness knowledge has increased but risk reduction and management planning at local level has not yet taken up. Over 18 percent of households in the 14 districts know about the organizations which work on disaster-related issues.

Recommendations

Based on the findings and the issues identified through this research, the study offers the following specific recommendations relevant for future policy and programs:

1. **In general, future disaster planning efforts, policies and programs should prepare for and take into account the disproportionate impacts** by social groups, gender, economic class and other vulnerabilities. Governmental and other parties should understand the historical inequities that characterize much of Nepal. They should study those in advance in each district and province, and deliver tailored and sufficient support in future relief, recovery, and reconstruction programs. Disaggregated data is a must.
2. **Provide support to the one-fifth of families still in temporary housing.** Families from poorer backgrounds who are living in temporary shelters even now are in danger of becoming permanent residents in temporary shelters. Their housing, livelihood, and social needs should be better assessed and addressed. The safety, security, and health concerns of women and girls still in temporary housing should be emphasized.
3. **Assist those who have high interest rate debts related to house reconstruction.** A better needs assessment should be conducted. Target high debt households with livelihoods improvement support.

4. **Provide design suggestions for how to improve 1- and 2-room houses.** Find ways to encourage traditional designs. Many of these houses are going underutilized or unused. There may be simple ways that houses can be altered or re-imagined to meet the needs of their owners better, while bringing back some traditional features.
5. **Intensify livelihood recovery and employment generation programs to check possible high growth in the poverty rate.** Expand the definition of vulnerable population and find a way to reach the "poorest of the poor" with special measures.
6. **Expand programs specially targeted at women and girls.** Address the distinctive vulnerabilities faced by women related to gender-based violence, safety, trafficking, and access to reproductive health services. Improve their access to education and employment. Recognize and build on the resilience capacity of women, including on social capital and community mobilization for future disaster preparedness and risk reduction.
7. **Initiate special programs for school drop-outs; create special programs for Tamangs, Dalits, and poorest of the poor students in school,** including the use of mother tongues in school education. Programs for drop-outs and at-risk students - to help them re-integrate back into schools or build marketable skills - can be implemented. Several efforts at remedial education have brought good results in other parts of the country. Research shows that early grade instruction in mother tongue languages (which can be combined with highly sought after English education) yields better education results for a vulnerable population. Education is a key resilience capacity builder in the long run.
8. **Create programs to mitigate the digital divide,** especially access to the internet for poorer and marginalized families. Access to the internet and computer skills creates economic opportunity and connection to national and global sources of useful knowledge.
9. **Create programs that are less top down.** Review the disaster risk management-related current governmental structures and programs, and better plan for future situations. Promote inclusive institutions and governance at all levels for dealing with future disasters. Create ways for more community input and participation.
10. **Create disaster risk reduction and planning awareness raising** materials in Nepali and other minority languages. Women's organizations, representative organizations and civil society could potentially partner to provide capacity building and training for women in disaster preparedness and planning.
11. **Implement community level disaster planning** efforts together with local bodies, ensuring representation of women and marginalized groups for the integration of their perceptions and experiences. Such planning should take into account other forms of disaster particularly landslides. 2015 Earthquakes have triggered perennially escalating landslides as secondary hazards in the affected mountain districts. Make data available about community-based disaster preparedness and resilience programming.

CHAPTER I

Introduction

CHAPTER 1

Introduction

1.1 Background

Nepalis have long known they lived in an earthquake zone. Earthquakes have a lethal reputation deep in public consciousness. Located along the fault line of the Indian and Eurasian plates, the Himalaya is a highly active seismic zone. Only ten countries are ranked more vulnerable to earthquakes than Nepal.[1] On 25 April 2015, a huge earthquake (7.8 magnitude) shook the country, with its epicenter northwest of Kathmandu. On 12 May 2015, a second earthquake (7.3 magnitude) hit Dolakha district, northeast of Kathmandu. Before that, the last earthquake of similar magnitude hit in 1934. In addition, few countries are as vulnerable to Nepal to other disasters and hazards. Landslides regularly tear apart hillsides and destroy fields, homes, trails and roads. We call these "natural" calamities but social-historical conditions and human action profoundly shape their outcomes.

Given this history of disasters, Nepal's citizens expect that the government, its development partners, and local authorities create strong disaster risk reduction mechanisms and inclusive recovery plans. The government passed the Disaster Risk Reduction and Management Act in 2018 to encourage systematic work on disaster risk preparedness and management activities, including reconstruction, in collaboration with local communities.

One of the central strategies put forward by the government for Nepal to graduate from Least Developed Country (LDC) by 2022 is "building resilience against the risk of natural disasters and climate change."[2] But doing so will require a deeper level of understanding of what factors shape resilience, as well as a robust system of effective disaster management.

In recent years, in part because of climate change, the development community has devoted considerable attention to the idea of resilience.[3] Academic research on resilience also has dramatically increased. As the globe is facing more and more disasters - both natural and man-made – few subjects demand more systematic research than disaster resilience.[4]

1 UNDP Bureau for Crisis Prevention and Recovery. (2004). A Global Report Reducing Disaster Risk, A Challenge for Development. New York: UNDP.

2 National Planning Commission. (2016). Envisioning Nepal 2030: Proceedings of the International Seminar. Asian Development Bank.

3 See The United Nations Transforming Our World: the 2030 Agenda for Sustainable Development, Sendai Framework for Disaster Risk Reduction 2015-2030, the Paris Agreement on Climate Change, 2015, and the World Humanitarian Summit Framework 2016.

4 Tiernan, Anne, Lex Drennan, Johanna Nalau, Esther Onyango, Lochlan Morrissey, and Brendan Mackey. (2019) "A Review of Themes in Disaster Resilience Literature and International Practice since 2012." Policy Design and Practice 2, no. 1 (January 2, 2019): 53–74. https://doi.org/10.1080/25741292.2018.1507240.

This study is a part of larger research on the State of Social Inclusion in Nepal (SOSIN)[5] and examines community resilience capacity and recovery with emphasis on social inclusion. It aims to contribute to our understanding of disaster resilience by examining Nepal's 2015 earthquake. More specifically, this study provides empirical data on disaster effect, recovery, and resilience in the 14 most affected districts. Resilience in this study is defined, broadly, as people's capacity to avoid or minimize the negative impact of a disaster and overcome adversity to be able to recover and return to their normal lives.

This study follows the idea that natural calamities are not necessarily disastrous. A disaster is social -- a family's location in the social structure, power hierarchy, and access to various forms of economic and social capital shape their capacity to anticipate and respond. Nearly all natural calamities have a differential impact on households and communities. While some people and communities are better placed to avoid risk and minimize damage, others are not. Similarly, even when all households endure an equal level of damage, some families and communities can recover rapidly while others, facing additional challenges, lag behind. Thus, resilience is socially generated and distributed unequally. This study will help identify who is falling behind and why.

This study employed a mixed-method approach combining quantitative survey and qualitative research. It includes a household survey of adult respondents from 3,300 households in 14 districts. This quantitative survey is supplemented with an in-depth ethnographic study in seven locations within the earthquake-affected districts.

The survey took place during the fifth year of reconstruction work in May-June 2019, which was still underway. As the research was being conducted, overall development policies in Nepal were also being oriented towards building resilience at local, sub-national and national levels.

The study results can help illuminate the factors that influence the differential disaster impact on communities, their preparedness, and their resilience capacity. It creates baseline data for 14 districts for monitoring further changes. The study findings should help planners and policymakers make sound decisions about disaster preparedness, response, and rebuilding, and help social science researchers better understand the processes concerning shocks and stressors.

1.2 Research objectives

The primary objective of this study is to contribute to the understanding of community disaster resilience in relation to social inclusion by using the 2015 earthquakes as a case study. The research analyses the extent of disaster effects, the pace and patterns of recovery work, and community resilience capacity by different social groups and intends to answer three key questions:

- What are the differential effects of the disaster on various social groups?
- What is the current status of recovery of those social groups and who is being left behind?
- How are resilience and wellbeing distributed among those social groups?

5 The other three components of SOSIN include "Nepal Social Inclusion Survey (NSIS)," a national sample survey that presents data and analysis disaggregated by sex, social groups, and 88 distinct caste and ethnic groups. The second is a study on "Who Are Left Behind?" which presents sex, caste and ethnicity disaggregated data from the NSIS 2018 on selected Sustainable Development Goals (SDGs) indicators. The third study on "State of Inclusive Governance in Nepal" that examines the current state of governance policies, practices and hindrances to inclusion.

1.3 Methodology

The study combines quantitative and ethnographic/qualitative methods. Based on our research questions, research instruments and checklists were designed. A survey was conducted in 14 earthquake-affected districts for quantitative data collection. The qualitative information came primarily from an in-depth ethnographic study conducted in seven locations within the affected districts.

Quantitative Survey

For quantitative data, the Community Resilience Survey (CRS 2019) - a standardized household survey - was conducted during May-June 2019. The 2015 earthquakes and their aftershocks affected 31 districts, with different degrees of severity. Among those districts, the government classified 14 districts as "most affected," and 17 as "less affected." This study examined 14 "most affected" districts: Bhaktapur, Dhading, Dolakha, Gorkha, Kathmandu, Kavrepalanchowk, Lalitpur, Makawanpur, Nuwakot, Okhaldhunga, Ramechhap, Rasuwa, Sindhuli, and Sindhupalchowk. The total population of most earthquake affected districts according to census 2011 is 5,368,513 (Table 1.1).[6]

Table 1.1: Population of earthquake affected districts by social group, 2011

Districts	Social Groups										Total	Percent
	Tamang (Hill Janajati)	Chhetri (Hill)	Newar (Hill Janajati)	Brahmin (Hill)	Hill Janajati (Other)	Dalit (Hill)	Magar (Hill Janajati)	Gurung	Madeshi Caste	Other		
Bhaktapur	27,249	65,379	138,873	43,353	7,280	6,385	6,839	1,671	3,856	3,766	**304,651**	5.7
Dhading	74,239	56,023	31,587	50,346	29,860	39,201	28,644	18,632	6,053	1,482	**336,067**	6.3
Dolakha	31,307	63,997	17,498	17,159	35,382	16,297	3,076	1,024	590	227	**186,557**	3.5
Gorkha	13,339	35,021	21,054	41,229	19,297	44,208	31,390	53,342	8,722	3,459	**271,061**	5.0
Kathmandu	192,311	378,924	383,136	410,126	102,710	47,309	70,083	45,784	50,937	62,920	**1,744,240**	32.5
Kavrepalanchok	129,913	58,823	50,670	82,246	18,741	23,109	14,572	1,171	1,702	990	**381,937**	7.1
Lalitpur	61,368	93,220	155,604	61,060	29,125	13,156	21,934	5,994	14,414	12,257	**468,132**	8.7
Makwanpur	201,081	48,299	26,065	59,253	35,719	17,706	18,945	2,879	6,791	3,739	**420,477**	7.8
Nuwakot	118,873	37,555	20,655	52,564	14,589	19,402	6,388	2,868	3,519	1,058	**277,471**	5.2
Okhaldhunga	14,400	34,897	9,684	15,692	36,233	15,358	16,588	2,389	1,807	936	**147,984**	2.8
Ramechhap	38,842	56,139	29,377	9,820	26,663	17,948	22,544	295	743	275	**202,646**	3.8
Rasuwa	29,782	1,139	1,012	6,525	1,296	1,353	571	1,335	210	77	**43,300**	0.8
Sindhuli	79,590	43,820	18,602	23,077	46,895	33,402	44,146	508	5,464	688	**296,192**	5.5
Sindhupalchok	98,570	63,522	31,977	29,725	33,510	21,248	4,912	2,930	772	632	**287,798**	5.4
Total	**1,110,864**	**1,036,758**	**935,794**	**902,175**	**437,300**	**316,082**	**290,632**	**140,822**	**105,580**	**92,506**	**5,368,513**	100.0
Percent	20.7	19.3	17.4	16.8	8.1	5.9	5.4	2.6	2.0	1.7	100.0	

Source: *Central Bureau of Statistics, 2011*

6 CBS. (2014). National Population and Housing Census 2011 Social Characteristics Tables. Kathmandu: Central Bureau of Statistics, National Planning Commission, Government of Nepal.

For a sampling frame for the survey, CRS 2019 used the list of beneficiary households in the 14 most earthquake-affected districts prepared by the Nepal Reconstruction Authority (NRA). Out of 1,036,568 households that it surveyed, the NRA identified 816,564 as eligible for grants.[7] The CRS 2019's Primary Sampling Unit (PSU) is the ward[8] of what before the 2015 Constitution was called a Village Development Committee (VDC); if a ward had more than 100 beneficiary households, the sub-ward was used. 3,300 households were selected from 220 clusters covering 124 VDCs in the 14 districts. Each sample cluster/PSU comprised 15 households. The sample size is determined at a confidence level of 95 percent, a power value of 80 percent, and an effect size of 0.08, along with a design effect of 2.4 and a non-response rate of 10 percent. A detailed description of the survey design and methodology is provided in Annex I.

Table1.2: Distribution of sample households by social group, CRS 2019

Social Group	Caste/ethnic groups in 14 Earthquake affected districts in the sample	Sample Households	
		Total	Percent
Brahmin (Hill)	Hill Brahmin [1]	404	12.2
Chhetri (Hill)	Chhetri, Thakuri and Sanyasi/ Dasnami, Baniya [4]	728	22.1
Dalit (Hill)	Damai/Dholi, Kami, Sarki [3]	259	7.8
Magar (Hill Janajati)	Magar [1]	181	5.5
Newar (Hill Janajati)	Newar [1]	413	12.5
Tamang (Hill Janajati)	Tamang [1]	938	28.4
Hill Janajati (Other)	Baramu/Brahmu, Byasi, Chepang/Praja, Danuwar, Gharti/Bhujel, Gurung, Hayu, Jirel, Kumal, Majhi, Pahari, Rai, Sherpa, Sunuwar, Thami, Hyolmo and other Adivasi/Janajati [17]	354	10.7
Other	Kumhar, Lohar, Mallah, Musahar, Muslim, Sonar and Others [7]	23	0.7
Total		**3,300**	**100**

The caste and ethnic distribution in the sampled households in the study roughly reflected the area's social diversity.[9] 34 castes and ethnic groups live in the study districts. For statistical analysis, they are categorized into eight major social groups: Brahmin (Hill), Chhetri (Hill), Dalit (Hill), Magar (Hill), Janajati, Newar (Hill Janajati), Tamang (Hill Janajati), Other Hill Janajati, and others (Table 1.2).

Stata SE version 13.0 was used to analyze the quantitative data. Results are presented in the form of simple bivariate descriptive statistics such as percentages and mean scores. Summaries of bivariate analysis are presented in figures and tables. More complex statistical analysis such as indexing of multiple variables for

7 As of December 11, 2019. http://www.nra.gov.np/en/mapdistrict/datavisualization

8 A 'ward' is the smallest administrative unit in Nepal.

9 Gurung, H. B. (1998). Nepal Social Demography and Expressions. Kathmandu: New ERA.

Caste groups refers to the stratified social groups characterized by vertical hierarchy based on the notion of ritual purity and pollution, who generally follow Hindu religion, and speak Indo-Aryan languages. Hill Brahman, Chhetri, Madhesi caste groups as well as artisan communities referred to as Dalit fall in this category. Ethnic groups on the other hand are those outside the Hindu caste fold with distinctive culture, tradition and languages referred to as Adivasi Janajati or Indigenous Nationalities. Adivasi Janajati largely follow Buddhism, shamanism and other folk religions, speak Tibeto-Burman languages and generally belong to the Mongoloid group. The Constitution of Nepal 2015 identified Hill Brahman Chhetri including Dasnami as "Khas Arya" and recognizes Dalit, Adivasi Janajati, Madhesi, Muslim and minority social categories.

composing indexes, cross-tabulation and multivariate analysis has not been carried out. Data are presented under the sections of disaster effect, recovery, resilience capacity, external support, and disaster preparedness.

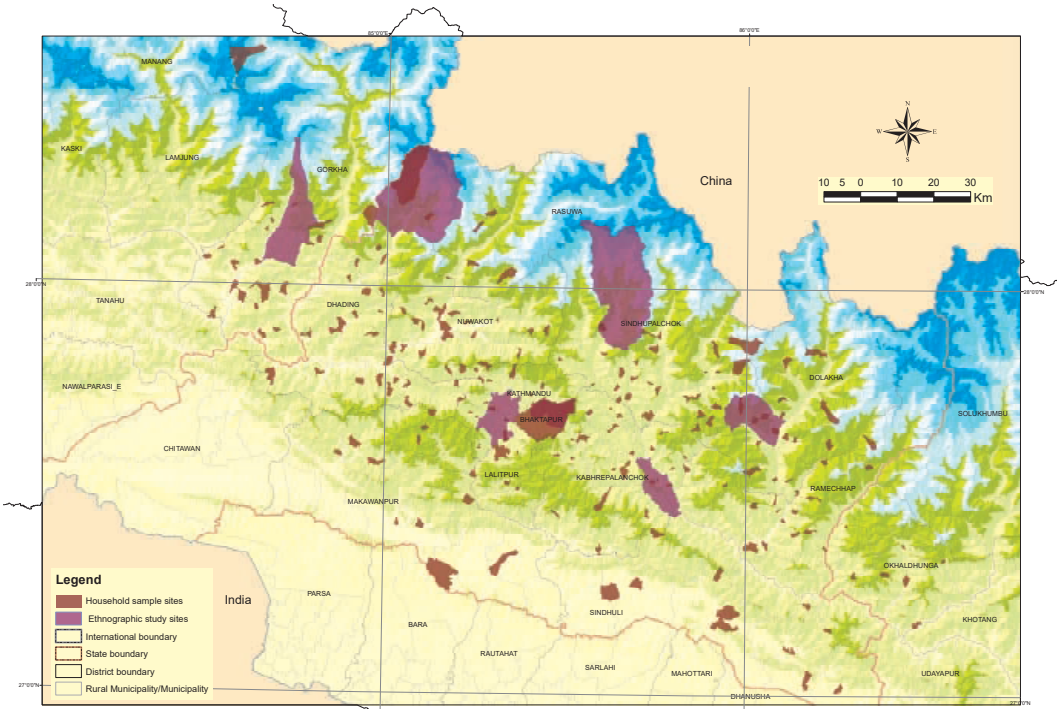
Ethnographic/Qualitative Study

Ethnographic fieldwork was carried out between March 2018 and June 2019 in order to complement the quantitative study, as well as to get an in-depth understanding of the disaster impact, reconstruction processes, and resilience. Seven Ethnographic Field Researchers spent a total of four months in different locations in the selected districts (Annex 2). Ethnographic study locations were selected to cover caste-ethnic and cultural dimensions as well as to capture the urban-rural differences. The Researchers worked in the following locations:

- Barpak Sulikot Gaunpalika (Gorkha district),
- Bhimeshor Nagarpalika (Dolakha district),
- Changu Narayan Nagarpalika (Bhaktapur district),
- Kathmandu Metropolitan City (Kathmandu district)
- Ruby Valley Gaunpalika (Dhading district)
- Temal Gaunpalika (Kavre Palanchowk district), and
- Thangpal Gaunpalika (Sindhupalchok district),

Field Researchers conducted "participant observation" and used a checklist for key informant interviews. The Field Researchers conducted 40 in-depth key informant interviews each, for a total of 280 interviews. The ethnographers

Map 1: Community Resilience Survey 2019- Sample Locations and Ethnographic Field Research Sites



Source: Administrative boundary, Survey Department, Government of Nepal 1996. DEM ASTER, NASA, 2010 and Household and Ethnography information, 2018

produced a detailed field observation note for each participant, including activities and observations. The Principal Researcher, in addition to supervising the field ethnographic researchers, conducted visits to all affected districts and carried interviews with community members, political leaders, NRA and government officials as well as from international development agency and Non-Governmental Organizations (NGOs) representatives involved in reconstruction works. The data collected included narratives of shock experience, immediate responses, and recovery processes in the context of community and larger institutional processes. The qualitative data recorded in field notes and interview transcriptions were analyzed to identify key themes and emerging patterns.

Content analysis was the key method employed for identifying themes and emerging patterns regarding peoples' experience of shock, response, and recovery. Individual, household, and community narratives from the earthquake in 2015 to the current moment were analyzed to understand the process. The qualitative data was used for contextualizing, interpreting and elaborating the quantitative data as well as to generate additional insights on the process.

All together 70 people worked as field researchers in data collection. They include enumerators, research assistants and ethnographic field researchers. For the CRS 2019, 13 teams were deployed in the field. Each team consisted of four field researchers, composed of three interviewers and a team supervisor. The team supervisor was responsible for team coordination, liaising with the community and other stakeholders and monitoring of data collection within the team during the field survey. There were five research assistants (RA) assigned for quality control of the data collection (Annex 2). The main responsibilities of RAs included monitoring and supervision through spot checking of field data collection. Each RA was assigned three field teams. Map 1 shows the location of survey and ethnographic field study sites.

1.4 Conceptual framework for studying resilience

Scholars and practitioners have conceptualized resilience in various ways depending upon discipline and context. Resilience was first conceptualized in the physical sciences[10] and ecologists have adopted the concept to study ecological systems.[11] Resilience in social science is mainly used in socio-ecological systems,[12] psychology[13] and social-anthropological studies.[14] Resilience is now widely used in various sectors from climate change adaptation, conflict management, and economics to disaster management and development. This study draws mostly from disaster management and development contexts.

10 Early research considered resilience largely to denote the characteristics that make materials or a system return to a state of equilibrium following exposure to some kind of stress (Norris et al. 2008, Gordon 1978). See Gordon, J. E. (1978). Structures: Or Why Things Don't Fall Down. Harmondsworth, U.K.: Penguin Books. and Norris, Fran H., Susan P. Stevens, Betty Pfefferbaum, Karen F. Whiche, and Rose L. Pfefferbaum (2008). Community Resilience as a Metaphor, Theory, and Strategy for Disaster Readiness. American Journal of Community Psychology 41(1–2):127–150.

11 Holling (1973) defines resilience as "a buffer capacity or the ability of a system to absorb perturbation or the magnitude of the disturbance that can be absorbed before a system changes its structure by changing the variables." See Holling, Crawford S. (1973). Resilience and Stability of Ecological Systems. Annual Review of Ecology and Systematics 4:1–23.

12 Adger, N. W. (2000). Social and Ecological Resilience: Are they Related? Progress in Human Geography, 24, 3.

13 Bonanno, G. A., et al. (2002). Resilience to Loss and Chronic Grief: A Prospective Study from Preloss to 18-months Postloss. Journal of Personality and Social Psychology 83:1150–1164.

14 Barrios, Roberto E. (2016). Resilience: A Commentary From the Vantage Point of Anthropology. Annals of Anthropological Practice 40(1):28–38. See also Hoffman, Susanna M. (1999). The worst of times, the best of times: Towards a model of cultural response to disaster. In Oliver-Smith, Anthony and Susanna Hoffman, eds. (1999). The Angry Earth: Disasters in Anthropological Perspective. Pp. 134-155. New York: Routledge.

In particular, this study uses the concept and framework advanced by Cutter (2010)[15] and Burton (2015)[16] along with a toolkit for community resilience measurement developed by the Torrens Resilience Institute (2015) as reference.[17] These frameworks use a definition compatible with the definition synthesized by the Hyogo Framework for Action 2005–2015: "the ability of a system, community or society exposed to hazards to resist, absorb, accommodate to and recover from the effects of a hazard in a timely and efficient manner, including through the preservation and restoration of its essential basic structures and functions."[18]

But resilience is not merely the ability to survive but to thrive under changed circumstances. Beyond the initial damage they do, disasters create lingering disruptions in normal life and interrupt the life-sustaining functions of social systems. This means that disaster, in many ways, alters the existing social situation. Society as a dynamic system, rather than "bouncing back" moves forward in new situations. In this context as well in the view of development interventions, resilience capacity should be understood as "bouncing back better" or "bouncing forward" through inclusive growth and participatory processes.

Disaster studies often are preoccupied with a focus on incidents of natural calamities or hazards. Disaster, however, is a social phenomenon caused by natural calamities that themselves sometimes have social origins.[19] The social nature of disasters can be seen in the differential consequences for individuals and communities, depending upon "their capacities to anticipate, cope with, resist and recover from the natural disaster."[20] As disasters are not neutral; they can have a disproportionately negative impact on a society's marginalized groups.[21] Recent studies indicate that, after the 2015 earthquakes, marginalized groups had to endure greater suffering given the unequal societal structure.[22] Drawing from past research including an analysis done in the Nepal context[23], this study adopts the social group as the primary analytical category and presents analysis by gender and other socio-economic variables when relevant.

Resilience paradigms that focus solely on internal community capacity lay too much responsibility for the effects of disaster and recovery on affected communities. These approaches divert attention away from root causes, including national and global interconnections that contribute to the causes of the disaster itself. In doing so, resilience paradigms can "naturalize" social relations and "reproduce the wider social and spatial relations which

15 Cutter, S.L., Burton, C.G., Emrich, C.T. (2010). Disaster Resilience Indicators for Benchmarking Baseline Conditions. Journal of Homeland Security and Emergency Management 7. https://doi.org/10.2202/1547-7355.1732.

16 Burton, C.G. (2015). A Validation of Metrics for Community Resilience to Natural Hazards and Disasters Using the Recovery from Hurricane Katrina as a Case Study. Annals of the Association of American Geographers 105, 67–86. https://doi.org/10.1080/00045608.2014.960039.

17 Torrens Resilience Institute (2015) Toolkit for Measuring Community Disaster Resilience.

18 United Nations Office for Disaster Risk Reduction (UNISDR), 2009. The USAID defines resilience as "the ability of people, households, communities, countries, and systems to mitigate, adapt to, and recover from shocks and stresses in a manner that reduces chronic vulnerability and facilitates inclusive growth." USAID, Building Resilience to Recurrent Crisis: USAID Policy and Program Guidance, (Washington, D.C.: USAID, December 2012), https://www.usaid.gov/sites/default/files/documents/1870/USAIDResiliencePolicyGuidanceDocument.pdf.

19 Robertson, T. 2017. 'Unnatural disasters', My Republica. Available from: https://myrepublica.nagariknetwork.com/news/unnatural-disasters/. [October 15, 2017].

20 Wisner, B., Blaikie, P., Cannon, T., & Davis, I. (2004). At risk: Natural Hazards, People's Vulnerability, and Disaster (2nd ed.). London: Routledge.

21 Morrow, Betty Hearn (2008). Community Resilience: A Social Justice Perspective. CAARI Research Report 4.

22 Amnesty International. (2017). Building Inequality: The Failure of the Nepali Government to Protect the Marginalized in Post-earthquake Reconstruction Efforts. London: Amnesty International. Also see Petryniak, O., Kurtz, J., and Frischknecht, S. (2015). What Next for Nepal? Evidence of What Matters for Building Resilience After the Gorkha Earthquake. Washington, DC: Mercy Corps.

23 Aksha, S.K., Juran, L., Resler, L.M., Zhang, Y., (2019). An Analysis of Social Vulnerability to Natural Hazards in Nepal Using a Modified Social Vulnerability Index. International Journal of Disaster Risk Science. https://doi.org/10.1007/s13753-018-0192-7.

generate turbulence and inequality."[24] Furthermore, social practices and development policies can "enhance the destructive capacities of the geophysical phenomenon and inequitably distribute a disaster's effects."[25] Anthropological studies have stressed examining the wider macro-political economic context, as well as cultural and historical-structural dimensions,[26] without putting success and failure burden on victims.

This study emphasizes resilience as a combination of capacities -- the ability of a system "to absolve, deflect, or resist potential disaster impacts and the ability to bounce back after being impacted."[27] These capacities encompass access to financial, human and social capital, as well as the strategic deployment of this capital in anticipating, preparing, adapting and transforming the post-impact situation. Resilience as capacity largely depends upon the historical, structural and social-political shaping of household and community wellbeing. These dimensions are also captured by vulnerability frameworks and they overlap and complement the resilience framework adopted in this study.[28]

In order to assess resilience capacity, several indicators were selected based on a literature review[29] and suitability in the Nepali context.[30] The indicators adopted include indices used in the social vulnerability framework[31] and in disaster resilience. This study's indicators measure: 1) economic resources, 2) education, 3) access to information and communication technology, 4) access to services, 5) family demographic characteristics, 6) social capital, and 7) legal identification. As part of this:

1. Economic resources include household employment, remittance, and poverty.
2. Household educational level is used as a proxy indicator for the capacity to prepare for and deal with disaster situations. A higher level of education is crucial for higher efficiency and productivity during recovery.
3. Access to information and communication technologies such as telephone, television, and internet is similarly vital for absorbing and adapting to threats.
4. Access to basic services includes walking distance to paved roads, market, hospital, and government service centers which are critical in emergency as well as in the recovery process.

---

24 MacKinnon, Danny, and Kate Driscoll Derickson (2013). From Resilience to Resourcefulness: A Critique of Resilience Policy and Activism. Progress in Human Geography 37(2): 253–270. Pp. 254.

25 Barrios, Roberto. 2016. Resilience: A Commentary from the Vantage Point of Anthropology. Annals of Anthropological Practice. Pp. 32. Vol. 40(1): 28-38.

26 Oliver-Smith, Anthony, and Susanna Hoffman, eds. (1999). The Angry Earth: Disasters in Anthropological Perspective. New York: Routledge.

27 Peacock, W. G., ed. 2010. Advancing the Resilience of Coastal Localities: Developing, Implementing and Sustaining the Use of Coastal Resilience Indicators: A Final Report. Prepared for the Coastal Services Center and The National Oceanic and Atmospheric Administration under Cooperative Agreement Award No. NA07NOS4730147. p. 7. http://hrrc.arch.tamu.edu/media/cms_page_media/558/10-02R.pdf.

28 Miller, F., H. Osbahr, E. Boyd, F. Thomalla, S. Bharwani, G. Ziervogel, B. Walker, J. Birkmann, S. Van der Leeuw, J. Rockström, J. Hinkel, T. Downing, C. Folke, and D. Nelson (2010). Resilience and vulnerability: complementary or conflicting concepts?. Ecology and Society 15(3): 11. [online] URL: http://www.ecologyandsociety.org/vol15/iss3/art11/. Resilience frameworks and social vulnerability frameworks, in our understanding, overlap and complement each other. They have different emphases. Resilience draws on systems thinking in understanding dynamic social-ecological relations while vulnerability frameworks stress on stake-holder centered analysis. But both are concerned with understanding the distribution of capacities and the response of systems and actors to shocks and surprises, as well as gradual changes. Both approaches, however, also have potential pitfalls. Resilience often runs the risk of being depoliticized in nature, supporting the status quo of the system, while vulnerability has the risk of over concentration on victimhood and passivity. The integration of the two types of approaches should allow a more complete analysis of joint social and system dynamics.

29 Cutter, S.L., Burton, C.G., Emrich, C.T., 2010. Disaster Resilience Indicators for Benchmarking Baseline Conditions. Journal of Homeland Security and Emergency Management 7. https://doi.org/10.2202/15477355.1732. See also Frankenberger, T. and Nelson, S. 2013. Summary of the Expert Consultation on Resilience Measurement for Food Security, TANGO International. Available at: https://agrilinks.org/library/summary-expert-consultation-resilience-measurement-food-security.

30 Aksha, S.K., Juran, L., Resler, L.M., Zhang, Y., 2019. An Analysis of Social Vulnerability to Natural Hazards in Nepal Using a Modified Social Vulnerability Index. International Journal of Disaster Risk Science. https://doi.org/10.1007/s13753-018-0192-7

31 Thomas, Deborah, Brenda D. Phillips, William E. Lovekamp, and Alice Fothergill (eds.). 2013, Social Vulnerability to Disasters, Second Edition, (33-56). Boca Raton: CRC Press.

5. Household demographic characteristics include absentee family members, family members with disability, and women headed families which potentially have negative impact on resilience.
6. Social capital includes a support network within the community (bonding), support network outside the community (bridging), and access to influential people (linking capital).
7. Legal identification is a gateway to get recognition by and access to the state service provisions. It begins with a birth certificate and a citizenship certificate serves as the primary legal identification in Nepal.

As the state and external support plays a crucial role in building household and community resilience as well as resilience of the larger system, assessment of the role of the government and non-government during the reconstruction is also being made. Finally, the current state of disaster preparedness in terms of awareness and planning is included in the analysis.

1.5 Ethical considerations

In order to respect and protect respondent's rights, dignity, and privacy, the research followed a standard protocol on ethical considerations. The study followed guidelines provided by Nepal Statistical Act 2015 and Tribhuvan University Regulations 2072 (V.S.). The SOSIN research obtained approval from the Ethical Review Board of the Nepal Health Research Council. The review was aimed to ensure respect and protect the people's right, and privacy as well as to ensure that there is no physical and psychological harm against human subjects.

A verbal prior informed consent was taken from each respondent by informing them about their right to voluntarily respond or withdraw from interview. The study collected data from individual on their views, perceptions and personal life experiences. Some of the information were more sensitive in nature, including those on reproductive health, illness and experiences of violence. In order to protect the privacy and ensure no harm, all personally identifiable information is being removed.

1.6 Limitations of the study

Given the need to delimit the scope and in view of feasibility, only selected indicators for resilience were used. Other relevant indicators for measuring resilience were not possible to include in this study, such as the prevalence of caste and ethnic identity-based discrimination, minority status, and non-proficiency in Nepali. Similarly, issues of inclusive government institutions and service quality are important for system resilience. The quality of physical structures, such as private houses, public buildings, physical infrastructure as well as environmental resource availability, protected land, and natural resources are also important indicators not included here. Similarly, a separate study is needed to understand the challenges faced by people displaced, relocated and affected by earthquake geo-hazards.

Further analysis of the data to assess how resilience capacity impacts recovery and wellbeing, as well as to see interlinkages between multiple variables, has not been conducted at this point. Such analysis would be necessary for a deeper understanding of the underlying complexities of relationship between resilience capacity and recovery. The data on resilience capacity presented in the report can mainly serve as a baseline for future assessments of disaster preparedness, impact and recovery.

Ethnographic field research was conducted only in selected locations and could not cover all social groups and areas. At times, getting information from in-depth interviews was challenging as the respondents may have felt they had to re-live the trauma or did not like to remember it. Despite this, a comprehensive set of data was collected through interviews capturing multiple dimensions of experiences during the earthquakes and their aftermath. Nevertheless, only a syntheses of the rich ethnographic data, not detailed descriptions and vignettes, could be included in this report.

CHAPTER 2

The 2015 Earthquakes and Their Aftermath: A Synopsis

CHAPTER 2

The 2015 Earthquakes and Their Aftermath: A Synopsis

On 25 April 2015, a 7.8 magnitude earthquake shook the earth violently in Nepal's central mountains. Gorkha district, northwest of Kathmandu, was the epicenter. Seventeen days later, on 12 May 2015, a 7.3 magnitude earthquake hit Dolakha district, around 140 km east of the Gorkha epicenter. Aftershocks repeatedly hit the mountains. During the following year, 459 aftershocks with a magnitude greater than 4 occurred.[32] Each shaking of the ground added to a sense of vulnerability. Scientists forecast that there are others to come.[33]

The 2015 earthquakes hit 31 districts in the central mountains, out of which 14 were highly affected (Map 2). In places, the earthquake also triggered landslides, avalanches, and floods.[34] The destruction was devastating.

The earthquakes killed and injured people and destroyed physical infrastructure -- houses, animal sheds, cultural monuments, community buildings, irrigation canals, and land. According to the Nepal Reconstruction Authority (NRA), 8,970 lives were lost and 22,300 people were seriously injured.[35] In total, the earthquakes destroyed or damaged approximately 800,000 houses. A geological survey identified 136 settlements needing relocation. An estimated 750 cultural heritage sites and 1,200 monasteries were damaged, as well as 8,680 school buildings and 1,197 health institutions. The government estimated that the disaster pushed an additional 5.4 million people below the poverty line.[36]

The earthquakes frightened and traumatized people. Survivors felt grief for the losses and a sense of uncertainty and fragility of existence. Amidst this, the survivors worked collectively to rescue people, organize funerals for the dead, and take care of the injured. They camped in farm terraces and open spaces and lived in very close quarters for several weeks. Later they moved to tents for interim shelter. Through the monsoon from June to early October, most families lived in tents, struggling with storms, rain, and related health hazards. They endured the 2015 winter in tents or temporary shelters, roofed with zinc sheets or leafy materials. Despite the risk of collapse, some families moved back to their damaged houses. In general, house reconstruction only started after two years, at the beginning of 2017.

32 https://www.usgs.gov/

33. Bilham, Roger. (2020) Himalayan Earthquakes: a Review of Historical Seismicity and Early 21st-Century Slip Potential. Cooperative Institute for Research in Environmental Sciences at the University of Colorado Boulder. http://sp.lyellcollection.org/ accessed on January 2020.

34 Jack G. Williams, Nick J. Rosser, Mark E. Kincey, Jessica Benjamin, Katie J. Oven, Alexander L. Densmore, David G. Milledge, Tom R. Robinson, Colm A. Jordan, and Tom A. Dijkstra. (2018). Satellite-based Emergency Mapping using Optical Imagery: Experience and Reflections from the 2015 Nepal Earthquakes. Natural Hazards and Earth System Sciences, Volume 18, Pp. 185–205.

35 Rastriya Punnirman Pradhikaran, (2075 BS), Aarthik Barsha 2074/75 ko Barshik Pratibedan (National Reconstruction Authority, [2018] Annual Progress Report of Fiscal Year 2017/2018. Kathmandu: Government of Nepal.)

36 Post Disaster Needs Assessment (PDNA). National Planning Commission, 2015.

People responded to the disaster drawing on inner resources and mutual support. A widow in Sindhupalchowk district recalls "My son was in Banepa for labor work in construction during the earthquake. I survived because luckily as I was herding goat at that time. But my heart sank with worries about my son. Three days later, I learned from his village friend that his left leg was broken. A wall fell down while he was running to escape. His friend had taken my son to the hospital. I lost everything in my destroyed house. But neighbors gave me food and helped build temporary shelter. Later, my father came to help me from afar to work on reconstruction of the house. Our community forestry committee was kind to provide me with necessary wood for the house." To deal with post-earthquake difficulties, families relied upon their community networks for labor, cash, and goods. Those with limited savings diverted their resources to meet the need for shelter, food, and clothing. Women and men worked long hours to arrange temporary shelters for sleeping and cooking, to provide for animals, and to recover grains and materials from the rubble. Some high school children dropped out of school to work at home or to migrate to cities for employment. Those who could migrate, often left the village to find work in or outside of the country.

At first, rescue efforts took top priority. Smartly, Nepal's government mobilized the army and police. Even in remote areas, local people remember the contributions of security personnel in the weeks and months after the quakes. Security forces pulled out the injured and dead from collapsing structures and rubble, rescued others in need, and helped communities to demolish dangerous structures. Security forces under the Ministry of Home Affairs were the first agency to collect information on death and damage.

The distribution of relief materials to victims started simultaneously with the rescue work. Unlike the rescue effort, the relief distribution was characterized by uncoordinated efforts with inequitable distribution, which created dissatisfaction among communities and local leaders.

Relief materials primarily included tarpaulin sheets, essential food items, blankets, bedding and other supplies. Multiple donor agencies, INGOs/NGOs, religious institutions, private organizations and individuals helped with relief collection and distribution. Because there was no coordination mechanism to identify needy areas, materials were distributed haphazardly according to each organization's own assessment of accessibility, connection, and allegiances. Efforts were made to coordinate the distribution of relief materials received in the districts through the Nepal Army and District Disaster Management Committees. Nevertheless, huge quantities of the relief materials stored in the godown remained undistributed even after the fifth year.[37]

Conducted through the National Planning Commission (NPC) with the help of international donor agencies, the June 2015 Post Disaster Needs Assessment (PDNA) provided a swift and comprehensive picture of the damage in all sectors and an estimate of recovery needs. At a donor conference held on 25th June 2015, the international donor community, including the World Bank[38], the Asian Development Bank, and countries such as India, China, and Japan, pledged US $4.4 billion, roughly two-thirds of the total amount needed for reconstruction. Longer-term recovery work at the grassroots, however, took much longer than what local people expected.

The government took approximately a year to create a legal mandate for reconstruction. Only in December 2015 did the parliament pass legislation to establish the National Reconstruction Authority (NRA). Because of

37 Bhatta, T. P. (2020). 'Relief materials donated during 2015 earthquake rotting away in godown'. The Kathmandu Post. Available from: https://kathmandupost.com/2/2020/03/18/relief-materials-donated-during-2015-earthquake-rotting-away-in-godown. [May 18, 2020].

38 The World Bank approved a loan of US$ 200 million for housing reconstruction on June 29, 2015 and additional $300 million on December 15, 2017. https://www.worldbank.org/en/country/nepal/brief/fact-sheet-world-bank-doing-nepal-after-earthquake

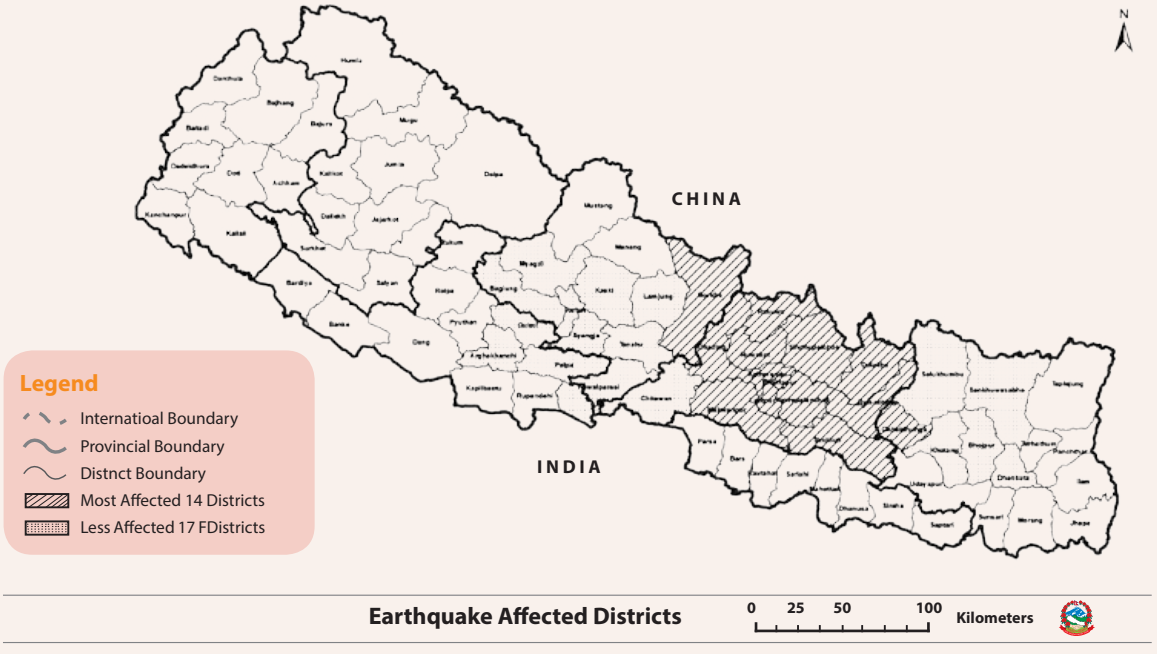
disagreements between political parties, it took several months to appoint officials in the new agency, including the NRA's chief executive officer. The NRA was given sole authority for reconstruction and worked with five other concerned ministries: Ministry of Federal Affairs and General Administration (MoFAGA), Ministry of Urban Development (MoUD), Ministry of Education, Science and Technology (MoEST), Ministry of Health and Population (MoHP) and Ministry of Culture and Aviation (MoCA).

In 2016, after the necessary policies and guidelines were finalized, the NRA announced programs to support private house reconstruction. The "owner-driven" support envisaged in the reconstruction support plan provided a total of NRs. 300,000 to house owners in three installments. Owners had to pick one of the design options the NRA provided. Over the next five years, the NRA identified eligible beneficiaries, signed grant agreements, and released the payment tranches after the construction work was verified by its approximately 2,500 engineers and overseers. In June 2019, after four years, the NRA reported to have completed 83 percent of the reconstruction work.

The task of reconstruction support was led by NRA along with other government agencies. It was centrally designed and bureaucratically administered. The government provided technological options and financial grants for reconstruction without much of people's participation in decision making and dialogue.

In 2015, when the earthquakes hit, Nepal was midstream in a long, complicated political transition. After the 2006 peace agreement that ended a decade-long violent political conflict, the Interim Constitution mandated the newly elected people's representatives to make a new constitution. The new constitution was to restructure the state with the aim to end discrimination and injustice based on class, caste/ethnicity, gender, and region that fueled the violent conflict. In 2008, an election created a constituent assembly, which was unfortunately aborted without making a new constitution.

Map 2: Categories of Earthquake Affected Districts



Source: *NRA 2019*

The second constituent assembly election was held in 2013. Contestation continued as the new constitution was expected to address Nepal's historically marginalized communities' demands for inclusion, autonomy, and federalization of the country, with provinces named and delineated in the way that respected people's identity. Amid the catastrophic situation created by the earthquakes, the major political parties -- the Nepali Congress, Nepal Communist Party (UML), United Communist Party of Nepal (Maoist) and Madhesi Jana Adhikar Forum-Democratic (MJF-D) -- signed a 16-point agreement to fast-track the constitution drafting process. Soon afterwards, on September 20, the new Constitution of Nepal 2015 was promulgated. The earthquake emergency spurred constitution making – a major political decision taken by the political parties in the middle of a disaster.

In the two years after the earthquakes, two significant political events diverted the government's attention from the disaster. The first was a protest in the low-lying Tarai/Madesh region near the Indian border by the United Democratic Madhesi Front (UDMF) against the new constitution, which was perceived as exclusionary and regressive. Protesters blocked highways and transit points along the Indian border. At the same time, India stopped essential supplies to Nepal, citing the security situation in Nepal. This blockade lasted from October 2015 to February 2016 and slowed disaster recovery. In addition, during 2017, the state organized elections, in phases, for local bodies, provincial assemblies and the federal parliament. The attention of both the state and ordinary people strayed from the disaster. A timeline of major events in Nepal right before and after the earthquake is presented in Table 2.1.

Overall, the poor and marginalized suffered the most. Over 5 million people (of Nepal's 26 million in 2011), including more than 1 million indigenous Tamangs, live in the hardest hit 14 districts. Tamangs live in 10 out of the 14 districts surrounding the Kathmandu valley and Gorkha, the epicenter of the first earthquake.[39] This region which Tamangs regard as their homeland, is referred to as Tamsaling.[40] Historical oppression and structural inequalities faced by Tamangs added to the severe and disproportionate negative effects.[41] Indeed, some have called the devastating disaster a "Tamsaling tragedy."[42]

Other indigenous groups residing in Tamsaling also suffered greatly. They include endangered Hayu, highly marginalized Baramu/Brahmu, Chepang/Praja, Danuwar, Majhi, Pahari, Thami and other indigenous groups of Byasi, Gharti/Bhujel, Gurung, Jirel, Kumal, Magar, Rai, Sherpa, Sunuwar, Hyolmo and other. Dalits experienced extra disadvantage due to untouchability and high rates of poverty. Although in general Brahmins, Newars, and Chhetris have greater resilience capacity than other groups, those living in the Tamsaling region have fallen behind compared to their counterparts living in other areas. The disaster did not make anybody richer in the area, although already wealthy people had better chances to recover quickly. After four years, as people have gradually acquired basic shelters and employment, they continue to struggle to deal with the lingering effects created by the earthquake disaster.

---

39 Gaha Magar, Santa. [2072 BS]. Punnirman: Kendra Binduma Tamang (Reconstruction: Tamang in Epicenter). Himal Khabar Patrika, 5- 11 July 2015. http://nepalihimal.com/article/4607. See also Thapa, Deepak, 2015. The honeymoon is over. The Kathmandu Post. June 18, 2015. https://kathmandupost.com/opinion/2015/06/18/the-honeymoon-is-over

40 Tamsaling is the name of the province proposed by the Committee for State Restructuring of the Constitution Assembly elected in 2008 covering the 10 districts surrounding Kathmandu valley in recognition of the historical identity of Tamang people. Tamang organizations and Nepal Communist Party (Maoist) advocated for the name and delineation of territory.

41 Ghale, S. (2016). 'A Year After Nepal's Killer Quake, the Tamangs Continue to Struggle on the Margins', The Wire. Available from: http://thewire.in/2016/05/22/ayearafternepalearthquaketamangcommunitycontinuestostruggle37305/. [May 5, 2016].

42 Holmberg, David and Kathryn S, March 2015. Tamsaling and the Toll of the Gorkha Earthquake. From the series; Aftershocked: Reflections on the 2015 Earthquakes in Nepal. Society for Cultural Anthropology. https://culanth.org/fieldsights/tamsaling-and-the-toll-of-the-gorkha-earthquake. See also the French Anthropological network 2015: http://reseauchercheursnepal.fr/le-projet-salme/ See also British researchers network: https://sway.soscbaha.org/blog/

Table 2.1: Timeline of major events in Nepal

November 2006

Peace Agreement between the government and the CPN (Maoist)

April 2008

First Constituent Assembly **elections**

November 2013

Second Constituent Assembly **elections**

April 25, 2015

7.8 magnitude earthquake hits, with epicenter Gorkha District.

August 2016

NRA **publish** Procedures for handling of grievances

May 2016

Post Disaster Recovery Framework **(PDRF) launched**

April 2016

First tranche of the housing **grants distribution started**

January 2016

CBS detailed damage Assessment for identification of eligible households

December 2016

Grant Disbursement Procedures for Private Houses approved

March 2017

DUDBC Design Catalogue Volume 2 published

April 2017

House reconstruction starts in meaningful way

May-Sep 2017

Elections for **local governments** (three phases on 14 May, 28 June and 18 September, 2017)

April 25, 2015

Procedures for **interest-free loans** to earthquake victims **approved**

29 March 2019

NRA launches the final round of **reverification and resurvey** for households missed during previous surveys or who had registered a grievance related to the result of their previous survey.

25 December 2018

NRA **approves** 'Integrated Settlement Development **Guideline** 2075'

25 September 2018

'Interest subsidy on subsidized **loan policy guideline** 2075' published

May 12, 2015

7.3 magnitude earthquake hit Dolakha district.

June 2015

Post Disaster Needs Assessment **(PDNA) launched**

June 2015

Government provides cash grants of **NRs. 15,000** for temporary shelter

August 2015

4.4 billion USD (two thirds of total appeal) committed by international donors to support recovery and reconstruction

December 21, 2015

National Reconstruction Authority Act passed by parliament

October 2015,

DUDBC Design Catalogue Vol. 1 **published** with 17 housing designs

October 2015

Blockade by India (from October 2015 to February 2016)

September 16, 2015

Constitution of Nepal 2015 promulgated

May 2017

Procedures for **interest-free loans** to earthquake victims approved

June 2017

NRA decides to **increase** the housing reconstruction **grant from 200,000 NPRs to 300,000**

June 2016

NRA decides to deploy **2,500+ technicians** for supporting housing reconstruction in **14** worst affected districts.

July 2017

Deadlines set by **NRA** for Disbursement of Housing **Reconstruction Grant third tranche** for April 13, 2018. Deadlines were extended in February, April and September 2018 for third tranches for 14 May 2019 and finally removed in February 2019.

15 May 2018

NRA identified **18,505** households identified as vulnerable requiring **additional support** for their housing recovery.

15 March 2018

More than **90 percent affected** are still in **temporary Shelter**

Nov/December 2017

Federal and provincial parliamentary **elections**

August 2017

NRA **publish** Relocation and Rehabilitation of Hazard-prone Settlements procedures

CHAPTER 3

Effects of Disaster

CHAPTER 3

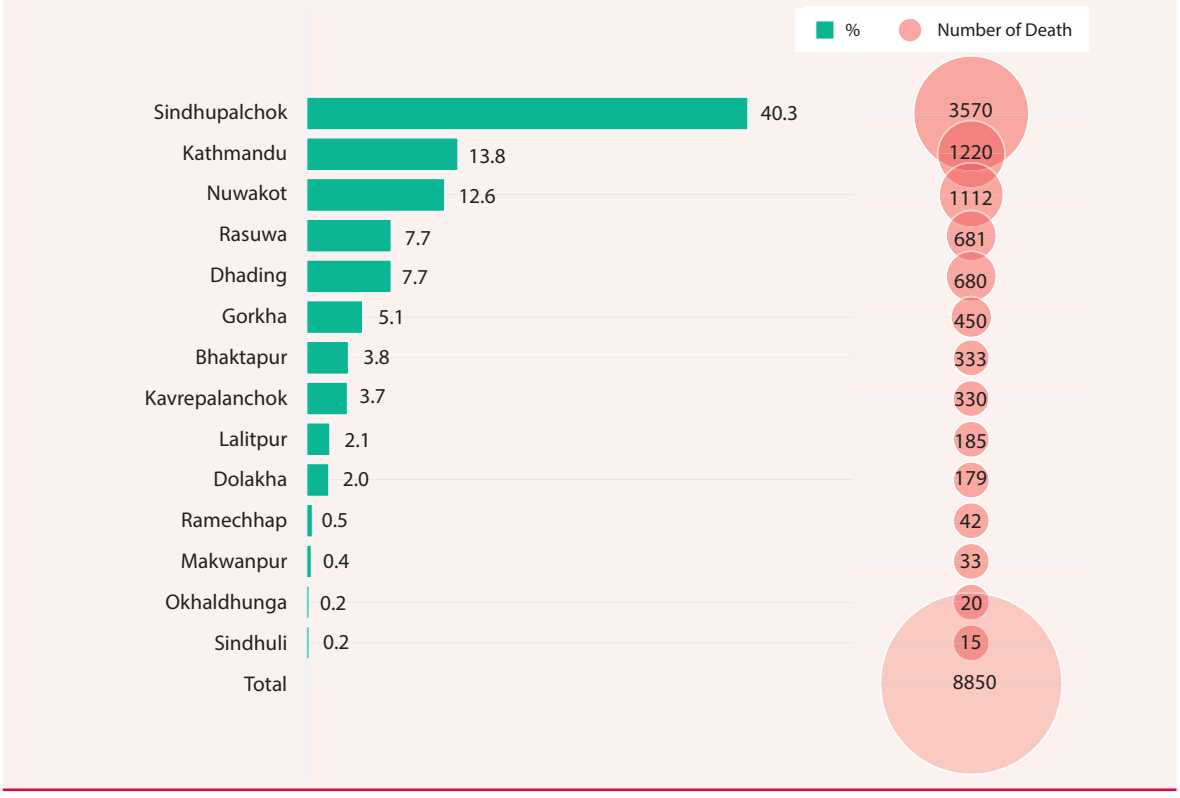
Effects of Disaster

This chapter assesses the effects of disaster in four areas. First, the personal loss through death, injuries, and psychological trauma. Second, the destruction of houses, livestock, food grain, livelihood assets, including community structures. Third, an increased sense of fear and vulnerability, triggered by the earthquakes and repeated aftershocks. And fourth, the enhanced sense of community solidarity in the face of the crisis.

3.1 Death, injuries and trauma

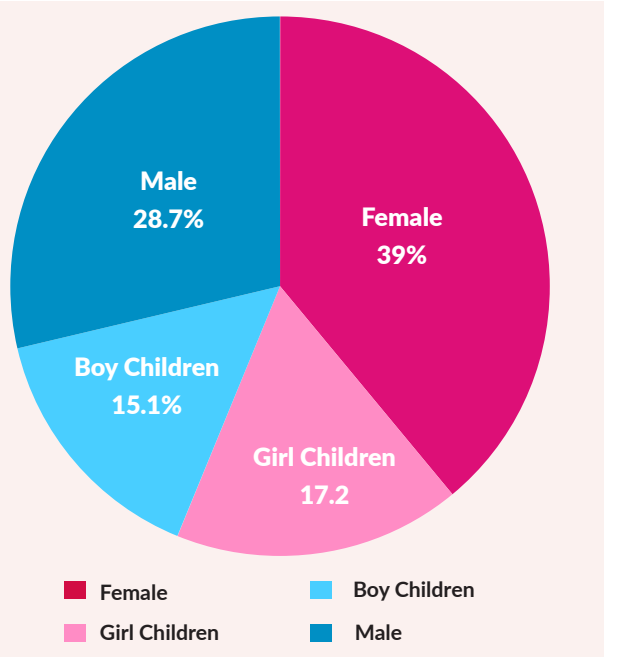
The first order impact of the disaster has been the death of loved ones, the physical injuries, and the psychological trauma of the survivors. According to the MOHA, 8,969 people died in the earthquake (Figure 3.1). Of these, 90 percent died in the 14 most affected districts. Although the earthquake epicenters were in Gorkha and Dolakha districts, the most deaths occurred in Sindhupalchowk district, followed by Kathmandu, Nuwakot, Rasuwa, and Dhading.

Figure 3.1: Deaths in the 2015 earthquakes by District, CRS 2019



Experts say that the day and time of the earthquake reduced the death toll, compared with earthquakes of similar magnitude in other countries. It was 11:56 am on a Saturday when the first earthquake shook the ground. The shaking lasted for around 80 seconds. Houses started to collapse. Had this been night instead of day, or a day other than Saturday, many more people would have been inside their houses and children would have been in schools. Instead, many people were outside, working on their farm, or traveling. Still, the 2015 earthquake death toll ranks as the 38th highest globally since 1900.[43]

Figure 3.2: Earthquake deaths by sex and age, CRS 2019.



Source: *MOHA, 2015*

Besides avalanches and landslides, ethnographic field observation in Sindhupalchowk, Dhading, Nuwakot, and Kathmandu shows that most of the people who died were trapped or crushed by the collapsing houses, usually built using mud-stone and traditional masonry. They had been cooking, eating, resting, or doing chores. Most people had time to flee outside, but many elderly, pregnant women, and persons with physical disabilities were not able to escape. Houses reinforced by concrete mostly remained intact or were less damaged. Because of this, some have argued that it was collapsing houses, more specifically, the houses of the poor, that killed people, not the earthquake itself. Remembering the tragedy four years later, a 45-year-old mother from a remote village of Sindhupalchowk said, through a burst of tears, "My son died at the door of the house when the ceiling fell." Of course, a family member's death causes a major disruption in the household and lasting grief and sorrow in the hearts of survivors.

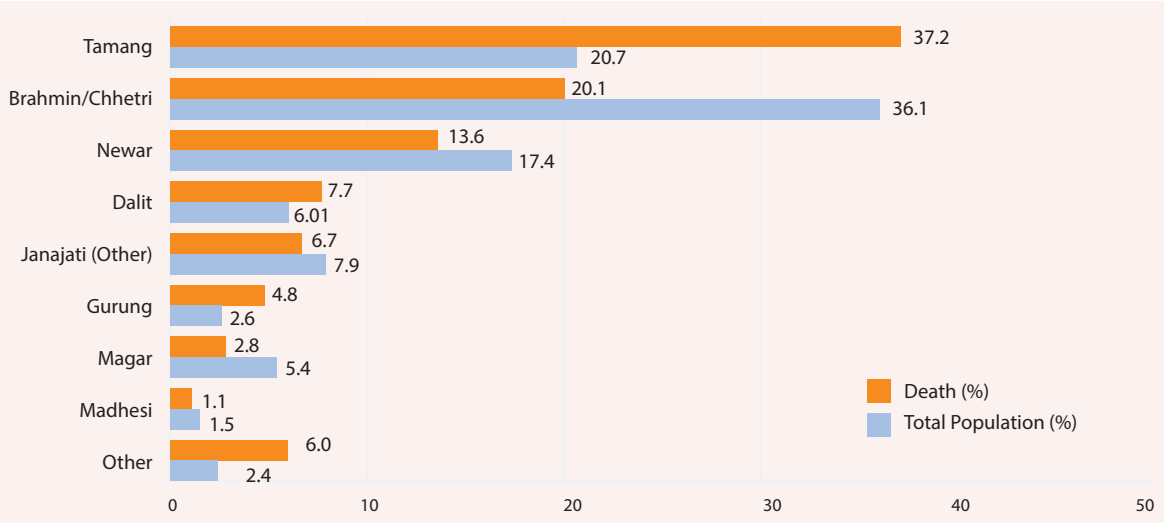
The earthquakes took the lives of everyone: women, men, children, and elders. But some patterns existed. 56 percent of those who died were women, and 32 percent were children, with two percent more girls than boys (Figure 3.2). Our survey shows that 1.5 percent of all households lost at least one family member, the majority of them were household heads or earning family members.

A noticeable disparity by caste and ethnicity existed (Figure 3.3). 37.2 percent of the dead belong to the Tamang community.[44] At first, this high number may not be surprising, because the region hit was the traditional home of the Tamang people. But the loss was disproportionate. Tamangs formed 20.7 percent of the affected area's

43 Nepal Earthquakes – Report #3 12.05.2015 – Situation Report No. 3. Center for Disaster Management and Risk Reduction Technology, a joint interdisciplinary research institute by GFZ and KIT, www.cedim.de.

44. See also Magar, S G. 2015. The Tamang Epicenter in Nepali Times. July 5th Issue. Online Available at: http://www.nepalitimes.com/blogs/thebrief/2015/07/05/the-tamang-epicentre/

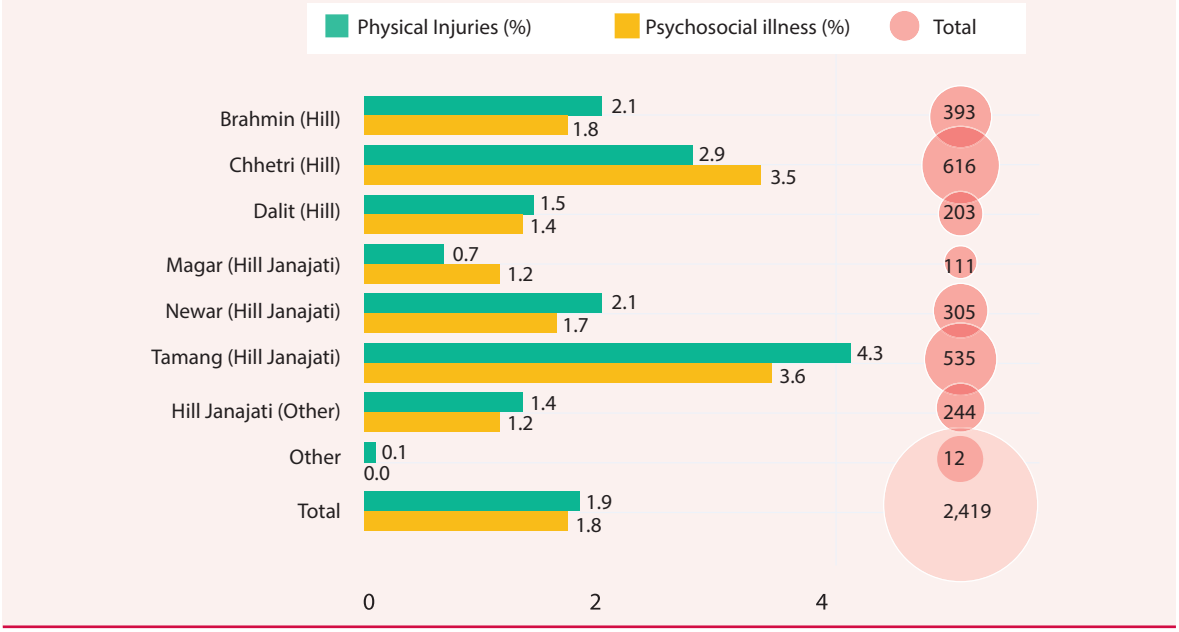
Figure 3.3: 2015 Earthquake deaths and population by social groups, CRS 2019



Source: *MOHA 2015, CBS 2011*

population but nearly twice that portion of those killed. Similarly, the Dalit castes -- Kami, Damai/Dhole, and Sarki -- form 6 percent of the region's population but 7.7 percent of those killed. Newars, on the other hand, represent 17.4 percent of the area's population living but 13.6 percent of the death. Other hill Janajati population made up 14.3 percent of the dead. The other caste/ethnic groups, including foreign visitors, accounts for 31.2 percent of the fatalities. Some groups had relatively low death rates. Brahmin/Chhetri communities total 36.1 percent of the population but comprised 20.1 percent of those who perished.

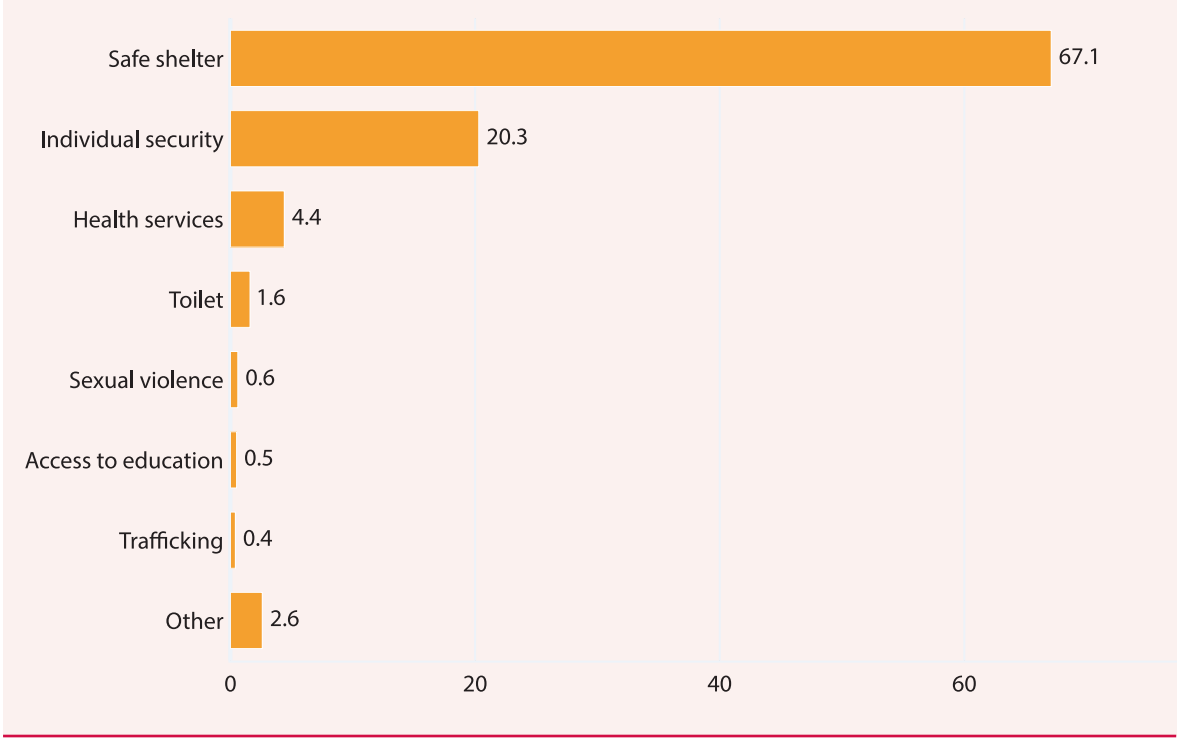
Figure 3.4: Percentage of physical injuries and psycho-social problems caused by 2015 earthquake, CRS 2019



The earthquakes injured 22,302 people.[45] The survey undertaken in this research shows that 1.9 percent of the total sample population was injured during the incident (Figure 3.4). Communities were affected equally, except for the Tamang (4.3 percent) and Chhetri (2.9 percent) communities, which suffered an injury rate higher than the average. In general, minor injuries healed quickly. But, at the time of our survey, four years after the earthquakes, 5.6 percent of the injured still had not recovered fully, including those who became physically impaired.

The disaster experience also caused significant social psychological illness. Roughly two percent of survey respondents reported psycho-social problems: sadness, fainting, sleeplessness, anger, alcohol abuse, mental tension, vomiting, muscle cramps, crying, high/low blood pressure, fear, and fatigue (Figure 3.4).

Figure 3.5: Problems faced by women and children during earthquake (Percent), CRS 2019



Psycho-social problems, short and long-term injuries, and the death of a family member, especially of household heads and income-earning family members, placed tremendous pressure on entire households. Such disaster-induced vulnerabilities pull people backward. Single women households or households headed by a woman, or an elder, faced additional vulnerability. Thus, as a result of the earthquakes, the region's vulnerable people have special needs and require additional support.

Women and children faced additional difficulties during the earthquake and its aftermath (Figure 3.5). Lack of safe shelter was the major difficulty. Individual security related primarily to theft, robbery, and accidents, and the problem of unavailability of health services and toilets were other major problems. Although sexual violence and trafficking was reported to be lower in cases, they were of serious concern especially for adolescent girls and in certain locations.

45 Ministry of Home Affairs 2015, http://www.drrportal.gov.np/

3.2 Damage and loss of houses and assets

The earthquakes destroyed physical materials essential for maintaining life, such as livestock, crops, stored food grains, clothing, and additional assets. According to MOHA, 773,106 private houses were fully damaged, of which 92 percent were in the 14 earthquake-affected districts.[46] An additional 299,030 houses were partially damaged, of which 17 percent were in the study districts. More than five million people living in the 14 districts lost their home. People without homes encountered multiple difficulties. For at least a month, people who lost houses or those scared by the many aftershocks camped in farm terraces and open places. The loss of a roof for shelter, and space for cooking, eating, caring for children, and sleeping was a stark shock. It was not only the loss of the house as a physical structure but also the loss of a home, with emotional attachments and sense of belonging that caused trauma. The Post Disaster Needs Assessment (PDNA) calculated the loss damage of housing and human settlement to be NRs. 350,540 million.

Our survey shows that 92 percent of households experienced destruction and damage of houses. Analysis by social groups reveals that there was an analogous pattern in terms of damage of houses. Of the total sample households, 24 percent were female-headed households. There was, however, no noticeable gap between female-headed households and others in terms of the proportion of damage of the houses.

Another major impact came from the loss of livestock such as buffaloes, cows, goats, and pigs, important assets of subsistence agriculture in rural Nepal. Our survey shows that 53 percent of the households had their cowsheds destroyed. Around 17,000 cattle were killed as well as 40,000 goats, pigs, and other smaller domesticated animals.[47] Livestock in the hills provide manure, milk, meat, and cash to supplement meager household income, and are also used in farming. The earthquakes also damaged stored grains and crops in the field. Destroyed houses also buried grains stored for seeds and for feeding the family.

The total value of disaster loss, including direct damage and indirect losses, is estimated at NRs. 706 billion. The most affected sector, housing and settlements, represents around 50 percent of the destruction value, followed by food grain and crops (10%), and livestock (3%). The total damage to crops, livestock, and irrigation in all affected districts was estimated at NRs 28.3 billion. The average damage per household was estimated at NRs 800,000.[48] Our survey revealed that around 13 percent of families, mostly Dalits, experienced damage to their off-farm equipment and facilities, and 10 percent faced damaged trade.

Prior to the earthquake, 25.2 percent of Nepal's population lived under the poverty line.[49] The poverty in the earthquake affected area is estimated much higher than the national average. In the central hills and mountains, 66.8 percent of the rural population was either already poor or at risk of falling into poverty. According to the PDNA, the earthquake pushed an additional 5.4 million of the country's population into poverty, almost all from the central hills and mountains[50].

---

46 This is based on MOHA record http://www.drrportal.gov.np/. The list of the eligible beneficiary for private houses increases as the grievances are being addressed. As of 11 December 2019, the number of eligible beneficiaries increased to 816,564 http://www.nra.gov.np/en/mapdistrict/datavisualization.

47 Post Disaster Need Assessment (PDNA), National Planning Commission 2015. Based on the World Bank calculation of NLSS III (2010/11), 2015.

48 Microfinance for disaster recovery. Lessons from the 2015 Nepal Earthquake. ADB 2019.

49 Central Bureau of Statistics [CBS]. (2011). Nepal Living Standards Survey 2010/11. Kathmandu: Central Bureau of Statistics. A new poverty line of NRs. 19,262 was set in NLSS III 2010/2011 data analysis to reflect the rising consumption pattern with 35% increase in real value compared to previous poverty line.

50 Multidimensional Poverty Index (MPI) for Nepal is calculated to be 44.2%. Nepal's Multidimensional Poverty Index: Analysis Towards Action. National Planning Commission and Oxford Poverty and Human Development Initiative (OPHI), 2018.

Compounding the loss of houses and livelihoods was the loss of community structures such as irrigation canals, drinking water supply systems, roads, schools, health posts, service centers as well as places of religious worship.[51] The NRA identified 283 settlements to be relocated due to fear of new landslides or geological instability.[52] Drying water sources was another major problem faced by people living in the earthquake districts.

3.3 Activation of trauma and uncertainty

The third impact of the earthquakes has been the fear and trauma that the survivors have experienced. The crisis evoked multiple emotions, primarily fear. People's narratives of the earthquakes and its aftermath begins with the subtle but strong feeling of fear. Fear is a threat coming from outside that negates what we want and cherish. Generally, fear is about our desire not to lose things that are important to us: our lives, wealth, freedom, dignity and even social standing. Unpredictable situations exacerbate the sense of fear.

Earthquakes spur the fear of losing one's life. Unlike war, fire or even flood, severe earthquakes create a special kind of fear, as the source of the threat can be difficult to locate. Social norms, patterns, and systems are suddenly dissolved; individuals are left on their own with only bare life. Earthquakes seem beyond human capacity to predict and save oneself from. Walls and roofs collapse, terraces shift, and mountains shake. Utter helplessness can set in. When the very ground you are standing on begins to shake, your very existence comes into question. You realize the ultimate frailty of human life. The anguish of being left to live with uncertainty, the unpredictability of the next tremor, the pain of living with loss and physical pangs appears to affect people to their basic core.

Like other emotions, fear is shaped by culture. Fear and responses to it differ by culture. "Death," an elderly Buddhist nun in Dhading observed, "is just natural and one should prepare for this." But even for those believers of Hindu-Buddhist life-death principles, death by accident is awful. Fear exists as a common denominator across all social groups. But as the earthquake did not affect all sections of the society evenly, the sense of fear also was experienced in different degrees. Poor people who have limited access to power and social networks for support felt fear and vulnerability more intensely and for a longer duration than others. Because their voices are often not heard, their stories of pain, despair, cries, and sorrows are not recorded. As they struggle on, the survivors from society's marginalized groups bury their sense of fragility and fear deep within their subconscious.

3.4 A sense of community solidarity and help

The ethnographic research undertaken for this project shows that people did not merely succumb to a sense of loss and fear. The disaster also awakened a deep sense of solidarity among community members and spurred altruistic actions. Immediately after the earthquakes, determined people acting on their own pulled the wounded from ruined walls, cleared the rubble to uncover the disappeared, and risked their own lives to enter into falling buildings to save children. Some even died in the effort to save others. Many women were on the frontline of saving children, elders, livestock, and others. A mother in Nala village, Kavre District recalls that when the earthquake hit, she was working in her potato field with her daughter. Villagers working in the field could

51 Earthquake damaged 8,680 schools, 1,197 health posts, 4,545 drinking water supply system, 750 archeological heritage site and 1,200 monasteries. Rastriya Punnirman Pradhikaran, (2075 BS), Aarthik Barsha 2074/75 ko Barshik Pratibedan (National Reconstruction Authority, [2018] Annual Progress Report of Fiscal Year 2017/2018. Kathmandu: Government of Nepal.)

52 Rastriya Punnirman Pradhikaran, (2076 BS), Aarthik Barsha 2075/76 ko Barshik Pratibedan (National Reconstruction Authority, [2019] Annual Progress Report of Fiscal Year 2018/2019.

Kathmandu: Government of Nepal.) NRA conducted geological survey in 1060 settlements out of which 283 were identified as requiring relocation, 305 to adopt additional safety measures and rest as safe. Pp. 40.

not comprehend what was happening and sat holding the shaking ground. As soon she realized that it was an earthquake, she looked towards her village – she saw dark dust clouds. She said, "The only thing that came into my mind at that time was our buffalo and calf. I ran and pulled them out to the field. When I looked back, the buffalo shed collapsed in front of my eyes. My body shivered and I held the calf for a long time on the terrace."

Beyond the common image of women depicted as victims of any disaster, these cases show that they were actively engaged in helping people. As survivors engaged in spontaneous initiatives to help each other, pre-disaster differences, allegiances, and preferences appeared to fall away. The common need for survival awakened a feeling of collective unity. The moment evoked a shared sense of human frailty and need for mutual support. [53]

Survivors gave and received help from communities. Most help came from relatives and neighbors. But the outside world also expressed its solidarity to the survivors, sending large amounts of relief materials. People in the earthquake-affected districts felt connected to parts of the globalized world where many of their relatives are working, and this globalized world expressed its solidarity and support in their moment of suffering.

During the earthquakes, once people stop thinking about their own personal safety, they begin to think about helping others. A survivor's account of pain and horror during the moment of disaster shows this switch. A young man from Gorkha, Barpak in his 20's, reflecting on his experience, explained, "Houses started to fall and I ran through the maize field. I was very scared that I would die. When I reached the hill, I turned around and looked back at my village. A thought came to my mind -- what if I'm the only one who survives. This was even scarier." Then he returned to the village. Such accounts show a sense of worth and distinction, reflecting the social nature of human existence.

Mutual support came not just from one's relatives and community; during the time of rescue, addressing injuries, funerals, and making temporary camps to live in, groups helped each other -- irrespective of caste, ethnicity, class or any other pre-disaster differences. The disaster was an out-of-normal situation -- a liminal moment when a sense of human equality becomes paramount -- amid the despair and suffering.

53 Turner, V. (1969). The ritual process: structure and anti-structure. London: Routledge & K. Paul.


Supreme

CHAPTER 4

Four Years of Recovery

CHAPTER 4

Four Years of Recovery

In Nepal, the term "recovery" is often confused with "reconstruction." Reconstruction primarily refers to houses, schools, roads, cultural sites and other physical infrastructure. Recovery, on the other hand, denotes bringing the situation to a certain level of acceptability after the disaster. It encompasses the reconstruction of houses and other physical structures, but also reinstatement of livelihood enterprises, and restoring community life. Recovery means not merely 'bounce back' to the pre-existing condition but 'bouncing back better', which means attaining a level better than that existed before the disaster. Exactly what is aimed for recovery, however, depends upon community, government and donor goals.

Depending upon their resilience capacity and the nature of support received, some people may recover or come back to the pre-disaster situation while others may attain a situation better than before. In general, the poorer the household in the pre-disaster situation, the harder the recovery process. Some may find themselves in a situation worse than before. Recovery should also ideally include a sense of preparedness for possible future disasters. To assess recovery, this research study looked at the status of five aspects of life: 1) housing, 2) food sufficiency, 3) economic status, 4) health, and 5) community life.

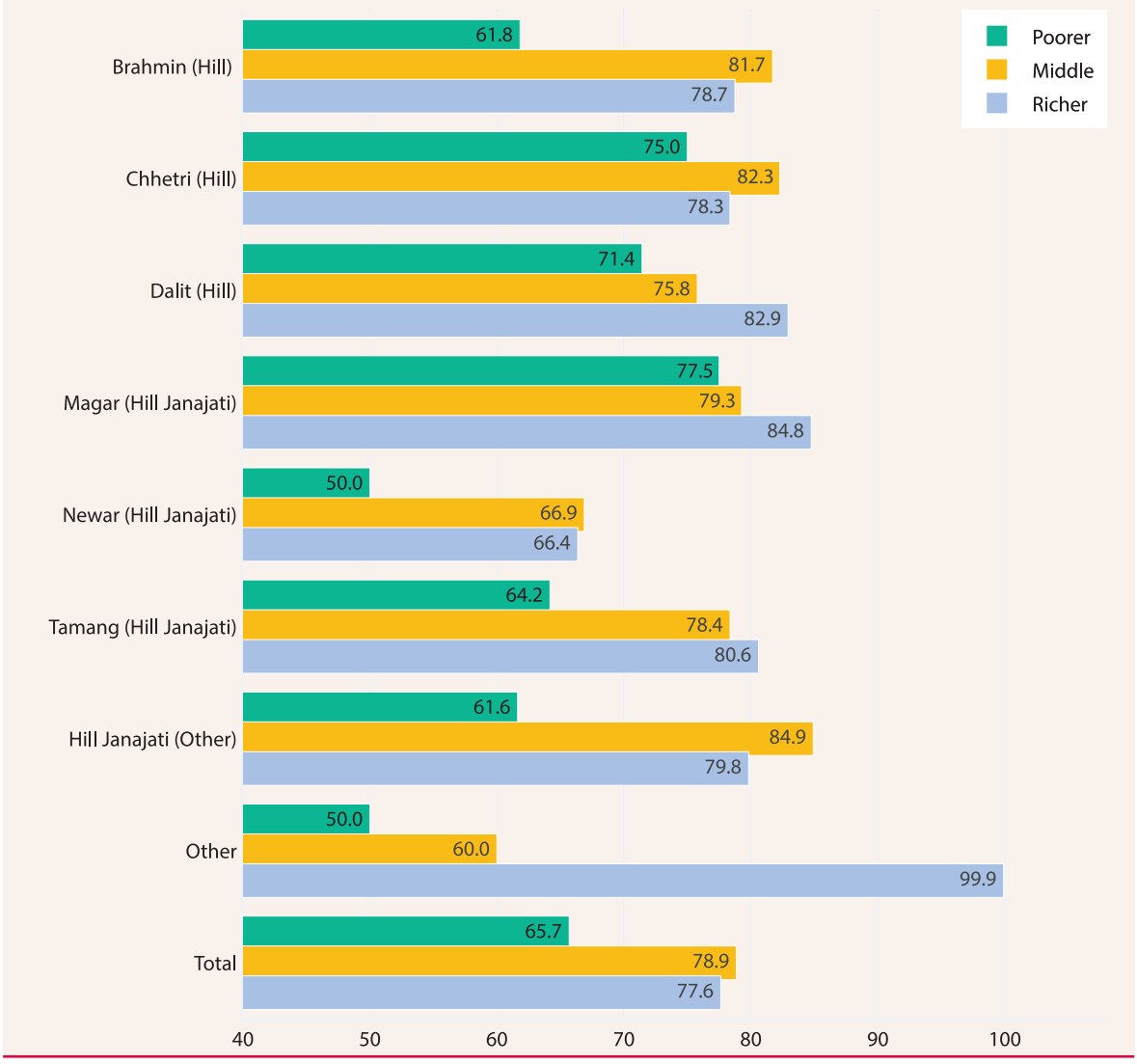
4.1 Reconstruction of houses

Because the Nepal earthquakes destroyed or damaged so many houses, private house reconstruction has been a priority in the recovery process. Immediately after the destruction of the houses, people lived in emergency shelters -- in camps, often in groups. Many people continued to live in the emergency shelters -- primarily living places covered by tarpaulin or leafy materials - even after the third month. Gradually, people started to build their own temporary shelters roofed with galvanized zinc sheets. Some lived in partially damaged houses, because they were not able to build or did not need a temporary shelter.

Some new house construction in villages started six months after the disaster, around November 2015. Monsoon followed the April-May earthquakes and in October people celebrated the Dashain festival in tents and temporary shelters. Richer households who did not need any external assistance started house reconstruction first. Those who needed and wanted external support waited until the government's announcement of a support scheme for reconstruction. The government provided the first tranche of the housing grant in April 2016.

Our May-June 2019 survey shows that 75.8 percent of households have completed building a new house (Figure 4.1). Analysis by economic status of the households categorized in three groups based on PPI score show that 65.7 percent of poorer households have built the new house compared to 77.6 percent of richer households. Importantly, in all social groups, the poorer households have less reconstruction than the households falling under the middle and richer economic category.

Figure 4.1: Percentage of households who built new houses (as of June 2019) by social group and economic status (PPI $125), CRS 2019



5.4 percent of households reported that they are living in houses that incurred only minor damage. Only 0.9 percent of households are living in undamaged houses. Almost 17 percent of families reported that they are still living in temporary shelters such as mud and wood sheds with corrugated zinc roofs or part of a damaged house (usually the ground floor with the roof and upper floor removed). A small number of households are also living with relatives and space provided by others as temporary shelters. One percent of the families are living in rented spaces (Table 4.1).

Table 4.1: Percentage of households living in different types of housing by social group, CRS 2019

Social Group	Percent of Households (as of June 2019)					
	Newly built house	Undamaged house	Partially damaged house	Temporary shelter	Rent	Total
Brahmin (Hill)	77.7	1.5	3.7	16.3	0.7	404
Chhetri (Hill)	79.7	0.6	3.9	14.6	1.4	728
Dalit (Hill)	77.2	0.8	4.6	17.0	0.4	259
Magar (Hill Janajati)	80.7	2.2	5.0	11.6	0.6	181
Newar (Hill Janajati)	64.9	1.0	11.9	19.1	3.2	413
Tamang (Hill Janajati)	75.0	0.3	5.7	18.6	0.5	938
Hill Janajati (Other)	77.7	1.4	3.1	17.5	0.3	354
Other	69.6	8.7	8.7	13.1	0.0	23
Total	**75.8**	**0.9**	**5.4**	**16.8**	**1.0**	**3,300**

Disaggregation of the data by social groups reveals a difference in terms of house reconstruction. Newars have a slightly lower rate of house construction than other groups. Compared to others, a higher number of Newar households are living in houses with minor damage, perhaps because they tend to live in urban clusters. More Newar families are living in temporary shelters and rented spaces. Following Newars, more Tamangs, other hill Janajati, and Dalits are living in the temporary shelters than other social groups. There was no significant gap between female-headed households and others in terms of the reconstruction status.

People had used or planned to use a variety of sources to finance reconstruction (Table 4.2). 6.3 percent of households used their own resources for rebuilding, while 5.5 percent said they relied solely on government and other grants. The vast majority of households combined government grants with other sources, either savings or loans. 42 percent of families used savings to supplement the grants. 41.6 percent took loans to supplement the grants. Only 3.1 percent of the households were able to obtain a low-interest loan for the construction. A small number of families found external support outside of government or government-approved international development partners and NGOs.

Table 4.2: Percentage of households with different sources of finance for building a new house by social group, CRS 2019

Social Group	From own resource	Own resource and Govt. grant	Govt. grant and loan	Govt. and other grants	Low-interest loan	Other
Brahmin (Hill)	11.8	29.4	44.1	2.9	2.9	8.8
Chhetri (Hill)	3.9	48.1	44.2	1.9	1.9	0.0
Dalit (Hill)	0.0	31.8	40.9	27.3	0.0	0.0
Magar (Hill Janajati)	0.0	60.0	30.0	10.0	0.0	0.0
Newar (Hill Janajati)	14.3	51.0	22.5	4.1	8.2	0.0
Tamang (Hill Janajati)	0.0	36.8	58.8	2.9	1.5	0.0
Hill Janajati (Other)	16.7	38.9	27.8	5.6	5.6	5.4
Other	0.0	100.0	0.0	0.0	0.0	0.0
Total	**6.3**	**42.0**	**41.6**	**5.5**	**3.1**	**1.6**

More Hill Janajati (Others), Newar and hill Brahmin families than other groups were able to mobilize their own resources for construction. But none of the Dalit, Magar and Tamang households were able to rebuilt their houses with their own resources. Comparison between the Kathmandu valley and outside the valley shows that 10 percent of valley households were able to build their houses with their own resources while only four percent from outside the valley districts were able to do so.

Only around one-third of Dalits and Tamangs were able to supplement the housing grant with their own resources. Around one-third of the Dalit households had to rely solely on the government and other grants for construction. Almost 60 percent of Tamang households took loans, usually from relatives, moneylenders, savings and credit groups and cooperatives. Interest rates ranged from 17 to 36 percent, with an average of 23 percent per annum. Case studies of villages where ethnographic studies were carried out shows that around two thirds of those who took loan were from relatives, neighbors and moneylenders. One fourth of loans were from Cooperatives and only about five percent were from Banks, which had the lowest interest rate of around 13 percent.[54] Supplemental funds came from salary income and remittances. 14.1 percent of households relied upon funds from one or more family members with a salaried job, pension or other social security. 41.5 percent of households reported having family members working outside the village as laborers in Nepal and other countries. 17 percent of the households reported that remittance money has supplemented reconstruction work.

For house reconstruction, Hill Dalit and Tamangs have the lowest level of contribution from salary, pension or other forms of social security. Fewer Tamangs receive a supplement from remittance than other groups. Newars also figure low in contribution from salary and social security as well as remittance but about two-thirds of Newar households have been able to mobilize their own savings and other resources. Brahmins, Magars, and Chhetris have a higher level of contribution from salary/social security and remittances.

For those from poorer communities who are living in temporary shelters even after the fourth year (17%), there is a looming danger that they might end up living permanently in temporary shelters. Most report wanting to build a house, but their ability to do so is limited by several factors. Among them, 3.7 percent, mostly Dalits and Tamangs, do not have land to build a house or have any land ownership certificates. Other families have a share in land as a sharecropper or from cultivating in guthi land, but they do not have a land certificate. Yet other households led by elderly do not want to invest the time and resources in rebuilding nor do they have adequate capacity to mobilize labor and resources. Single-member households, women-headed households, and families with only minors and persons with disabilities also often find themselves still in temporary shelters. Government has made a provision of NRs 200,000 per family for buying land for landless and additional support for families falling in their "vulnerable category."[55] But unfortunately, additional grants alone will not be sufficient to build houses as they lack capacity to organize the labor, material and other logistics for construction.

54 Case study of Gorkha and Sindhupalchowk Districts also shows similar picture. See, Khanal, Rajib, Sugandha Subedi, Gaurav Kumar Panthi, and Animesh Raj Bajracharya. 2020. “Experience of Household Level Financial Management in Rural Housing Reconstruction in Nepal”, Paper presented at Web based National Symposium on Nepal’s Reconstruction, 24-27 August 2020, organized by National Reconstruction Authority.

55 On 19 March 2019 the NRA defines vulnerable households using four criteria: 1) Senior Citizens above 70 years, 2) Single women above 65 years, 3) Persons living with disabilities (red and blue cardholders), 4) Children under 16 and identified 18,505 households as vulnerable eligible for additional support for their housing recovery. Jokhim bargama parne bhukampabata prabhavit labhgrahi pahichan sambandhi karyabidhi 2074-03 (Operational Procedure Of Vulnerable Beneficiary Identification 2017 July).

The houses built differ by type, size, and materials used depending upon household economic circumstances. Wealthier households built reinforced concrete buildings designed by private engineers. But a large majority of the households built one-story-two room buildings. In the villages where our team conducted ethnographic studies, approximately 60 percent of houses built were with two rooms and 20 percent were one-story-one-room houses.

The number of households who built only one room differs by district and location. In Rasuwa, Dhading and Nuwakot districts, a significant number of families opted for a one-room house. In Rasuwa's Gatlang village, for example, 71 percent of houses built had one room and only 26.5 percent had two rooms.[56] Those who built one-story-one-room houses were mostly poor households who were not able to arrange additional resources or loans. The NRs 300,000 grant provided was just enough for building one-room houses. Some of the families built one-room houses in order to get the government grant before the deadline of July 2018 announced by the government.

There were also other reasons for people to opt for the one-room house. The government of Nepal recommended 17 models of earthquake-resistant houses. Volume I of the design catalog appeared in October 2015 and Volume II in March 2017. The public determined that the catalog's one-room and two-room model were the easiest design to get approval from the authorities. In an interview, a NRA engineer in Rasuwa district stated, "people can decide for other designs then those that were provided in the catalog but for the grant release for such a design, we need approval from a higher authority. It takes longer as it goes through bureaucratic processes. It is easiest for us to approve if people choose a prescribed model." In general, one-room and two-room model houses are inadequate for basic living requirements.

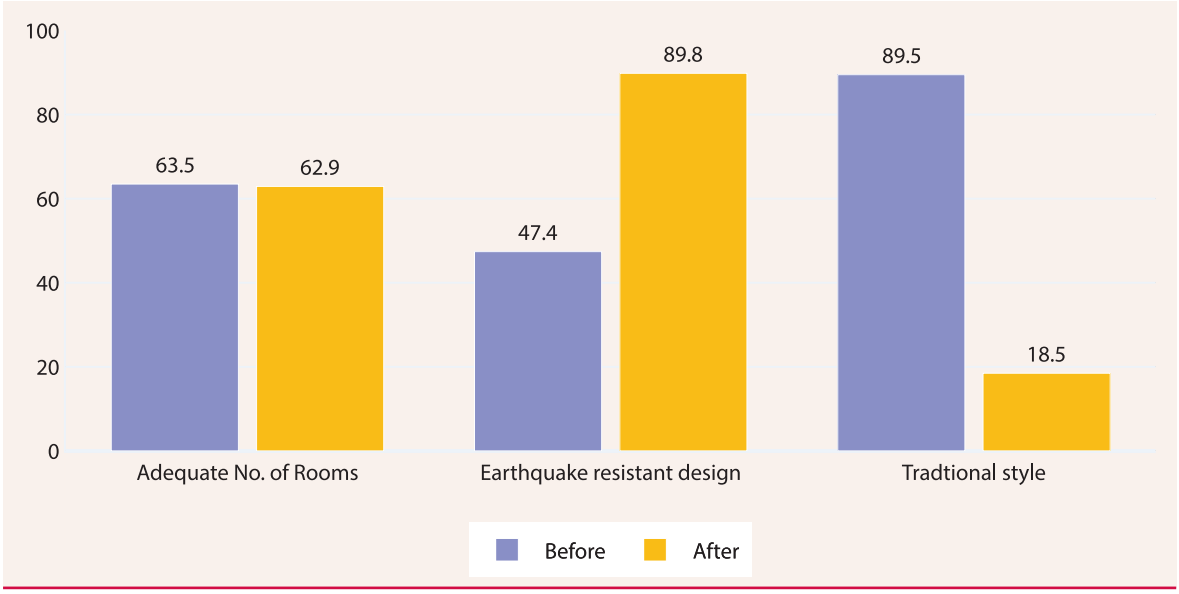
Some of the poorest households, many of whom are landless Dalit families, did not have adequate housing before the disaster, and built one-room houses that they are actually living in and relatively happy with. But for those families with more than two people even the two room houses are inadequate for basic living requirements.

Only 62.9 percent of households reported that they have an adequate number of rooms in their newly built houses (Figure 4.2). Even though house size has decreased substantially compared to the pre-earthquake houses, survey households reported no major changes in the adequacy of the rooms. Only 63.5 percent of the households reported having adequate rooms prior to the earthquake. This indicates that although room size has decreased substantially, the number is about the same.

A majority of one-room houses built are being used either as a kitchen, store or a guest room. Families need additional space for living because the newly built one-room houses are too small. One Rasuwa resident noted, "My house meets all the government requirements for earthquakes; unfortunately, it does not meet my family's requirements for living in it." Thus many people continue to use their temporary shelters, and partially damaged houses for living and storage.

56 The path to housing recovery, April 2019. The Housing Recovery and Reconstruction Platform (HRRP). Kathmandu

Figure 4.2: Perceptions of newly built houses compared to pre-earthquake houses, CRS 2019



A major change is seen in the increase of earthquake-resistant houses. Only 47.4 percent of households thought that their houses before the disaster were earthquake resistant; now almost 90 percent do. This is good news.

A dramatic change has occurred in house design. Prior to the earthquake, almost all rural households were built according to traditional architectural designs and aesthetics. The traditional design included spaces for multiple requirements of farming households. For example, the ground floor was used for a kitchen, dining, as well as living room or guest room. At times it could also be used as a place for thrashing, drying or storing grains, or for small animals or chickens. The second floor is for bedrooms, family shrine, and storage. The top floor/attic is solely for storing farm products. Only 18.5 percent of the survey households feel that the new house has a traditional style. The new houses built are universal in terms of its structure and space and do not consider traditional aesthetics. With the loss of traditional architectural aesthetics and outlook, the new house designs have also constrained traditional uses.

A huge amount of non-reusable construction materials was transported from the outside to Nepal's central hills during the construction period after the earthquakes. Our case study shows that the average construction cost for a two-room house in a village accessible by rough road was NRs. 807,500. Roughly 20 percent of the total cost went toward non-reusable cement, iron and galvanized zinc sheet for roofing. A house of this size requires around 2,000 kg of cement, 800 kg of the iron rod, and five bundles (per bundle 55 kg weight) of corrugated galvanized iron sheet with around 275 kg weight. This is a big change. For the 400,000 houses newly constructed by April 2019, the earthquake-affected districts have used approximated 1 million tons of cement, 0.5 million tons of iron, and 2 million bundles of zinc sheeting. These non-reusable materials could have a negative environmental impact in the long run. The fuel use also has an environmental cost.

On the social front, an important change was the formation of new households. In all the ethnographic study field sites, there were at least a couple of cases where joint families opted for de-jure separation by inheriting parental land. People formed new legal households in an attempt to qualify for government reconstruction grants. The government required evidence of land ownership for eligibility.

Based on the assumption that each household is a nuclear family with legal ownership of property, the government's "ownership"-based policy does not recognize the joint family structure common in Nepal. A joint family is two or more generations living in the same household without legal separation of parental property. Joint families usually consist not only of husband, wife, and children but also brothers, sisters-in-law, parents, grandparents, and even uncles and aunts. Even when the brothers are actually living in separate houses or places in the same site or elsewhere, they may not have yet divided parental property. Hence, they lack legal proof of ownership. In urban areas, it is more common for one family to live in the same house as a separate household without legal ownership of each. The policy of "ownership" based grant-making has pushed family members to make legal claims for inheritance and separation. The legal arrangements may not change the practice of joint family immediately, but it is likely to bring changes in the long run to form more nuclear families.

The shift from joint to nuclear families, encouraged by government's recovery policies, is an important shift. A house is a material entity but it becomes a household when people live in it according to legal, social and cultural norms. It is a basic social unit. Human kinship is nurtured and maintained in households; livelihoods are organized and sustained in households with family members performing different roles and duties. A functioning household means every member is involved in everyday actions both inside and outside the house. This process builds bonds between family members. When a house is invested with symbols and meanings such as decorative figures, shrines, furniture, and combined in particular spatial arrangements, it becomes a home. Home is a cultural process that creates togetherness, belonging and emotional safety.

The shrinking house size also presents a challenge to joint family structures. One or two-room houses can physically accommodate only a limited number of people. The reduced size of the post-earthquake houses seems likely to foster nuclear families but what changes it will trigger for traditional kinship ties and support especially for the elderly population and the notion of 'home', is yet to be seen.

The new house construction can also bring positive implications. The old housing pattern, the size of the house, materials used, decorations and space arrangement displayed social stratification and class differences. Some villagers during the field study observed that rebuilt houses of the same size and outlook in the village may, to some extent, have reduced age-old caste, ethnic, and class differentiation.

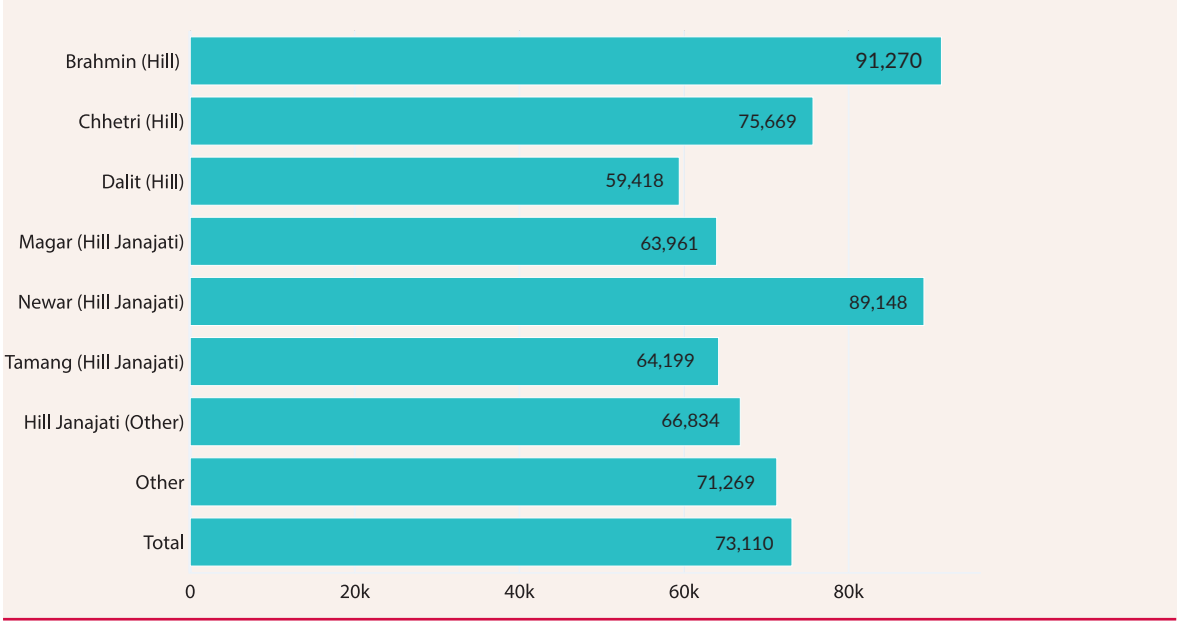
4.2 Household poverty and livelihoods

The restoration of household economy and livelihoods is another important part of the recovery process. To assess household economic recovery, we used household expenditure as an indicator for the level of poverty. Household expenditure is a summary measure of quantitative data on household consumption during the previous 12 months. Household expenditure includes expenditure in ten areas: 1) food items, 2) education; 3) agriculture/livestock (inputs such as labor, seeds, fertilizer, tools, etc.), 4) medicine/medical treatment, 5) clothing/ornaments, 6) festivals, ceremonies (birth, bratabandh, wedding, death, etc.), 7) direct taxes (land tax, house tax, etc.), 8) telephone/ mobile/internet/electricity/water/etc.), 9) transportation/travel, etc., and 10) other household goods. Although the categories of expenditure are identical to the Nepal Living Standard Survey (NLSS),[57] the CRS only brings the total amount in each category and does not have all the details enumerated as in the NLSS. Per capita average household expenditure is calculated from a combination of all categories for households.

57 Central Bureau of Statistics (2011). Nepal living standard survey 2010/11: Statistical report, Volume One. Kathmandu, Nepal: Central Bureau of Statistics, National Planning Commission, Government of Nepal.

The survey reveals that the per-capita annual average expenditure is NRs. 73,110 (Figure 4.3). Disaggregating by social group shows the average expenditure of Hill Brahmins, Newars and Hill Chhetris to be above the overall average expenditure. The groups with the lowest consumption are Hill Dalits (NRs. 59,418), Magar (NRs. 63,961) and Tamangs (NRs. 64,199).

Figure 4.3: Per-capita annual mean expenditure (NRs.) by social groups, CRS 2019



Household expenditure is a useful indicator for assessing the ability of households to fulfill their basic requirements. Nevertheless, the expenditure data should be read in the context of special post-earthquake economic activities. In the earthquake districts, reconstruction work may have spurred economic activities. After the construction phase is over, the consumption level may drop to the actual size.

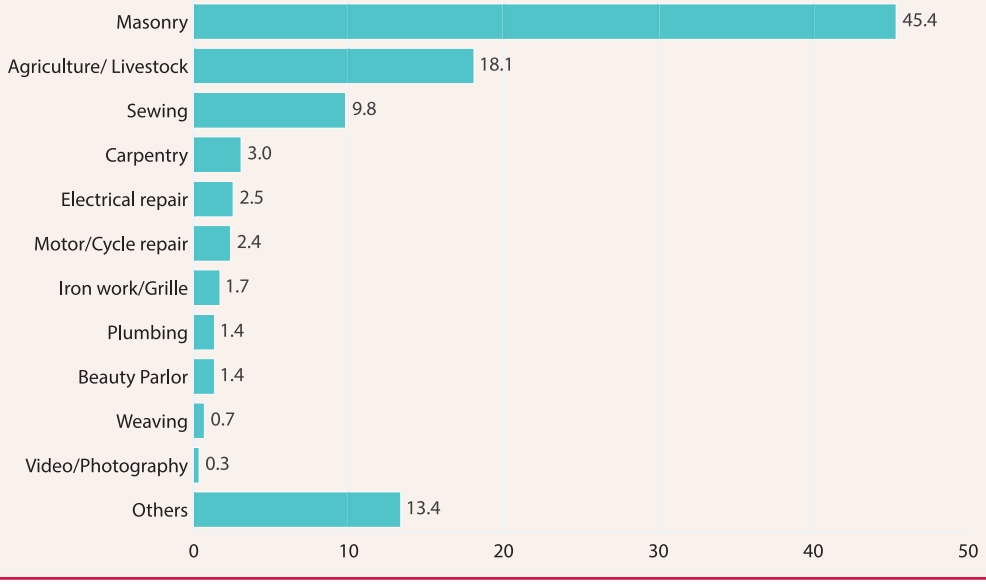
An interesting pattern emerges from analysis of the household expenditure data within communities. Differences among households become apparent when the data are disaggregated into 5 quantiles from the poorest with the lowest mean expenditure of NRs. 26,773 to richest with a mean expenditure of NRs. 154,133 (Table 4.3). Over half of all Dalit and Tamang households are concentrated in the poorest two categories while most Hill Brahmin and Newar households fall within in the richer 4th and 5th categories. In the absence of data to make a comparison between pre and post-earthquake situations, it is difficult to see the relationship with recovery. But given a large number of households living under the poverty line, the economic recovery has been disappointing for the poorer and marginalized groups.

Table 4.3: Percentage of households in different per-capita expenditure quintile (mean expenditure NRs.) by social groups, CRS 2019

Social Group	Per-capita expenditure quintile (mean expenditure NRs)					Total Household
	1st (NRs. 26,773)	2nd (NRs. 43,873)	3rd (NRs. 58,871)	4th (NRs. 80,281)	5th (NRs. 154,133)	
Brahmin (Hill)	15.6	13.7	23.4	21.6	25.8	404
Chhetri (Hill)	23.5	19.5	20.2	19.5	17.3	728
Dalit (Hill)	36.6	21.6	16.1	16.0	9.6	259
Magar (Hill Janajati)	22.1	26.6	26.2	13.9	11.2	181
Newar (Hill Janajati)	15.8	20.5	16.1	22.1	25.6	413
Tamang (Hill Janajati)	33.0	22.2	18.5	15.4	10.9	938
Hill Janajati (Other)	25.2	29.0	20.8	13.5	11.5	354
Other	29.6	30.4	15.7	21.7	2.6	23
Total	**25.5**	**21.4**	**19.6**	**17.7**	**15.9**	**3,300**

In the realm of economic recovery, the government and other external agencies have focused primarily on trainings. In addition to the government agencies, roughly 45 external organizations have provided trainings on agriculture, livestock, and livelihood improvement. Training subjects included masonry, agriculture and livestock improvement, sewing, carpentry, electronic wiring and repairs, motor/cycle repair, ironwork/grille, plumbing, beauty parlor, weaving, video/photography and others. The overwhelming number of trainings was for masonry (Figure 4.4).

Figure 4.4: Types of training provided for livelihood improvement (percent), CRS 2019



Our ethnographic field study confirms that training participants who were already working as masons in the village prior to the earthquake were able to use the training skills for constructing earthquake-resistant buildings and found additional opportunities to work for wages. The wage rate for skilled laborers such as masons, electricians, carpenters, and plumbers rose as high as NRs 2,000 from the previous rate of approximately NRs. 700/day. As the reconstruction works comes to an end, training recipients have begun to look for work elsewhere. Field ethnographic research also showed that the majority of the construction workers in the affected districts came from outside the region -- from northern India, Tarai/Madhes and western hills of Nepal.

Respondents in the sample survey reported that out of the total respondents 5.4 percent of people have received training. Unfortunately, only 4 percent of them were able to utilize the skills (Figure 4.5). A caste and ethnicity breakdown shows that a slightly higher percentage of households from Dalits and Adivasi Janajatis received the training as well as utilized the skills. A higher benefit to Dalits is a positive step in terms of addressing an important dimension of economic vulnerability, although the training itself might have an insignificant effect on improving livelihood. Trainings provided on agriculture, livestock, and employment generation certainly had a positive impact but it remains far less than what is needed.

Figure 4.5: Percentage of people who received and used training for livelihood improvement by social groups, CRS 2019

Many external agencies were involved right from the relief phase and some continued through recovery. During the recovery period, besides support for private house reconstruction, their support also went to reconstructing damaged school buildings, health facilities, heritage sites, and government buildings, as well as infrastructure such as roads and drinking water supply systems. Construction work generated a significant amount of work for wage laborers, as well as associated economic activities of transportation and other services in the area.[58] This has provided seasonal work opportunity for wage laborers during the winter.

In addition to government-funded projects, more than 250 development partner organizations worked in the earthquake districts from the relief support phase through recovery.[59] These partner organizations include United Nations agencies, bilateral donor countries, international and national NGOs, philanthropic organizations and others. Their objectives vary from support for private housing to agriculture and livelihood, disaster preparedness and other types of infrastructure construction. These organizations generally had staff hired from outside the region; they employed locals as data collectors, social mobilizers and other support work. Short-term employment generated for locals as support staff in these organizations could also be counted as an aid to the livelihood enhancement of the people involved.

4.3 Household food sufficiency

The indicator for food self-sufficiency assesses the number of months that a household's agricultural production can feed the family. Almost all families in the earthquake affected region are fully or largely dependent upon agriculture. The earthquake damaged food stock and crops, reducing food supply for families dependent on agriculture. Food supply reductions pushed families into hunger and poor nutrition, especially children, lactating mothers, and pregnant women. Buying food also forced households to postpone healthcare and education.[60]

Our survey shows that the food sufficiency level before the earthquakes and four years afterwards has only small differences, despite the loss in food stock during the earthquakes and possible decrease in crop productivity due to disruption in irrigation, market and other agricultural infrastructures.

Even before the earthquakes, the region had a high population with less than year-round food sufficiency. Three percent of families had no food production of its own and around two-thirds of households had less than six months of food sufficiency.

The situation after four years of disaster shows an only minor increase in these two categories. Similarly, before the earthquakes, 19.2 percent of families had food sufficiency for 12 months; now 18.3 percent do (Figure 4.6). This indicates that the food sufficiency level is similar to the pre-earthquake level. Nevertheless, the pre-earthquake food deficit and the slight decrease in food sufficiency after the earthquakes show that food security remains a challenge in the region.

58 The Kathmandu Post "Post-earthquake rebuilding added 4.5 percent to growth rate, says report, but economists disagree" December 26, 2019. The report based on the study by the Society of Economic Journalists Nepal (SEJON) conducted in association with the National Reconstruction Authority (NRA) claimed that housing reconstruction alone created jobs equal to 255 million man days which is equivalent to 1.42 million people being employed by the end of fiscal 2017-18. https://kathmandupost.com/money/2019/12/26/post-earthquake-rebuilding-added-to-the-growth-rate-says-report-but-economists-disagree

59 HRRP, https://www.hrrpnepal.org/maps-infographics

60 Post Disaster Needs Assessment, 2015. Pp. 21.

Figure 4.6: Percentage of households with months of food sufficiency before and earthquake, CRS 2019

The earthquake hit agricultural communities particularly hard when it caused major landslides and displaced settlements. In Haku village in Rasuwa District and Baruwa village in Sindhupalchowk, agriculture came to a complete halt for at least two seasons. Other factors also reduced food production. The price of agricultural products dropped and the cost of agricultural inputs, including labor, climbed. Combined, these brought lower returns on investment.

The region's agricultural sector faced challenges even before the earthquake. The government made few investments and offered few programs. Younger people of more educated and richer families look for non-agriculture jobs. The inadequacy of agriculture for employment in the rural areas as well as its limits in meeting consumption desires of a growing population has resulted in dramatic increased in labor out-migration during the last one and half-decade. The outmigration of economically active youths from rural areas has, in turn, not only caused neglect in agriculture with increasing amounts of fallow land but also reduced support to the senior family members who could continue turning agricultural investments into productivity.

After the earthquake, the highest number of households with no or less than six months' food sufficiency is among Dalits (over 83%) and other hill Janajati. Newars also have a high level of food deficit households but this is because they generally have non- agriculture employment. 25 percent of Tamang and Chhetri families have less than six months food sufficiency (Table 4.4).

Table 4.4: Percentage of households with months of food sufficiency by social group, CRS 2019

Social Group	Food sufficiency in month (after the earthquake)				Total Household
	Less than 3 months	4-6 months	7-11 months	12 months and above	
Brahmin (Hill)	16.7	41.2	12.7	29.4	404
Chhetri (Hill)	26.8	41.3	14.5	17.5	728
Dalit (Hill)	36.5	47.3	8.6	7.7	259
Magar (Hill Janajati)	17	42.8	19.5	20.8	181
Newar (Hill Janajati)	38.7	35.8	13.2	12.4	413
Tamang (Hill Janajati)	23.5	41.9	14.3	20.4	938
Hill Janajati (Other)	36.3	37.2	13.9	12.6	354
Other	38.1	28.6	9.6	23.8	23
Total	**27**	**40.9**	**13.8**	**18.3**	**3,300**

Household-level food sufficiency is very important for families reliant upon agriculture but households who have non-agricultural employment (like many Newars who run small businesses) may be able to buy food items from their income. It is therefore essential to look at other aspects of the household economy for assessing recovery.

4.4 Community differences and solidarity

In the four years after the earthquakes, communities have gradually resumed normality in their daily routines, kinship and social obligations, and other community processes. This normality includes both new and old patterns. What is new is the material loss and grief for lost family and friends. But the same social structures, class and caste hierarchies, gender roles, and values have returned to shape everyday life. The sense of common fate and solidarity sprang immediately after the physical destruction but dissipated as the threat to life faded away. The earthquakes did not change the social structure and power relations. The poor remain poor and the rich remain rich, or if not, they become richer. But along with these differences also exist social cohesion from kin relations and community solidarity expressed in the form of support to others in times of crisis.

A sense of euphoric solidarity, however, lasted longer in Nepal than it might have otherwise because the 25 April 2015 earthquake was followed by another major quake, two and a half weeks later, on 12 May and subsequent several large tremors after that. Mutual support continued through the rainy season from June to August, as people lived in tents amid the storms, threat of landslides, and general fear. But disillusionment started to spread as people saw unequal amounts of damage and extent of loss. They saw that the calamity brought heavier burdens to some than to others.

The arrival of relief materials from the outside highlighted the differences between those on the margins and those with access to the state and outside resources. Those villages nearest to the road, those who had connections to government officials and non-government institutions, and those regions where influential political leaders hail from, received relief material more swiftly than others.

Relief materials such as tarpaulins, blankets, food, and medicines started to arrive a couple of weeks after the first earthquake. In three villages we studied, the distribution of goods was coordinated by the village committee and given to each household in need. In other villages, distributions by outside NGO staff did not go smoothly because of the lack of knowledge about the village. Cleavages within communities developed when it appeared that organizations, groups and political party cadres targeted favored villages and families with aid.

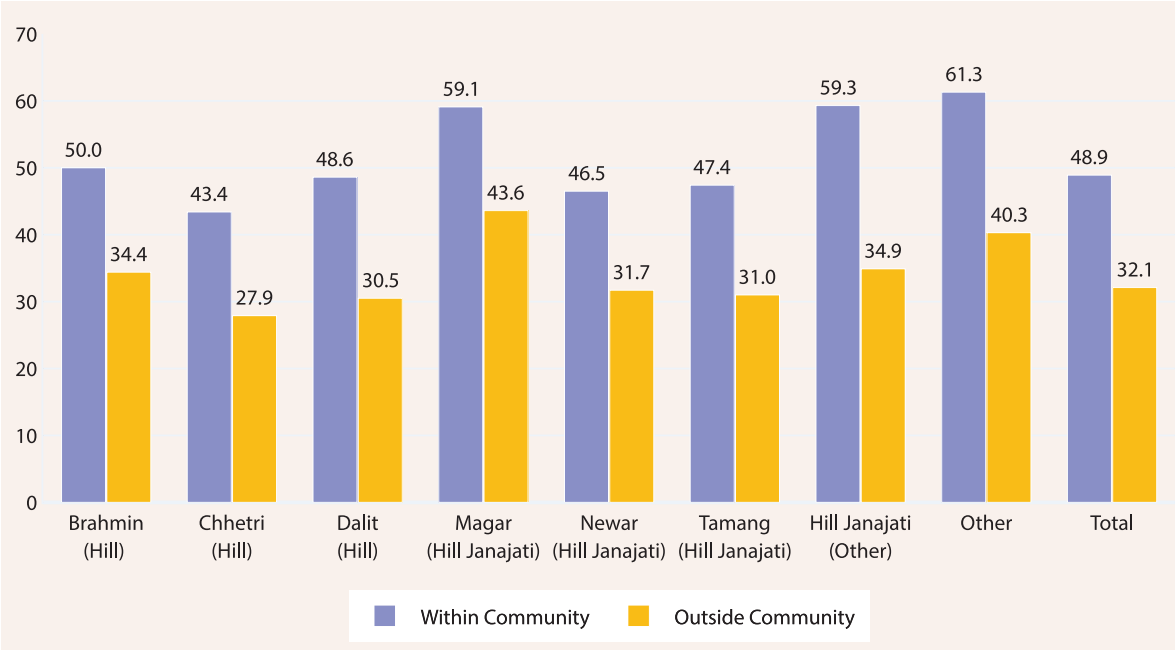
During the end of May 2015, the government started to carefully assess damage and identify earthquake beneficiaries. Government workers distributed red cards to those whose houses had been completely damaged and were eligible for reconstruction support. Some excluded from the eligible list believed that they had situations no different from others put on the list. Many families were left out because they did not understand the process and purpose of identification by government agencies or did not have knowledge of who to approach for eligibility. Because all the communication was solely done in Nepali, non-Nepali speakers without Nepali language proficiency found themselves at a disadvantage. Differentiation and discontent within the community reappeared.

Pre-disaster social stratification was equally at work when the families entered the phase of building temporary shelters. Those households who had savings, means of transportation, and connections with people of influence received galvanized zinc sheets faster than others still in tents. A feeling of envy and unfairness emerged among those who felt the system was unfair.

Pre-existing inequalities also shaped their decisions. Households made decisions to reconstruct houses according to their financial and other capacities, and pursued its livelihood recovery based on available human and productive resources. Meanwhile, people voted according to political preferences in local elections in early 2017 and federal and provincial parliament elections in November-December 2017. The recovery phase was characterized by the return of social structure, hierarchy, class differentiation, and political differences.

At the local level, despite the cleavages and inequality, which became more pronounced with external interventions, mutual support among community members became a central strength for recovery. Mutual community support was important, as it is in any recovery process, especially when external support is limited. Survey results show that during reconstruction, around half of the households provided support to members of their communities. Similarly, around one-third of households extended their support to members outside of their own communities (Figure 4.7).

Figure 4.7 : Community Support : Housholds who provided support to others during reconstruction, CRS 2019



Community mutual support in the time of emergency in Nepal, particularly among rural communities, was substantial. No significant difference was found among the caste groups in terms of providing help to members from their own or outside their communities. Community solidarity, despite internal differences and divisions, is found to be an important element in recovery.

Collective action was demonstrated when groups organized themselves to voice complaints about exclusion from the house reconstruction eligibility list. While each household struggled to assemble papers and navigate bureaucratic hassles for government grants, people who felt that they were unjustly excluded from the beneficiary list joined together in collectives and staged protests in all districts. The government decision to form a grievance redressal mechanism is partly a result of these protests.

4.5 Perceptions about bouncing back

The survey asked respondents to compare their current post-earthquake situation to their pre-disaster condition including social, economic and other aspects of living. The respondents were asked whether their current situation was better than before, the same as before, or worse than before. 35.7 percent of families felt that their situation had improved, 43.9 percent thought their situation the same as before, and the remaining 20.4 percent reported that their situation had worsened (Figure 4.8).

There was no marked difference by social group on perception of life before and after the 2015 earthquakes (Figure 4.9). Nevertheless, it is noteworthy that the highest percentage of households (42.1%) who felt that their situation has become better than before are from Dalit community. This is good news but this needs to be taken in the light of their low pre-existing condition. Interestingly, Dalits also have a higher proportion of households (22.4%) who felt their situation had worsened compared to the situation before the earthquakes.

Figure 4.8: Bouncing back: Household perception of situation before and after the earthquake (percent), CRS 2019

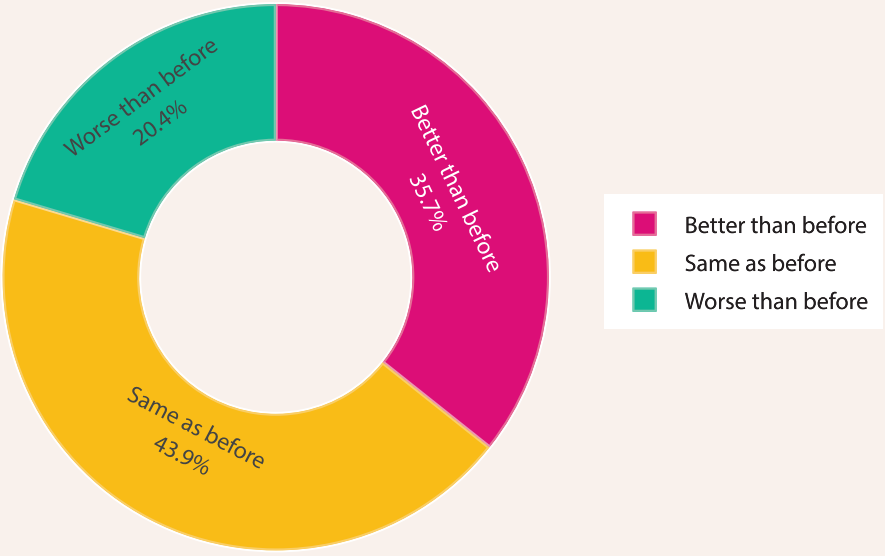
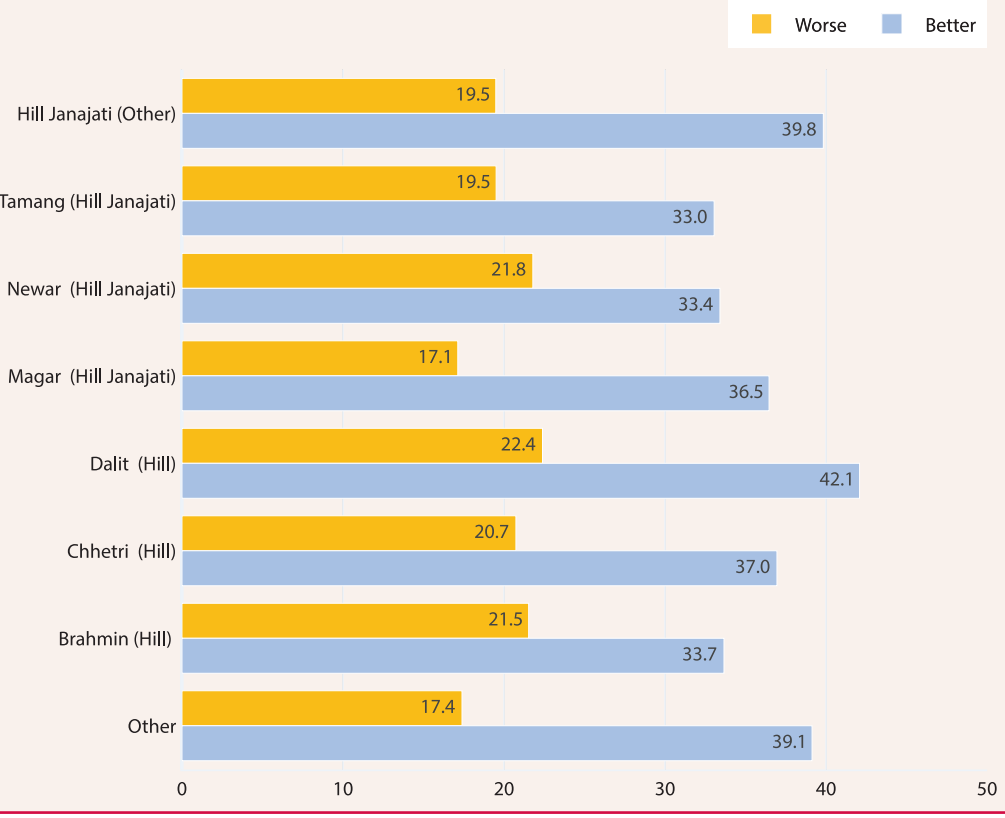
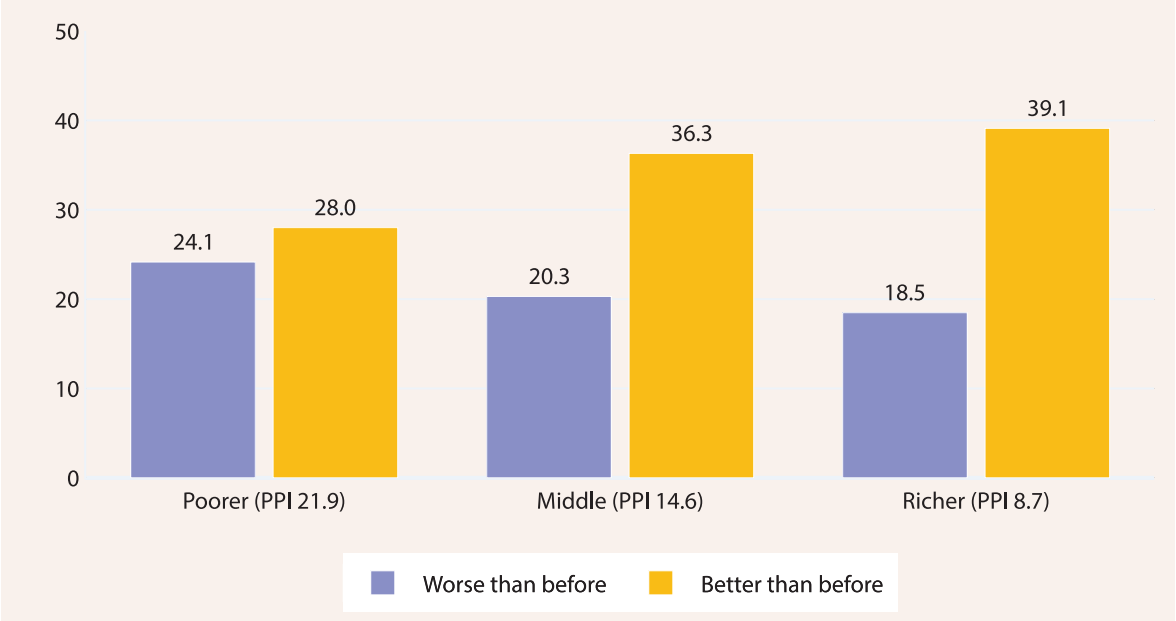


Figure 4.9: Bouncing back- household perception of situation before and after the earthquake by social group (percent), CRS 2019



The perceptions difference is sharper when compared by the economic situation of the households. Comparative analysis of three strata of household economic status based on mean PPI score shows that the poorer households tend to have a higher percentage of households who felt that their situation has worsened compared to before the earthquake (Figure 4.10). Consistent with this data, the Dalits have fewer households who found their situation better after recovery. The richer households show the opposite pattern – there were lower numbers of houses who experienced deterioration of the situation and higher numbers who found the current situation better than before.

Figure 4.10: Bouncing back- household perception of situation before and after the earthquake by economic status (percent), CRS 2019



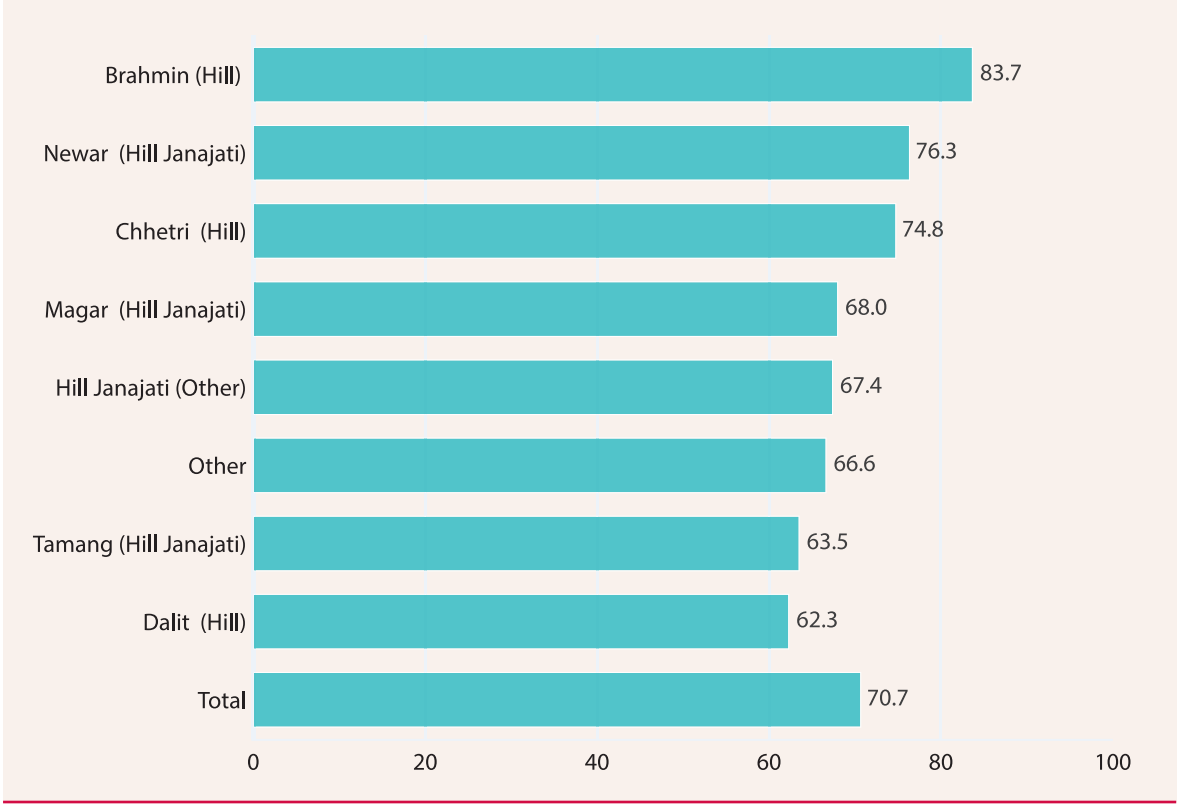
Around one fourth of the families falling in the poorer category reported that their situation had worsened. This indicates that poorer families from all social groups experienced deteriorating conditions. Poverty, however, is not evenly distributed across social groups. Higher concentration of poverty is among the historically marginalized social groups including Dalits, Tamangs, Magars and other hill Janajatis. This is also true for female-headed households, among whom, 23 percent felt that their situation had worsened across social groups.

Overall, 35.8 percent of families reported improvement. Two groups of families tended to report improvement: well-off families and the landless. Well-off families replaced their old house with a new earthquake-resistant building using their savings. These families also had at least one family member who had regular employment and salary. Landless and destitute families who had a dire situation prior to the earthquake also reported improvement. For them, normal daily life itself had resembled a disaster situation, so even a one-room house proved to be a significant improvement.

Those who reported the current situation as the same as before are content with whatever they have been able to do for disaster recovery. The 20 percent who perceived their situation as worse than before are those who have not been able to build a house or recover their household economy to the normal stage, if not collapsed.

To sum up, the reconstruction of houses has been partially completed. The space available in the new houses is only minimally adequate for the majority of the households. The recovery of livelihood, however, has been significantly limited. Around one third of the households felt that their situation has improved while one fifth found their situation worsened compared to the pre-earthquake situation. A composite index of the recovery status (Figure 4.11) based on four primary indicators; status of house reconstruction, all three tranches of grants taken, level of per capita expenditure and overall bounced back perception, reveals that Brahmins followed by Newars and Chhetris have achieved considerable success. The Dalits and Tamangs remain behind in terms of overall recovery status.[61]

Figure 4.11 : Recovery Status composite index by social group (percentage of households), CRS 2019



The people have mobilized their social capital and mutual support within the community at the time of the relief and reconstruction phase of the earthquakes. The poorer section of the community depended more on mutual support, government grant and informal loans. The better-off households mobilized their own resources together with their links for support.

61 Composite index for recovery status was computed as a simple average of the variables (house constructed, all 3 grants received, overall bounced back perception and expenditure per capita) in terms of 100. Amount of expenditure was normalized in terms of 100. The formula [(Actual - Minimum)/ (Maximum - Minimum)] *100 was used for calculation.

CHAPTER 5

Household Resilience Capacity

CHAPTER 5

Household Resilience Capacity

To measure household resilience capacity, 20 indicators under seven categories were selected. We selected resilience capacities related to household characteristics that could either hold back or facilitate preparing for, adapting to, and recovering from the earthquakes. Other researchers have classified resilience capacities as absorptive, adaptive, or transformative, but because these three categories often overlap with each other, they are not being classified this way in this study.[62] Only descriptive data on resilience capacity indicators are presented at this stage without looking at the correlation between damage, recovery, or wellbeing status and capacity.

5.1 Poverty Probability Index

For the people living below the poverty line, a disaster such as an earthquake is an extreme state where the resilience capacity of the household approaches zero. The poverty line may be taken as a threshold for resilience capacity. For those below the poverty line, disaster eats the meager material possessions they have and thrusts them into added poverty. Poverty further extends and intensifies stress associated with a lack of resources and slows post-traumatic recovery and injury healing.

This study employs the Poverty Probability Index (PPI) as a poverty measurement tool to assess household poverty.[63] The PPI helps identify the households that are most likely to be poor. It is based on a set of 10 questions related to household characteristics and asset ownership standardized for international comparison. The answers to each question are scored to compute the likelihood of a household living below the poverty line. This study utilizes the $1.25 per day as poverty line.[64] The questions are related to household size, employment of the breadwinner, number of bedrooms, construction material of house walls and roofs, kitchen, type of cooking fuel, toilet, telephone, and irrigation facility for agriculture. These household characteristics represent a standard of living, which is converted into a probability that a given household is poor based on three poverty lines - $1.25, $2.0 and $2.5. The poverty line of $1.25 is most common for developing countries.[65]

For the 14 earthquake-affected districts, the overall PPI is 15.1 percent (Figure 5.1). Tamangs have the highest percentage of households that are likely to be below the poverty line (19.1%), followed by Other Hill Janajati

62 For measurement of resilience of absorptive, adaptive, and transformative resilience capacity, see TANGO International. (2018). Methodological Guide: A Guide for Calculating Resilience Capacity. Produced by TANGO International as part of the Resilience Evaluation, Analysis and Learning (REAL) Associate Award.

63 https://www.povertyindex.org/about-ppi.

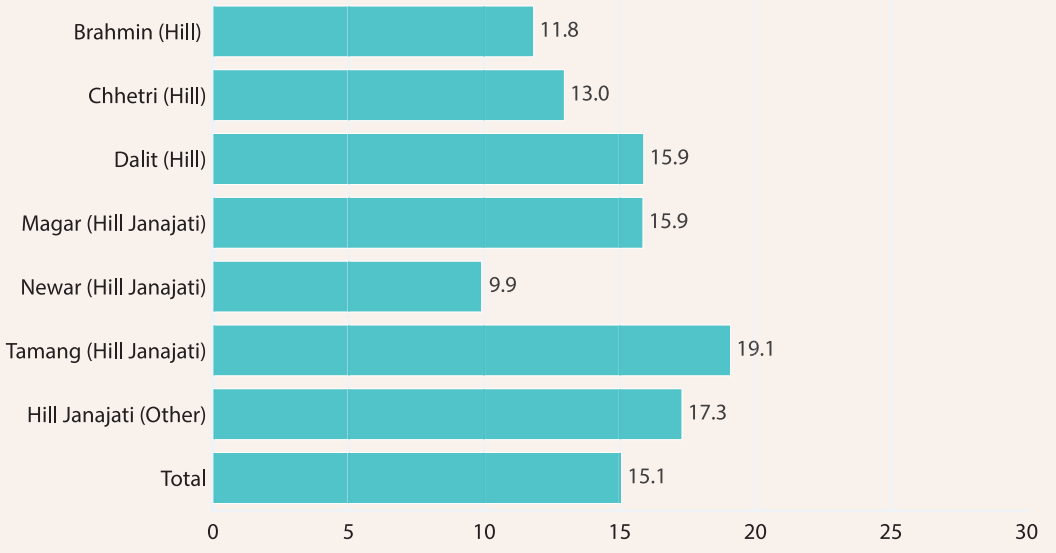
64 The World Bank updated the International Poverty Line used primarily to track global extreme poverty from $ 1.25 to $1.90 in October 2015. https://www.worldbank.org/en/topic/poverty/brief/global-poverty-line-faq

This study used $1.25 for analysis for two reasons; a) the poverty line of $1.25 is most common for developing countries, b) to make compatible with the NSIS 2018 which utilizes the $1.25 poverty line to assess the change in poverty probability for whole country.

65 Mark Schreiner (2013). Simple poverty scorecard for poverty assessment tool, Nepal. www.simplepovertyscorecard.com.

(17.3%), Dalits (15.9%), and Magars (15.9%). Newars have the lowest percentage (9.9%) followed by Brahmins (11.8%) and Chhetris (13.0%). It should be highlighted that in all groups in the earthquake-affected districts, especially in the rural areas, the PPI rate is higher than the national average of 7.8 percent.[66]

Figure 5.1: Poverty Probability Index (US$ 1.25 per day PPP value) by social group, CRS 2019



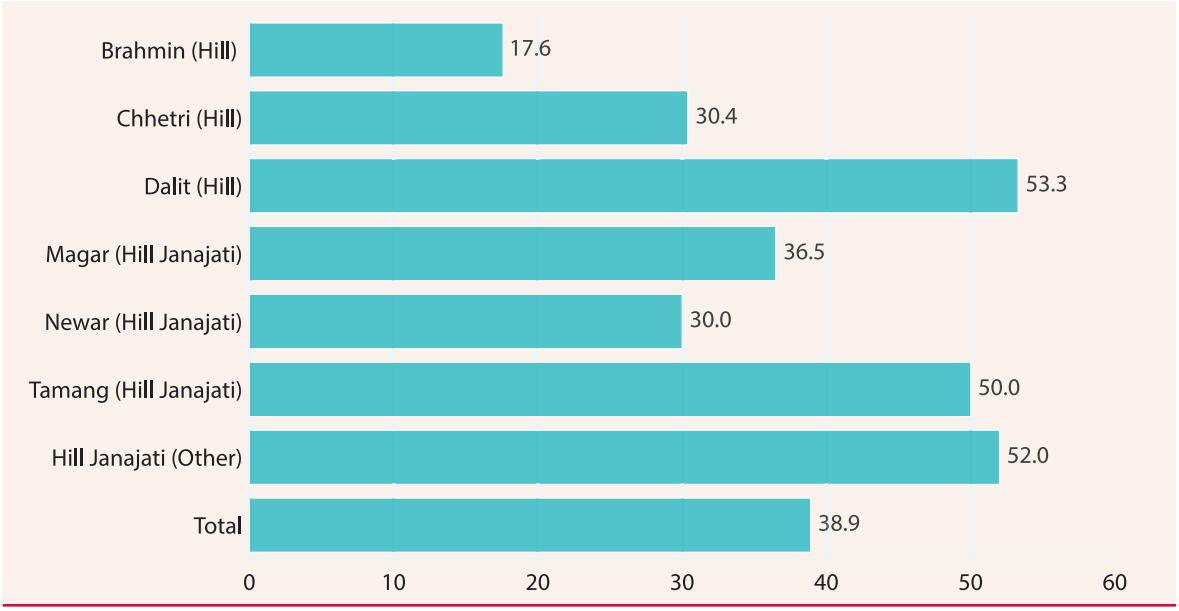
5.2 Employment as wage laborer

Households that are forced to send family members to work as wage and seasonal laborers (as opposed to salary work) in the informal sector are taken as one of the indicators for the assessment of resilience capacity. Those households who have salaried family members are better positioned for financial recovery, as the salaried incomes are generally higher. Similarly, those people self-employed in agriculture or other off-farm enterprises or trade have more resilience compared to households who need to sell their labor in the informal market. Wage laborers working in construction, agriculture or other sectors also work often in hazardous working conditions generally without the protections held by their counterparts working in the organized industrial sector.

In the survey area, 39 percent of the households depend on wage labor to supplement the household income. Dalits (53.3%) have the highest percentage of households working as wage laborers, followed closely by other Janajati (52.0%) and Tamangs (50.0%). Hill Brahmins (17.6%) have the lowest percentage (Figure 5.2).

66 Evidence from Nepal Social Inclusion Survey 2018, forthcoming report, Central Department of Anthropology, Tribhuvan University.

Figure 5.2: Percentage of households with member working as wage laborer by social group, CRS 2019



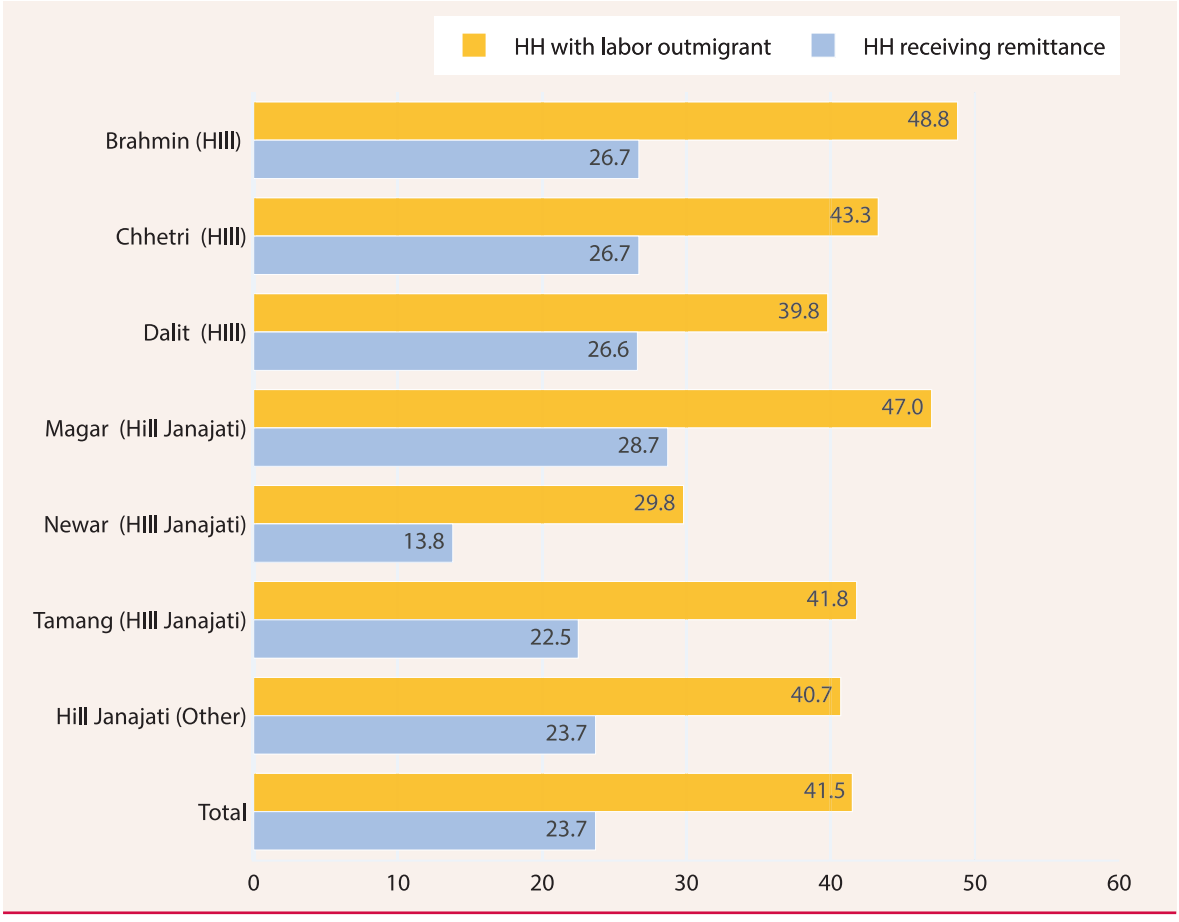
5.3 Remittances

Remittance of funds from out-migration within and outside the country has contributed to the reconstruction and recovery process in Nepal.[67] Overall, 41.5 percent of households have at least one migrant member who has left home for work.[68] Only 24.8 percent of households have reported that they have received remittance in the last episode of migration (Figure 5.3). Remittance received from out-migration within the country accounts for 47.4 percent, outside the country accounts for 28.8 percent of this share and from both sources are 23.8 percent. Not all labor migrants are able to send money back home. Interviews suggest that out-migration decreased immediately after the earthquake for about a year due to the need for labor and support in the family in Nepal. Despite this temporary shift, migration in subsequent years has risen, as youth are taking up out-migration for employment in cities and foreign countries as an economic coping strategy.

67 In 2018, Nepali migrant workers sent home $8.1 billion in 2018 which is 28 percent of the total GDP of the country. See, Migration and Remittances: Recent Developments and Outlook, 2019, The World Bank Group.
https://www.knomad.org/publication/migration-and-development-brief-31

68 This figure only includes the members who are currently out of home for work. Ministry of Health et al., 2017. Nepal Demographic and Health Survey 2016 reports national average of 47 percent households that have at least one migrant member who left home in 10 years preceding the survey.

Figure 5.3: Percentage of households receiving remittance from labor out-migrant members, CRS 2019

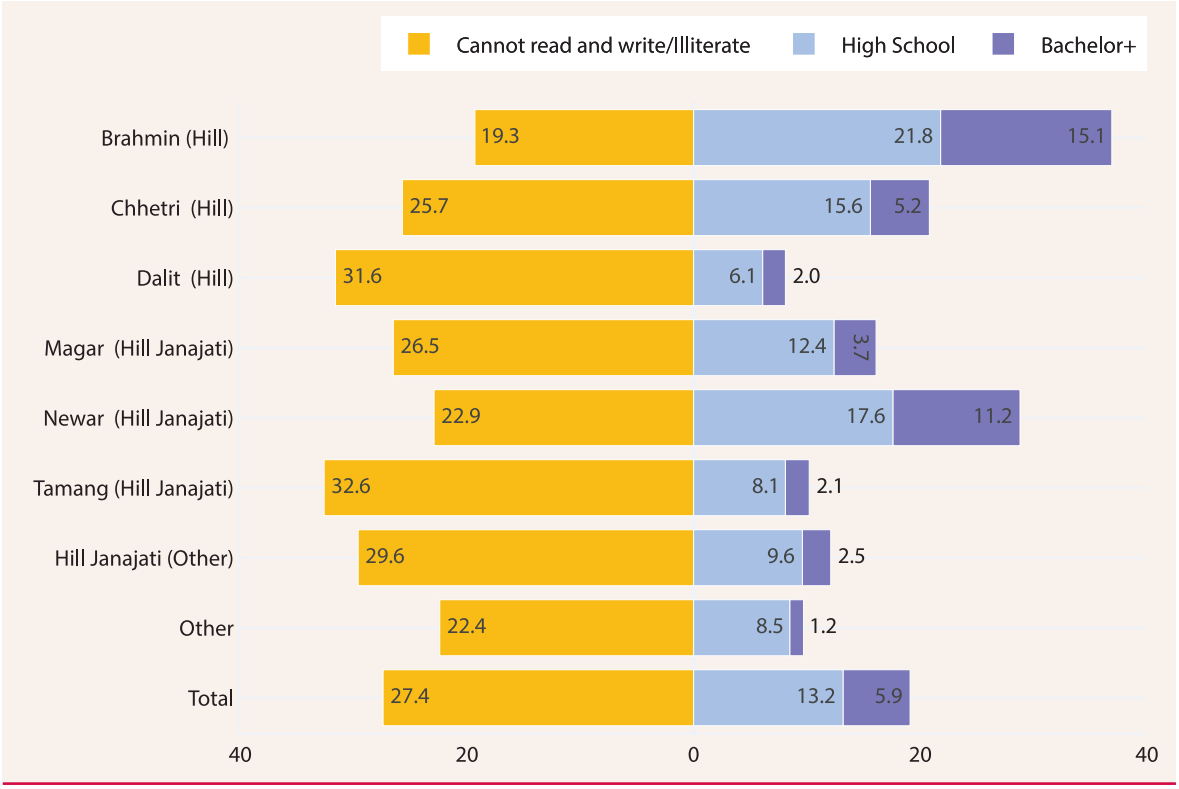


5.4 Educational status

Education has a significant bearing on resilience capacity. Education is important to help families access relevant information, access income-generating employment, as well as mobilize resources necessary for the recovery and reconstruction. Higher-level education contributes to preparedness, adaptation, and transformation of the disaster situation better. Illiteracy or inability to read and write not only makes a household low in resilience capacity, but can also bring a negative slide after a disaster.

The highest rate of illiteracy is concentrated among Tamangs (32.6%) and Hill Dalits (31.6%). The data disaggregation for bachelors' level and above shows that higher levels of education prevail among Brahmins (15.1%) and Newars (11.2%) followed by Chhetris (5.2). Dalits and Tamangs have an almost identical and lower rate of higher education completion, at 2.0 percent and 2.1 percent, respectively. This survey shows that the overall literacy rate (for the population aged 6 years and above) in the study area is 72.6 percent (Figure 5.4). Further analysis of the data by age reveals that literacy rate for people aged 40 and below is 89.2 percent while for the people above 40 years is only 59.5 percent.

Figure 5.4: Educational status (age 6 and above) by social group, CRS 2019



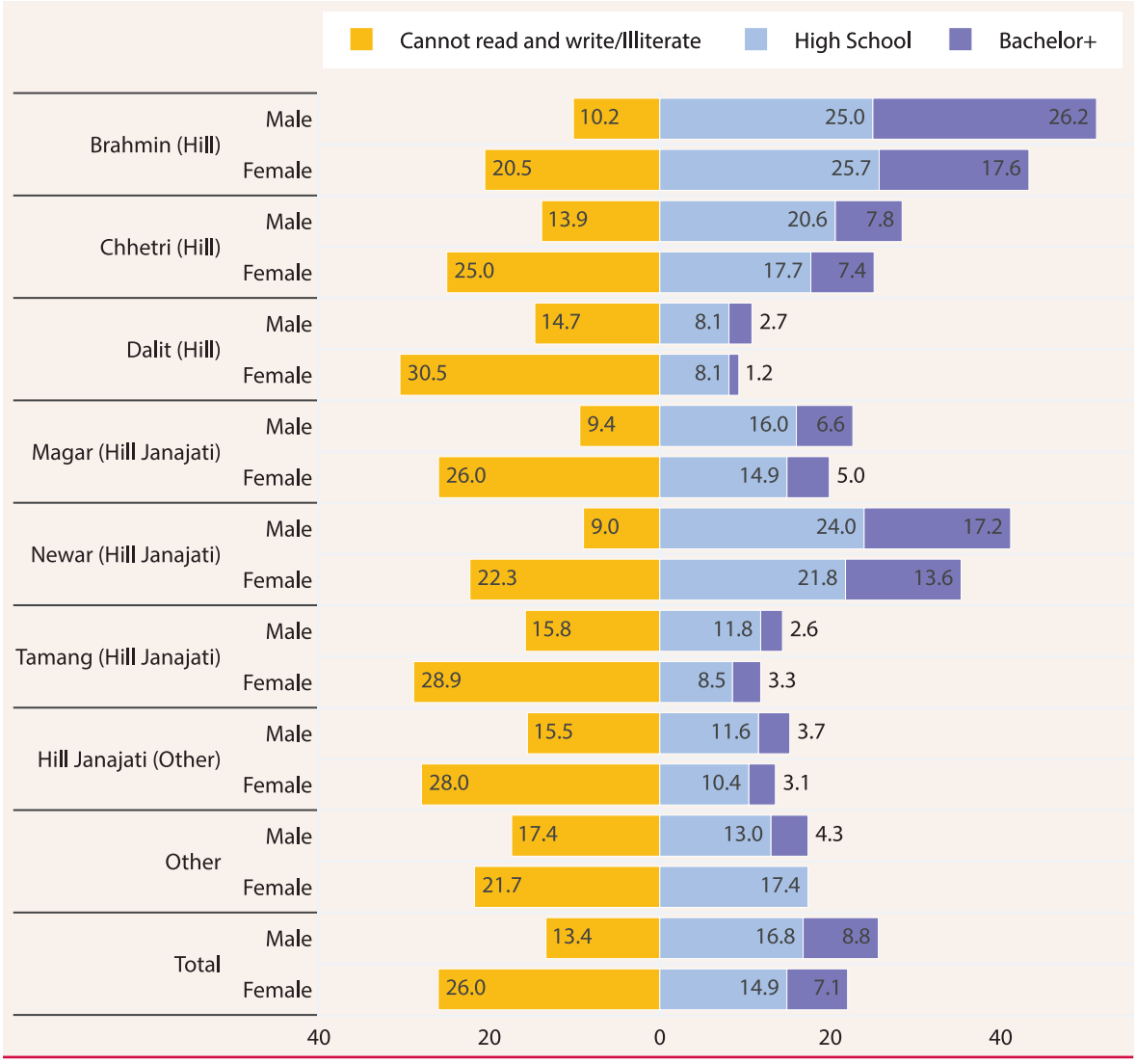
In all social groups, women have lower levels of education attainment than men (Figure 5.5). Illiteracy among women is twice that of males. The gender disparity is even more stark among those who have studied Bachelors and above, although women are catching up.

The dropout rate provides additional insights on education as resilience capacity. The earthquake increased the drop-out rate among school-going age children in the affected districts. In 2015, the national average for the school dropout was 6.5 percent.[69] The PDNA forecasted an aggravation in the risk of education-related vulnerabilities in the affected districts; mainly increase in out-of-school, dropout, repletion and non-completion in the most affected districts. The risk was much higher in school level than in higher education.[70]

69 Ministry of Education. (2015). Nepal education in figures 2015: At-a-glance. Kathmandu

70 NIRT (2016). Nepal Education Sector Analysis. Kathmandu, Nepal

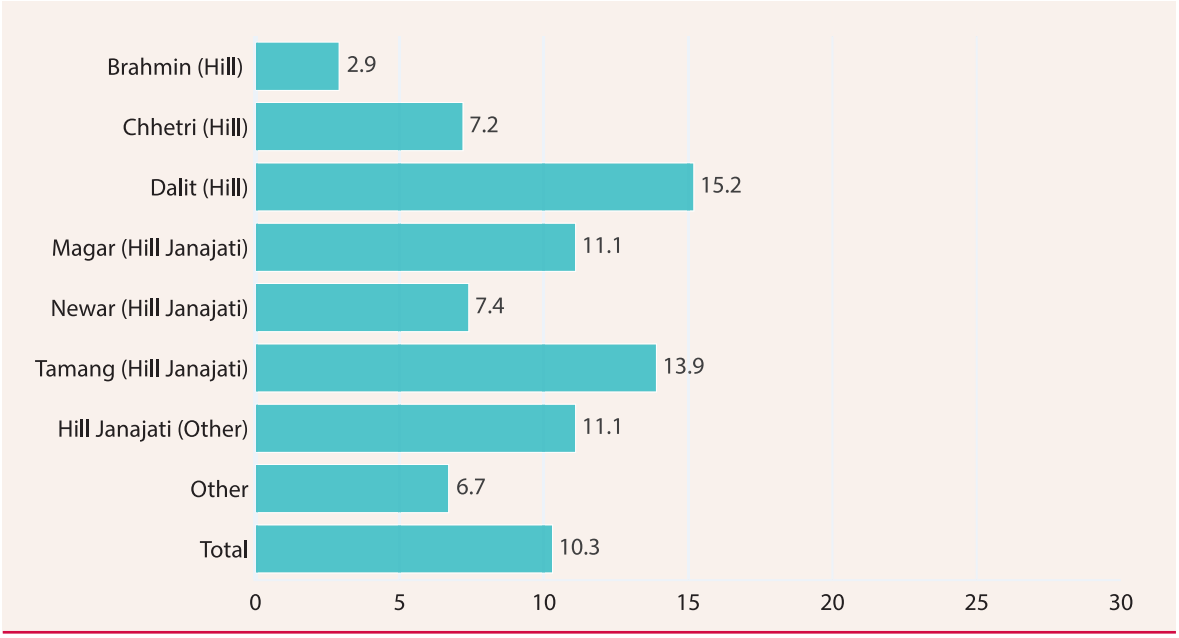
Figure 5.5: Educational status (age 6 and above) by social group and sex, CRS 2019



This study, undertaken after four years of the earthquakes, corroborates the PDNA's early assessment. Almost all groups reported higher rates of school dropouts (Figure 5.6). The highest rate of drop-out of school-age children between 6-18 years is among the Dalits (15.2%) followed by Tamangs (13.9%). The lowest drop-out rate is among Brahmins (2.9%), Chhetris (7.2%) and Newars (7.4%). Boys have higher rates of drop-out (12.6%) compared to girls (7.9%).[71]

71 National average of school dropout rate is 16.1 percent among school-age children 5-23 years; but it is only 7.6 percent among school-age children 5-17 years; and 9.2 percent among school-age children 6-17 years (CBS, 2017 in Annual Household Survey 2016/17).

Figure 5.6: Percentage of children (6-18 Years) dropped-out of school by social group, CRS 2019



Despite their high levels of school enrollment, Tamangs and Dalits have low education attainment levels for three reasons. Qualitative interviews suggest that there are multiple reasons for this. The first common reason is not discussed and analyzed much: unfriendly classroom and teacher behavior discourages them in education. Upper caste teachers hold many negative stereotypes of Tamang and Dalit children and have lower expectations of these groups. In subtle ways they convey a message to minority students that studies are not their field, and that they won't be able to succeed. The children feel degraded and discouraged; they sometimes stop working hard in their studies. The second common reason is starting employment before completing high school. This is caused partly by household poverty and partly by the frustration they experience in the school environment. Third, education in Nepal is provided in the Nepali language medium, not mother tongue. For indigenous children, language difficulty is the central reason for failing to comprehend course content and for dropping-out at an early stage. The survey shows the main reason for leaving school for Tamang children is that they could not succeed in their studies. Why they are left behind in the mainstream school needs systematic studies.

5.5 Access to information and communication technologies

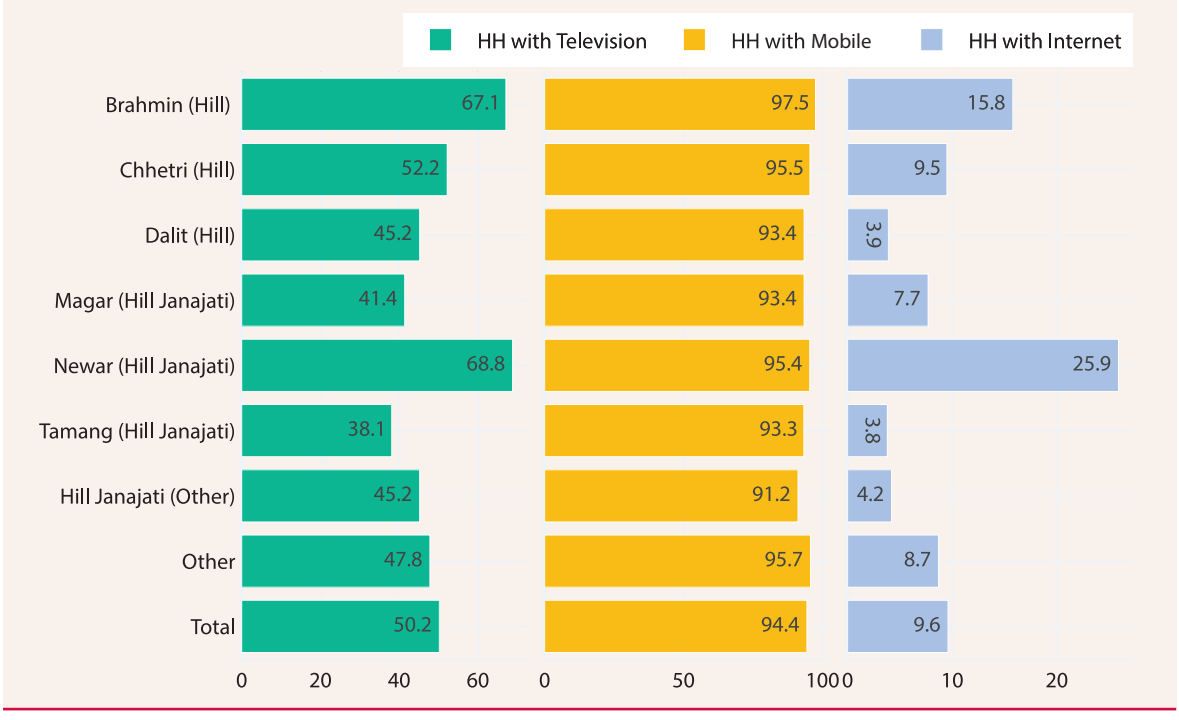
In recent decades, information and communication technologies have spread widely in Nepal; they have become a crucial way of acquiring information, and keeping connected with the public debate and community members. Communication technologies such as television, smartphones, and the internet can play an important role in disaster prevention, mitigation, response, and recovery. Timely information is particularly essential during the rescue operation and for government agencies and other humanitarian actors.

In the research area, there was little disparity with mobile phone accessibility but much higher disparity with internet and television access (Figure 5.7). In some groups, almost two thirds own televisions (Newar 68.8 percent, Brahmin 67.1 percent). On the other hand, Tamangs had the lowest rate of access to television with 38.1 percent.

The contrast is also sharp in access to the internet to home. Newars have the highest percentage of households (25.9%) with access, followed by Brahmins at 15.8 percent. Tamangs and Dalits are at the bottom again. Tamangs have 3.8 percent of households who have access to the internet and Dalits only 3.9 percent. The digital divide is indicative of serious disparity in access to information and other opportunities.

Mobile phone use has become common among all groups; 94.4 percent of households have at least one user. There is no obvious difference between different groups in terms of mobile use. 97.5 percent of Brahmins use mobiles; the three groups at the bottom are other Hill Janajati (91.2%), Tamangs (93.3%), and Dalits and Magars both with (93.4%).

Figure 5.7: Percentage of households with access to information and communication technologies by social group, CRS 2019

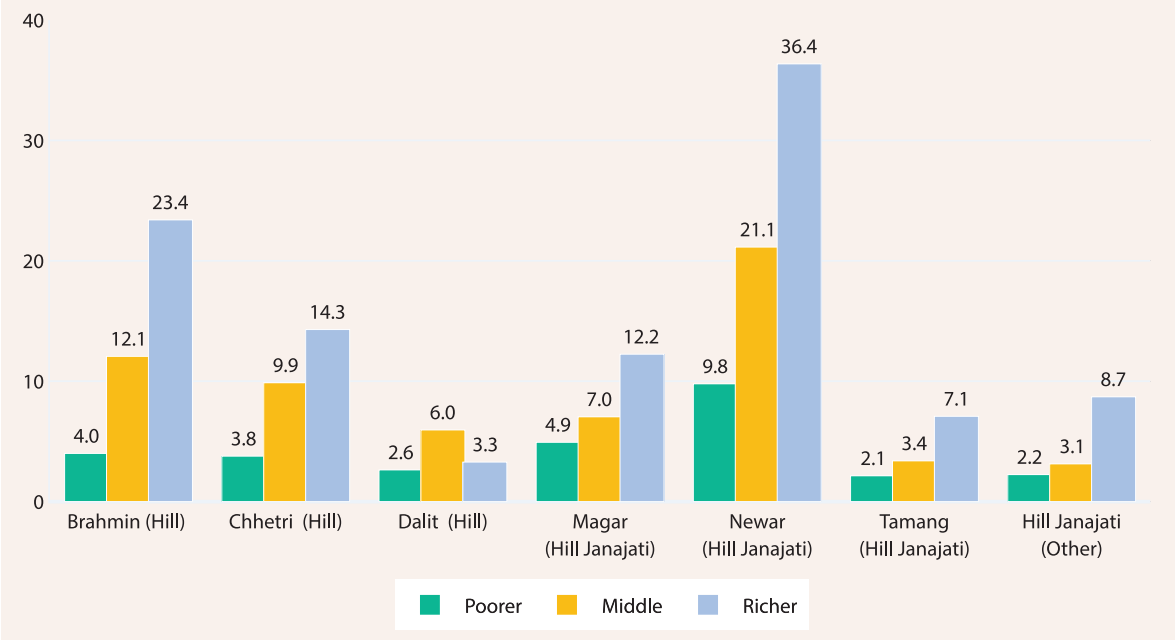


Access to the internet is one of the indicators within SDG goal 4 (related to inclusive and equitable quality education). The internet in the home provides access to necessary information and knowledge and a way to connect to national public debate and world happenings. While access to mobile phone service facilitates connection within the community, the internet provides information from beyond the community, which can play a useful role in disaster preparedness, mitigation and recovery. The analysis of access to the internet by household economic status shows a sharp disparity between poorer and richer households.

Only 7.6 percent of female-headed households have access to the internet, compared to 10.2 percent in other households.

The disparity is much higher when comparing the Kathmandu valley and outside the valley. 33 percent of Kathmandu valley households have access to the internet compared to only six percent of the households residing in the districts outside the valley (Figure 5.8).

Figure 5.8 : Percentage of households with access to internet by social group and economic status (PPI$125)

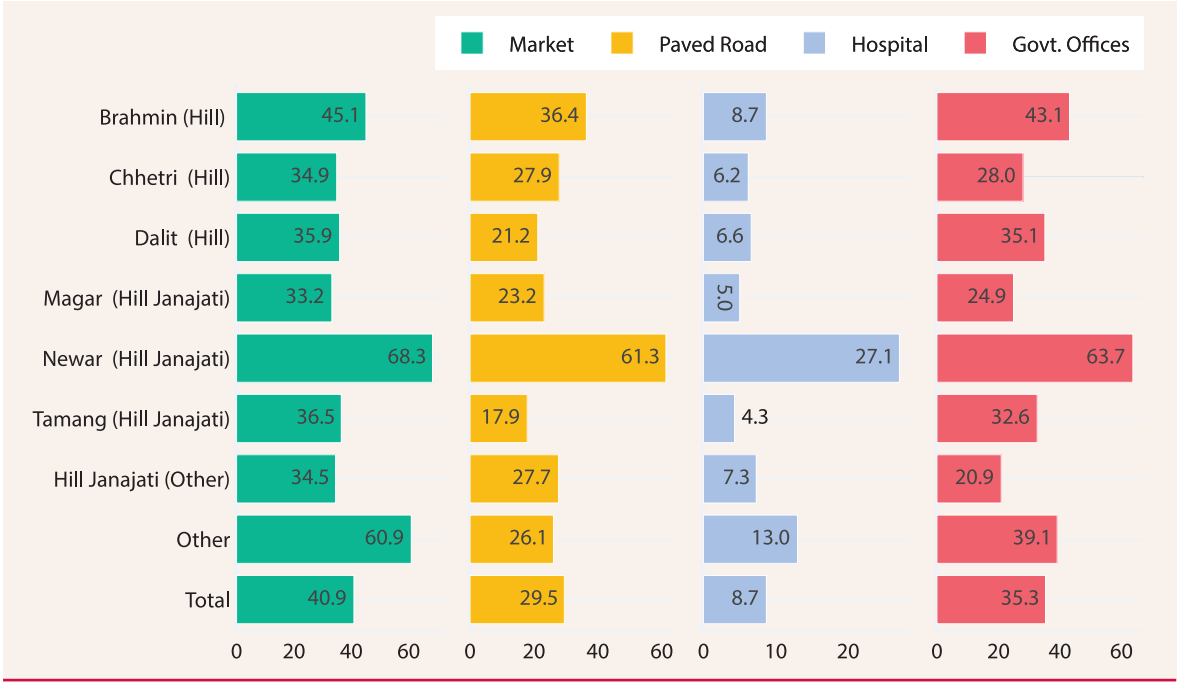


5.6 Distance to market, transportation, hospital, and services

Access to major services within 30 minutes walking distance has been taken as another major indicator for resilience capacity. Services include markets, paved roads, hospitals and government service centers such as local government office, agriculture service center and others. Access to the market is important, especially during emergency times, just after the shock, for essential supplies. The market is critical for the adaptive stage as well when the survivors struggle to restore their livelihood.

In the 14 most-affected districts, only 41 percent of households reported having access to a market within 30 minutes of walking time (Figure 5.9). The difference between social groups is quite substantial. 68.3 percent of Newar households have market access within 30 minutes; 45.1 percent of Brahmins do. All other groups have access to the market below the overall average.

Figure 5.9: Percentage of households with access to major services by social group, CRS 2019



The survey found that 29.5 percent of families have access to a paved road within 30 minutes of walking. Two-thirds of Newars and 36.4 percent of Brahmins have access within 30 minutes. Again, Tamangs (17.9%) and Dalits (21.2%) have the lowest rate of households with access to paved roads within 30 minutes.

A similar pattern is found for hospital access. Overall, only 8.7 percent of households reported having access to a hospital within 30 minutes of walking. Newars have the highest rate with 27.1 percent. All the social groups in the study area have access to hospital well below the average for the surveyed districts. The Tamang community, due to their concentration in the remote parts of the hill and mountain districts, have only 4.3 percent of households with access to a hospital within 30 minutes. Hospitals are critically important immediately after natural catastrophes.

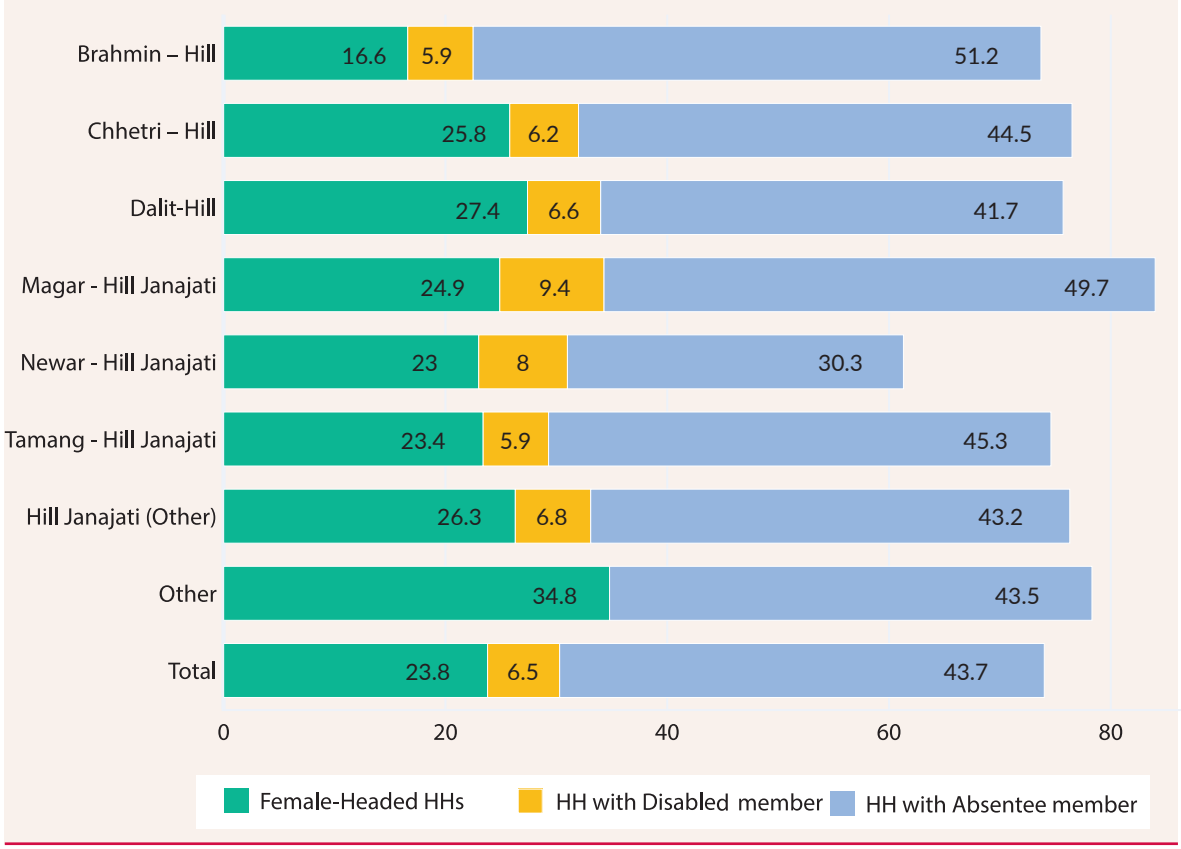
Access to government offices and services shows an identical pattern. Overall 35.3 percent of households reported having access to government services within the reach in half an hour. Newars and Brahmins have a higher rate of access to these services within 30 minutes of walking. The settlement of Newars primarily at or near the district centers is likely the main reason why they have better access to the services mentioned above since most of these services are centered there.

5.7 Households demographic characteristics

Three household demographic characteristics are taken as indicators of low household resilience. They include female-headed households, households with persons with disabilities, and households with an absentee member. These characteristics not only reduce productivity but also decrease the family's ability to acquire assistance available for the recovery from disaster.

According to the CRS results (Figure 5.10), overall 23.8 percent of households are headed by females. Although there is no big difference from one social group to another, Brahmins (16.6%) have fewer households headed by females than Dalits (27.4%). 6.5 percent of all households have at least one member with physical disabilities. Magars (9.4%) and Newars (8.0%) have a slightly higher rate of persons with disabilities. Regarding absentee household members, 43.5 percent of all households had a family member outside the house. Newars (30.3%) had the lowest number and Brahmins had the highest (51.2%).

Figure 5.10: Percentage of households with vulnerable demographic characteristics, CRS 2019

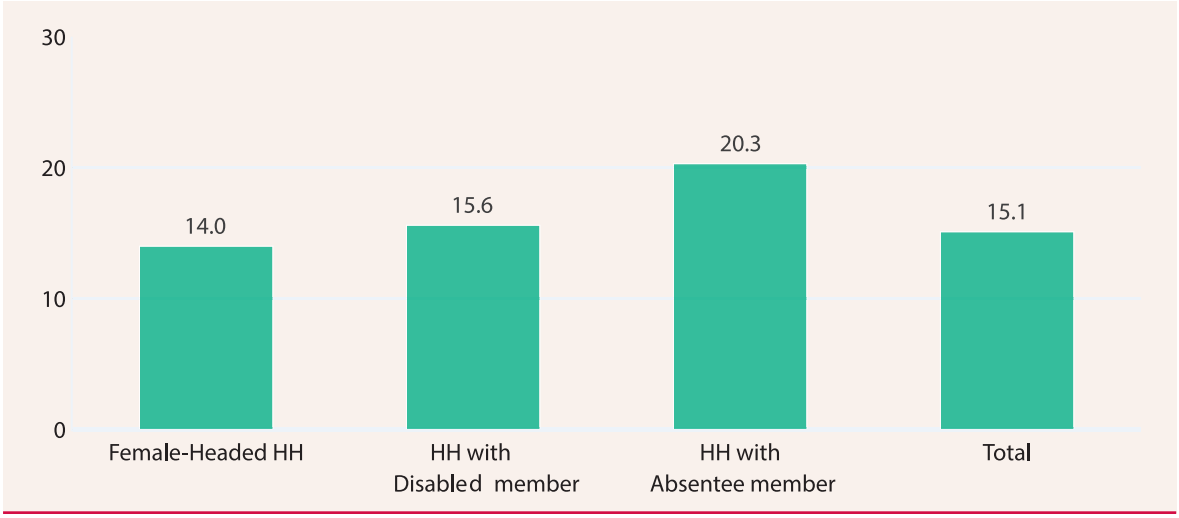


Female-headed households are generally led by single women, either widowed, separated or divorced or when the men are absent from the home. As a distinct set of the population, they experience higher levels of poverty due to a complex interplay of traditional and deeply rooted gender discrimination, and thus they are more vulnerable than other groups. People with disabilities live with physical barriers and suffer inaccessibility to communications along with discrimination. People with physical and mental disabilities also do not get the necessary health and other services required, and such disabilities are also marked by social stigma. Except when he or she is sending remittance or other forms of support, the absence of a family member at the time of disaster has an overall adverse effect on households' recovery, particularly in relation to having less helping hands around the house to support the relief and recovery of the households.

The PPI score for the households with the above three characteristics shows a greater likelihood of marginalization. The survey shows that PPI score for female-headed households is 14.0 and households with a person with

disabilities, is higher at 15.6. This is around the overall average for the earthquake affected area but higher than other better-off social groups. The likelihood of falling below the poverty line for the households with absentee member(s) is the highest (at 20.3 percent), indicating a lower level of resilience capacity (Figure 5.11).

Figure 5.11: Poverty Probability Index (PPI $125) score by households with vulnerable demographic characteristics, CRS 2019



5.8 Social capital

Social capital is: 1) the relationships between people based on norms of reciprocal support, and 2) the network extended within and beyond the community. Both are instrumental for enhancing resiliency.[72] Social capital is generally classified into three categories: "bonding", "bridging", and "linking" social capital.[73] Bonding social capital includes ties within the community involving immediate family members, kinship and relatives, friends and people with similar cultural and geographic characteristics. Bridging social capital, on the other hand, is tied with people of different cultural, ethnic, geographic or occupational backgrounds outside the community. Linking social capital is related with people in positions of influence and authority.

To measure "bonding" capital, this study looked at the households who provided or received support within the community in the form of food, cash, animals, or labor during the disaster and any other support during the reconstruction work.

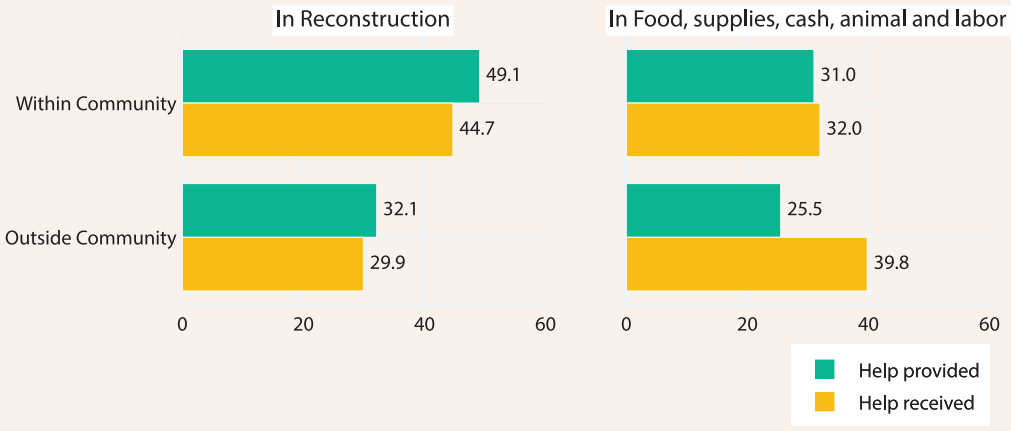
Our research shows that 1 in 2 households provided support during reconstruction, primarily labor and cash, and 1 in 3 received other kinds of support in the form of food, cash, animal or labor during the disaster. Around half of those who gave or received support did so from or to relatives (Figure 5.12).

72 For the concept of social capital, see Bourdieu, P. (1985). The forms of capital. In J. G. Richardson (Ed.), Handbook of theory and research for the sociology of education (pp. 241-258). New York, NY: Greenwood. And Putnam, R. (1995). Bowling alone. Journal of Democracy, 6(1), 65-78.

73 For bonding, bridging and linking social capital, see Aldrich, D. P. (2012). Building resilience: Social capital in post-disaster recovery. Chicago, IL: University of Chicago Press. Also see Woolcock, M. and Narayan, D. (2000), "Social capital: implications for development theory, research and policy", The World Bank Research Observer, Vo1. 15 No. 2, pp. 225-249.

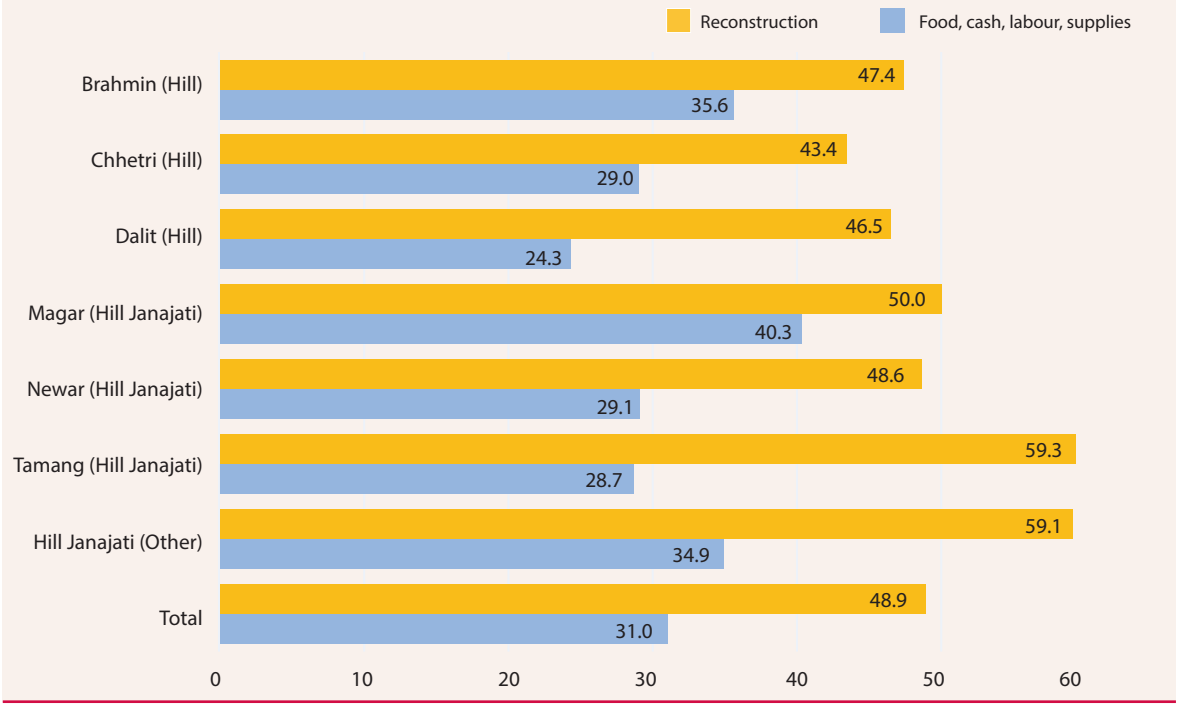
"Bridging" capital is support provided or received from outside the community in the form of in-kind gifts, cash or labor during the disaster and other support during the reconstruction. Roughly 1 in 3 households either received or gave support to people outside their community.

Figure 5.12: Social capital: percentage of households who provided and received help, CRS 2019



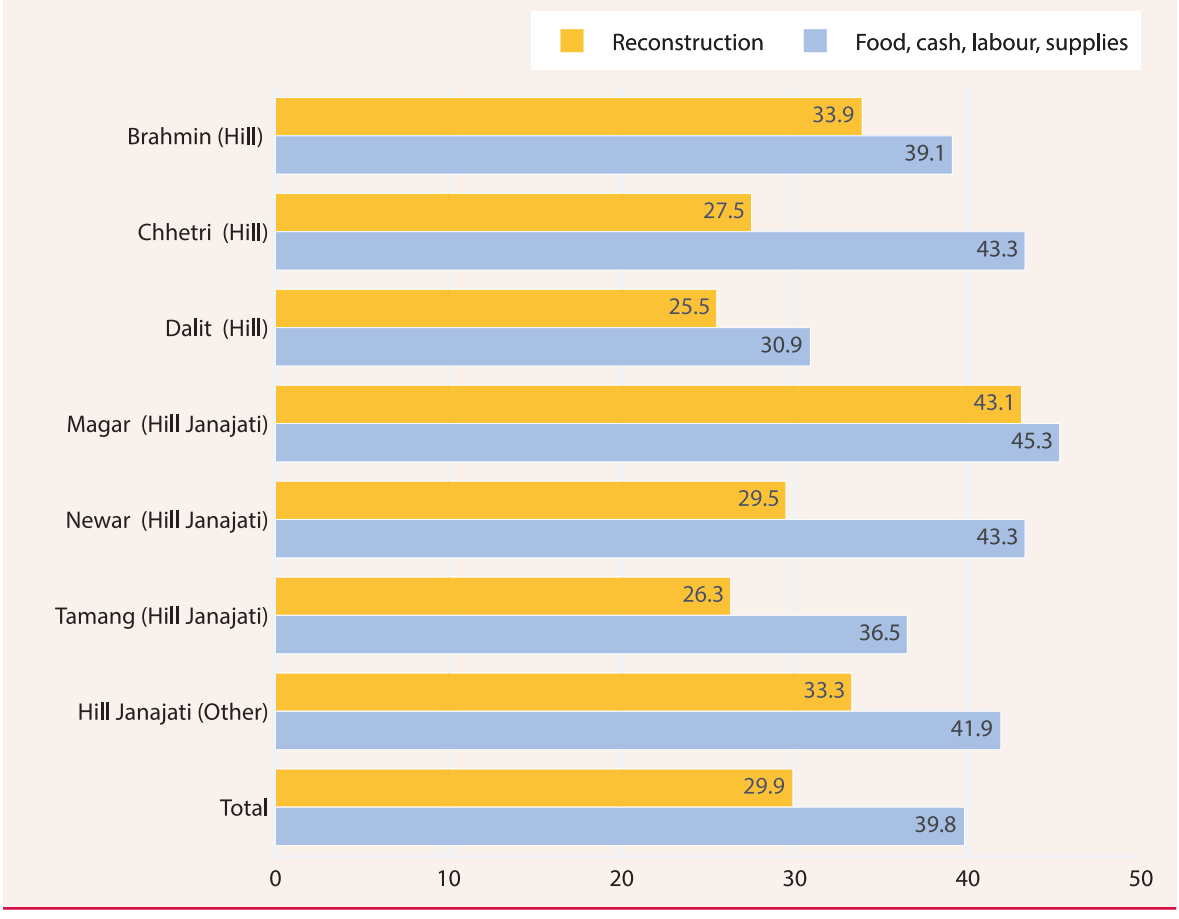
A comparison between social groups (Figure 5.13) shows that support given to community members during reconstruction is highest among Tamangs and Other Hill Janajati, followed by Magars. The rates for other groups are Brahmin (46.4%,), Dalit (46.5%), and Chhetris (43.4%). In all the social groups, the support provided in the forms of food, cash, supplies, animals, and labor is lower than the support provided in reconstruction. With regard to mutual support within communities, it is interesting to note that half came from relatives and near kin.

Figure 5.13 : Bonding social capital-percentage of households who provided support within community, CRS 2019



Support received from outside the community in the form of cash or kind can indicate "bridging" social capital. 40 percent of households reported that they received support from people outside their community (Figure 5.14). The support coming from a social network outside the community is relatively higher in the form of food, supplies, cash, animal or labor, immediately after the disaster than during the reconstruction. Comparison between social groups shows that Dalits and Tamangs have lower rates among those who received support from outside the community.

Figure 5.14: Bridging social capital- percentage of households who received support from souside community, CRS 2019

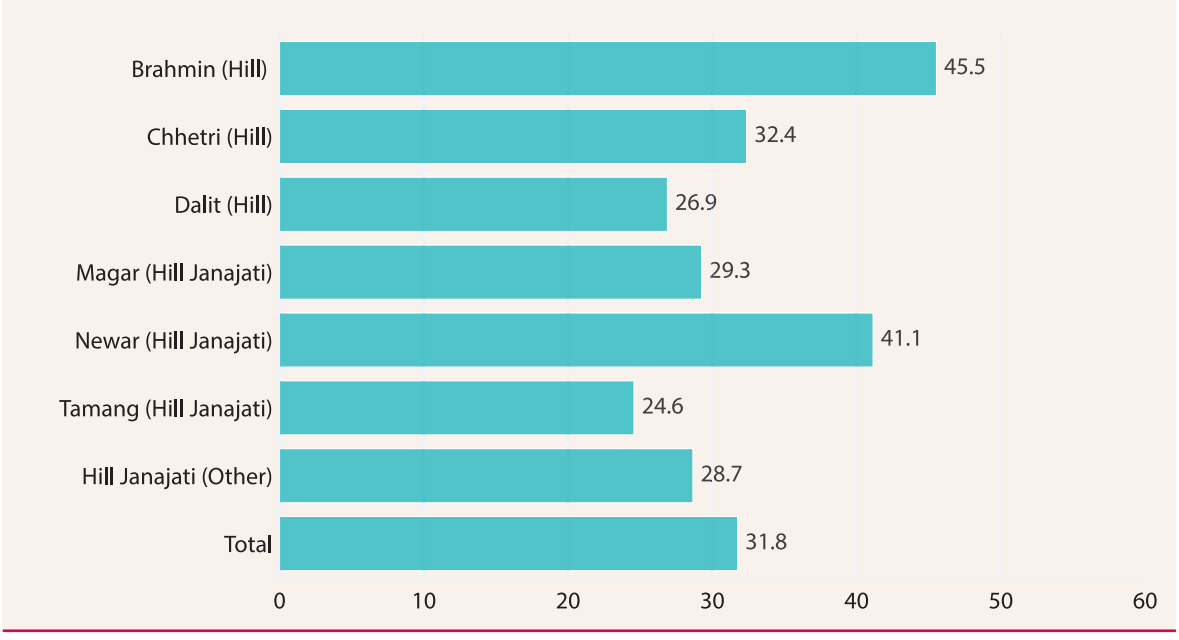


"Linking" social capital is a network with people in positions of influence and authority. In this study, we examined how many households have connections or links with influential people who can extend support in times of need, such as government civil servants, police or army personnel, politicians, NGO staff, financial institution staff, foreign citizens, journalists and others. These people usually have more education and economic resources, understand government rules and regulations, and can help with financial matters. The respondents were asked if they knew such people, felt comfortable asking for assistance, have asked for help, and whether respondents have received support from their contacts.

In the research area, poor and historically marginalized groups such as Dalits and Tamangs had a lower level of linking social capital or access to influential people, including access to the state (Figure 5.15). 45.5 percent of Brahmin households and 41.1 percent of Newar households report knowing at least one influential person. But only 24.6 percent of Tamangs and 26.9 percent of Dalits report a link with influential people.

"Linking" capital is crucial and the most important than others for eliminating long-term vulnerability for better livelihoods and a safer future. In the absence of linking capital, excluded and poor households tend to rely more on bonding social capital and bridging capital. Although all three categories of social capital play a role in increasing resilience, bonding and bridging capital are useful largely in immediate relief as a safety net.

Figure 5.15: Linking social capital - percentage of households with access to influential people for help, CRS 2019

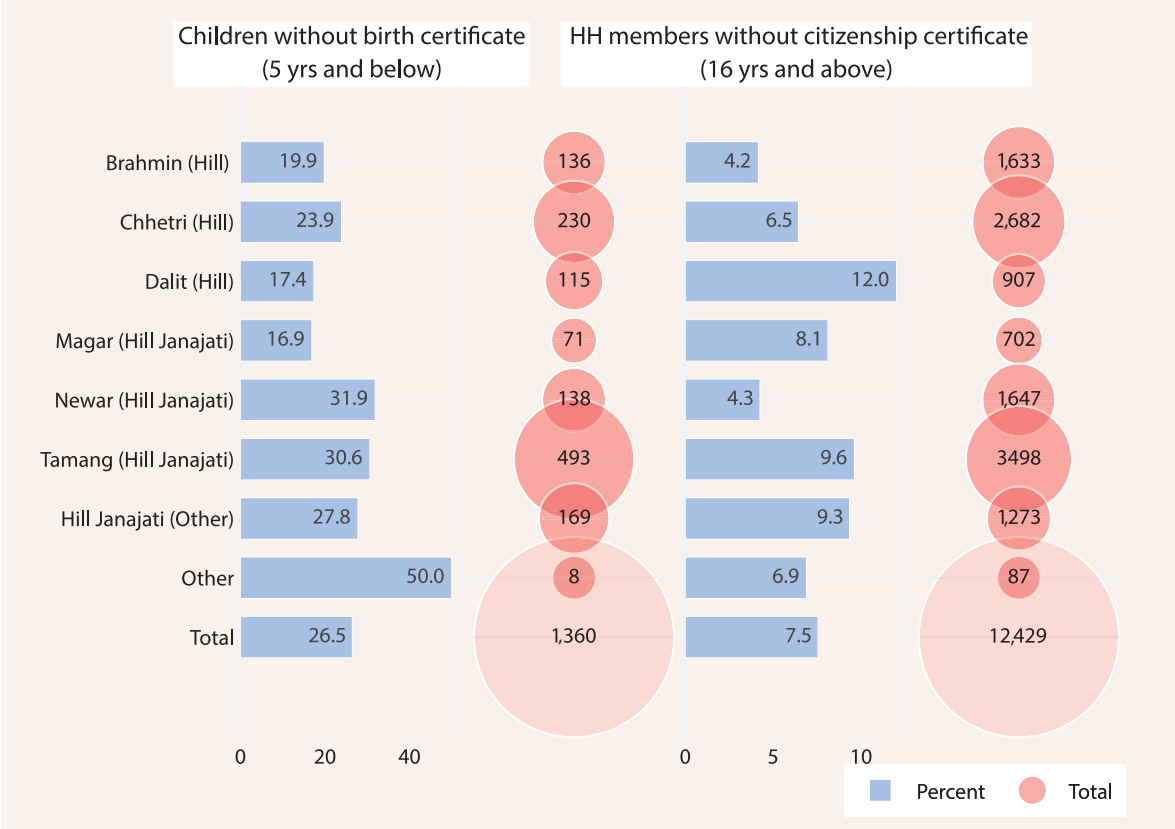


5.9 Legal Identification

A shortage or absence of legal identification can also be a problem. One of the primary forms of legal identification is birth registration. A birth certificate is required for school admission and other services provided by the government. A citizenship certificate is issued to a person who has attained age of 16 in Nepal. The certificate is the main legal identification for citizens entitled to the rights and duties enshrined in the constitution. A citizenship certificate and birth certificate are required legal documents for receiving any assistance or service provided by the government. Possession of these legal documents is an indicator of access and eligibility for receiving support.

Of the total 1,360 children under five years in the sample, the survey found that 26.5 percent do not have a birth certificate. Similarly, of the total 12,429 people who are 16 years and above in the sample, 7.6 percent currently do not have a citizenship certificate (Figure 5.16). The highest among those who do not have citizenship certificate is Dalits (12%) followed by Tamangs (9.6%) and Other Hill Janajati (9.4%).

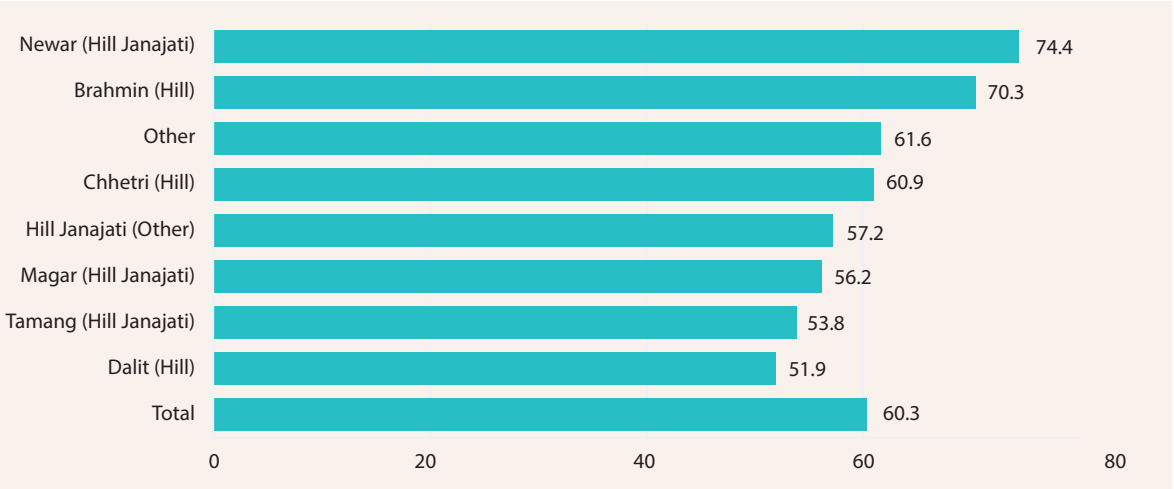
Figure 5.16: Percentage of people without birth and citizenship certificate by social group, CRS 2019



In summary, the resilience capacity is unevenly distributed across social groups. Highest level of disparity is evident in educational attainment and household economic status measured in terms of PPI. The disparity also exists in access to information and technology and basic social services. A composite index of the resilience capacity (Figure 5.17) based on household economic status comprising poverty, non-dependency upon wage labor, and availability of remittance; access to education, information and technology, basic services, social capital, illness and prior awareness on disaster risk reduction reveals that Newar followed by Brahmins and Chhetri possess higher level of resilience capacity. The Dalit and Tamang fall behind in terms of overall composite resilience capacity.[74]

74 Composite index for resilience capacity was computed as a simple average of the variables in terms of 100. The variables taken are Poverty Probability Index (PPI), access to education, Information & technology, basic social service, social capital, remittance, and disaster preparedness awareness. Other variables taken include school dropout, illness, wage employment, demographic pressure. All variables were converted into positive value for calculation.

Figure 5.17: Resilience capicity composite index by social group, CRS 2019



A simple comparison between resilience capacity and recovery status shows that there is a clear correlation between these two variables. A common pattern that emerged reveals that the higher the resilience capacity, the more likelihood of better recovery. This pattern is similar for both social groups and economic class (Figure 5.18 and 5.19). For example, Brahmin, Newar and Chhetri who possess higher resilience capacity had higher level of recovery status while Dalit and Tamang appear in the bottom in both variables. Similarly, richer households had a far greater recovery rate than their poorer counterparts. Inequality persists in resilience capacity and equitable recovery is yet to be achieved.

Figure 5.18: Resilience capacity and recovery status composite index by social group, CRS 2019

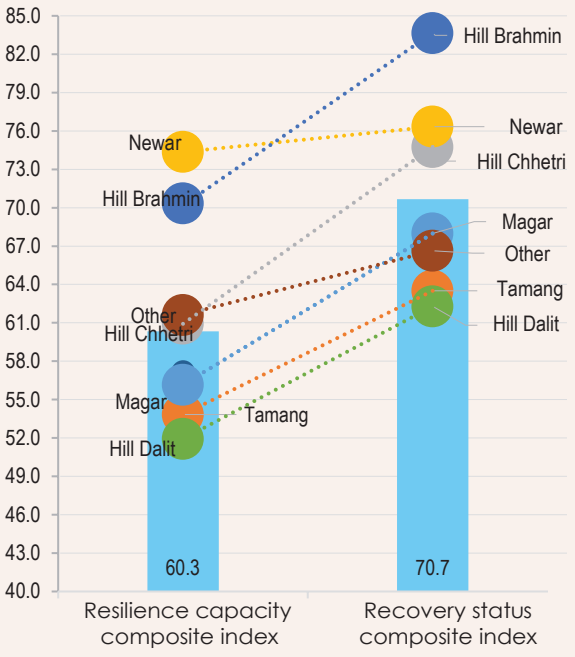
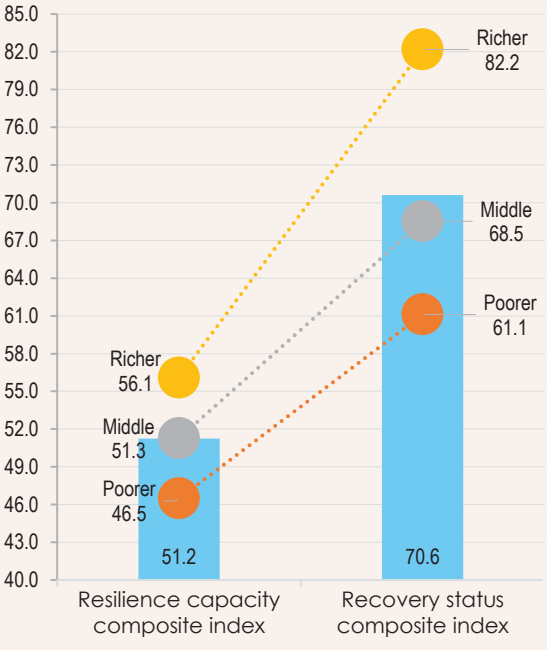


Figure 5.19: Resilience capacity and recovery status composite index by HH economic status, CRS 2019



CHAPTER 6

State and External Support in Reconstruction

CHAPTER 6

State and External Support in Reconstruction

State intervention after disasters is a key part of the resilience of larger systems. How the government responds to the disaster reflects the strength of its institutions and political culture.[75] In a large-scale catastrophe, families and communities naturally look for support to the government – the largest and most powerful organization they have. Most state involvement in disasters is generally oriented to response, not longer-term physical, social, and economic recovery, much less transformation. This narrow thinking owes primarily to the common idea that disasters are short, non-routine social phenomena that result from bad luck. But increasingly, contemporary states are moving from a response-oriented approach to an approach stressing long-term risk reduction and recovery and the inevitability of future disasters.

Inclusive institutions and effective inter-governmental structures, deliberative decision-making, and democratic processes involving elected representatives and people in different levels are critical aspects in such work.

Equitable support from state and external agencies can play a major role in resilience capacity building, especially for vulnerable populations and preventing elite capture. The reverse can also be true: that state intervention, if conducted in an inept manner, can perpetuate and even exacerbate pre existing inequalities.

In this context, this chapter examines the government mechanisms to support reconstruction, the nature of interventions, issues relevant to the implementation process, and the question of equity in recovery assistance.

Our research reveals both strengths and weakness of the government's response. The government's rescue work was appreciated by communities, and local people have welcomed governmental initiatives to identify and provide additional support to landless, dislocated and vulnerable households. But government response showed several shortcomings: The government reconstruction mechanism was led by a top-down bureaucracy with limited stakeholder participation and inclusion in decision making. The government chose the easiest but not most effective way to identify eligible beneficiaries. The government's piecemeal grant release and shifting deadlines led to families making smaller houses than desired. Overall, the government's techno-financial approach to reconstruction overlooked other overlooked participatory processes for decision making and the specific needs of groups. Such a narrow focus often added to social disparities.

75 Waugh, W.L., & Tierney, K. (2007). Emergency management: Principles and practice for local government (2nd ed.). Washington, DC: International City Management Association.

6.1 Nepal's top-down model to support reconstruction

In disasters, governments often create a legal mandate defining the disaster and recovery goals. The state then develops policies, procedures, guidelines, budget, agencies, and human resources accordingly. Nepal started with The Reconstruction of Earthquake Affected Structures Act, passed by parliament on December 20, 2015. This Act established the National Reconstruction Authority (NRA) at the central level for the reconstruction of structures damaged in the earthquakes. The Act states that NRA's purpose is to "promptly complete construction works of structures damaged by the April 2015 earthquake and subsequent aftershocks in a sustainable, resilient and planned manner and to promote national interests and provide social justice by making resettlement and relocation of the affected persons and families."[76]

It took more than eight months to pass the Act and appoint the Chief Executive Officer of the NRA. The delay was caused by a clash of interests among the political parties. The NRA has an Executive Committee of seven members led by the Chief Executive Officer. The Authority also has a three-member Appellate Committee. The NRA has 28 staff including Executive Committee members.

The composition of the NRA staff body showed little attention to gender equality and social inclusion. 90 percent of the staff members are men who belong to hill Brahmin/Chhetri castes. Of the total staff one is a woman and two from Newar ethnicity. During the interview, political leaders from the earthquake affected region also stressed that "we wish the NRA Executive Committee could have been more inclusive including representatives from among the people from the affected areas."

The NRA acted as a central agency to lead the reconstruction work. The NRA started its work during the period of political transition when regular government agencies were responsible for implementation. It made its own structure for project implementation. First, it formed the Central Project Implementation Units (CPIU), with representatives from four ministries: the Ministry of Federal Affairs and Local Development (currently, Ministry of Federal Affairs and General Administration), Ministry of Urban Development, Ministry of Education, Ministry of Health and Ministry of Culture and Aviation. Each ministry was expected to form separate District Project Implementation Units (DPIU) in affected districts. In the 14 affected Districts there were also the Grant Management and Local Infrastructure Unit (GMALI-U).

For technical support and earthquake safety verification, in June 2016, the NRA recruited 2,500 engineers and sub-engineers. The technicians were to inspect and verify new house construction according to the government designs and, for those in compliance, recommend the release of grant installments. In the absence of locally elected bodies at the time, the NRA technicians worked independently in most cases with the help of Village Development Committee (VDC) Secretaries.[77]

The Nepal government had District Disaster Coordination Committees (DDCC) in the district in place prior to the 2015 Earthquakes. The DDCC was composed of Constituent Assembly members, Chief District Officer (CDO) and Local Development Officer (LDO) at the district along with other relevant government officials. The DDCCs played an important role in the rescue and relief stage as well as linking the NRA and Ministries with local bodies in the

76 Bhukampa Prabhavit Sanrachanako Punnirman Sambandhi Ain 2072 (An Act Made To Provide for Reconstruction of the Earthquake Affected, 2015)

77 Robertson, T. 2018. 'Engineering Nepal's reconstruction', My Republica. Available from: https://myrepublica.nagariknetwork.com/news/engineering-nepal-s-reconstruction/. [August 8, 2018]

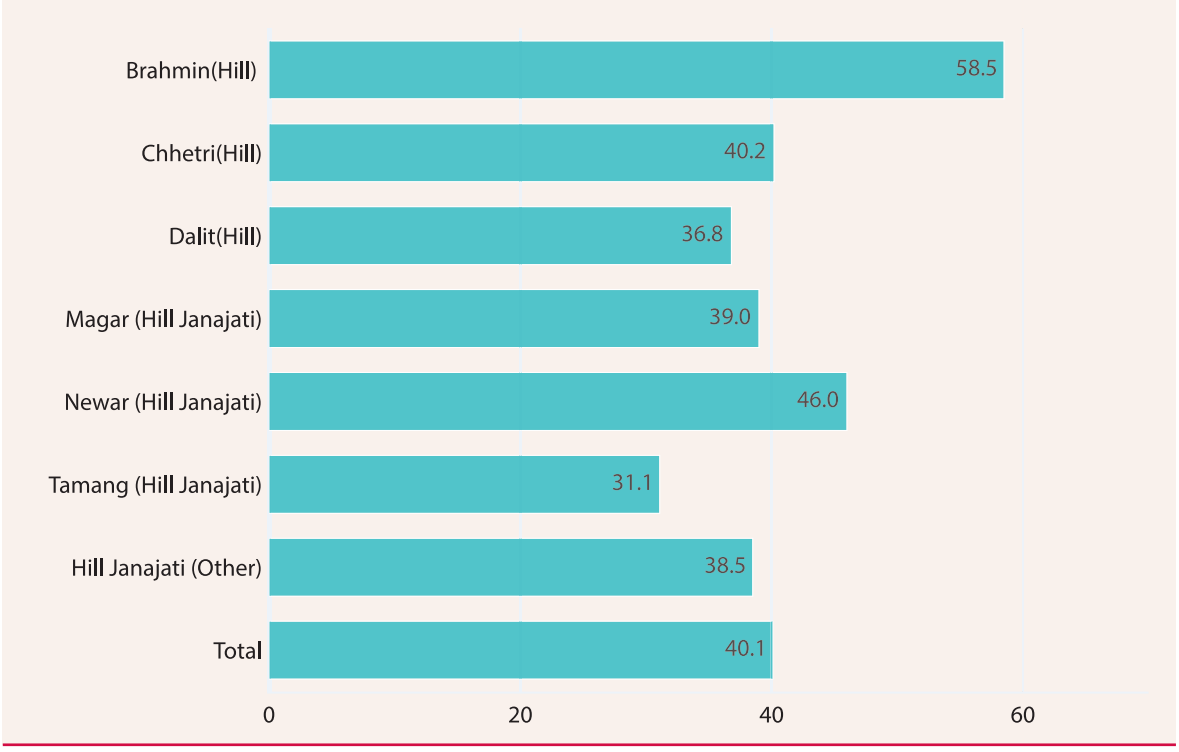
early phases of reconstruction. The functioning of the DDCCs, however, dropped off during the latter part of the process with the frequent transfer of the civil servants and NRA's takeover of direct operation.

Unfortunately, reconstruction mechanisms were dominated by government officials and decision-making was top down. Implementation was complex, involving multiple government entities: the NRA and its different units, ministries at central level and their district offices in the government. Coordination among themselves was a challenge.

Reconstruction often meant a long bureaucratic process involving multiple and often overlapping governmental agencies. Communities found the process confusing. A case from Kavrepalanchowk district illustrates the problem. The School Management Committee acquired support from an external funding agency for building a four classroom school building. To receive the budget, they needed government approval. The Chair of the School Management Committee recalls going first to the DDCC, which sent him to the District Education Office for approval. He says, "I was told in the District Education Office that it requires approval from the Ministry of Education. Finally, we also had to go to the NRA for approval."

For the grant distribution for private house reconstruction, the NRA alone was responsible. Despite the central role of the NRA in reconstruction work, our survey shows that only 40.1 percent of households knew about the NRA and its work and policies (Figure 6.1). Knowledge about the NRA varied by social groups: more Brahmins (58.5%) reported awareness of the NRA's work than Newars (46%) and Chhetris (40.2%). The Tamang community showed the lowest awareness rates, at only 31.1 percent.

Figure 6.1 : Percentage of households who know about NRA works by social group, CRS 2019

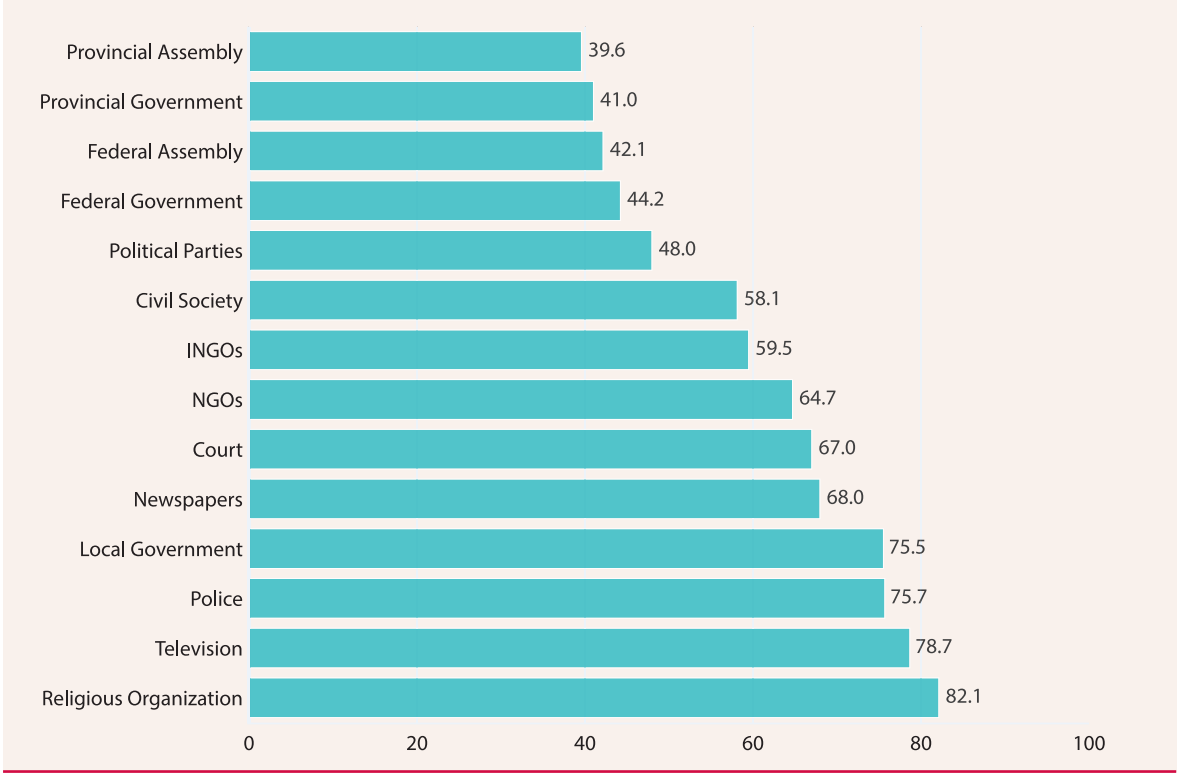


A number of reasons explain lower knowledge by communities about the NRA and its work. First, NRA technicians were not evenly distributed and had sporadic interactions with people. The availability of the NRA technicians to meet the local population was not frequent; technicians participated primarily in the grant approval process rather than actual construction advising. Contractors who often brought laborers from outside the earthquake-affected districts did most of the construction. Second, the NRA is a centralized entity with its project implementing units operational only up to the district level. The NRA in October 2016 envisioned the formation of Community Reconstruction Committees[78] at the local level to assist in its work. Had such committees been formed, knowledge about the NRA would have been greater among the population.

During the reconstruction period, the link to the NRA for local communities was the VDC Secretary. After the local level elections in 2017, the Gaunpalika and Nagar Palika Ward representatives became the intermediaries. Although technicians deployed by the NRA were ultimately accountable to the central NRA authority, it was local body officials or representatives through whom the community could get the information with regard to NRA.

We surveyed people about reliance on and confidence in government institutions (Figure 6.2). Approximately 75 percent of the households surveyed held trust in local government bodies for getting information and assistance during the recovery process. Even more placed trust on televisions. Religious organizations were the most highly trusted institutions at 82.1 percent. For security and emergency, people reported that the police were helpful. Interestingly, for disaster support work, people showed less than expected trust in the provincial and federal level bodies (established by the Constitution shortly after the earthquakes).

Figure 6.2: Percentage of households who expressed trust in Institutions, CRS 2019



78 Rastriya Punarnirman Pradhikaran, Punarnirman Samudayik Samiti Sambandhi Nirdeshika 2073, Karyakari Samiti dwara swikrit miti 2073/3/29. (NRA Community Reconstruction Committees Directives 2016 approved by Executive Committee 14/7/2016).

The Disaster Risk Reduction and Management Act formulated in 2017 mandates a different set of institutional mechanisms for disaster preparedness and recovery.[79] It has envisioned a National Disaster Management Authority at the central level and the subnational Disaster Risk Reduction and Management Committees (DRRMC) at province, district and local levels. In this provision Local Disaster Management Committees are given responsibility to undertake disaster risk preparedness and management activities including post-earthquake reconstruction. Learning from the 2015 Earthquake, the Government of Nepal has formulated a National Policy for Disaster Risk Reduction 2018.[80]

The Local Disaster Management Committees are, however, yet to be formed. These committees once formed can have planned activities for disaster management with universal coverage and more systematic ways for preparedness for the future. Giving more responsibility to the local bodies for disaster risk reduction and recovery is a Constitutional mandate (Schedule 8). The Constitution also envisions creating shared responsibility between local, provincial and federal governments (Schedule 9) for disaster management through inclusive mechanisms and processes.

The work of the NRA was useful especially when there was no elected body at the local levels. The NRA also was successful in coordinating the different actors for achieving basic reconstruction work during the last four years. The NRA, however, embodied centralized authority that operated through government bureaucracies and civil servants without much participation of the stakeholders in decision making and implementation. The NRA and government institutional mechanism did not reflect inclusion. Even when the role of the local bodies as an intermediary between the state and the peoples was seen as crucial by the communities, the involvement of the local government in the reconstruction work was minimum. This was a top-down model.

6.2 Centralized and flawed process for identifying eligible beneficiaries

For the rural housing reconstruction program, the government and donors agreed that the grant distribution would follow five steps: 1) identify the eligible beneficiaries, 2) sign enrollment agreements between beneficiary households and the government, 3) disburse the first grant amount through bank accounts, 4) release second and third installments after verification of construction, and 5) conduct comprehensive, multi-tier, and hands-on training.

The procedure for grant distribution was determined centrally at the time of designing the rural housing reconstruction program with the World Bank and other development partners. In 2016, the NRA formulated criteria and a process for selecting eligible beneficiaries for the housing reconstruction grant in the Procedure for Distribution of Private House Reconstruction Grant, 2017. Article 3 of the Procedure entrusted the NRA Executive Committee final authority to approve the owner of the damaged house as an eligible beneficiary who is 1) enumerated in the Central Bureau of Statistics (CBS) survey and selected based on the CBS assessment criteria[81] for reconstruction and retrofitting, 2) ascertained following the Procedure for handling of grievances related reconstruction 2017, and 3) ascertained by Procedures for the relocation and rehabilitation of hazard-prone settlements, 2017.

---

79 Constitution of Nepal, Article 51, Policies of state, (g) Policies relating to protection, promotion and use of natural resources. "the state shall pursue policies to "make advance warning, preparedness, rescue, relief and rehabilitation in order to mitigate risks from natural disasters."

80 National policy for disaster risk reduction 2018, Ministry of Home Affairs, Government of Nepal. drrportal.gov.np

81 The CBS deployed engineers from center for assessment which classified houses based on the level of damage on a grade of 1-5. Grade 1 was with negligible damage which do not require assistance. Houses that fell in grade 4-5 and grade 3 (with major repair required) were listed as heavily damaged eligible for reconstruction grant of NRs. 300,000. Houses falling in grade 2 (major repair required) and grade 3 (with minor repair required) were enlisted as eligible of grant of NRs 100,000.

The eligibility assessment was done multiple times with varying criteria by different government bodies. The government conducted an initial damage assessment a few weeks after the earthquake through VDC Secretaries and Social Mobilizers. This assessment was used for the distribution of emergency temporary shelter construction grants of NRs. 15,000. For the distribution of beneficiary identification cards, a second round of assessment was conducted by a team led by engineers from the DDCC. The assessment was used to provide red cards for fully damaged houses and yellow cards for partially damaged ones. The initial assessment was also used for providing winter support of Rs. 10,000 to each household.

The identification produced extensive discontent among villagers. They had several types of complaints: mis-categorization such as completely damaged houses listed as partial damaged, or vice versa; exclusion of genuine cases of damaged houses on the beneficiary list; and inclusion of undamaged houses on the list. As a result, the NRA decided to take over systematic work for the identification of eligible households in February 2016 with the help of the Central Bureau of Statistics (CBS).

After the survey, the CBS made public a list of eligible beneficiaries. But because the CBS's eligibility list had fewer and different names than the earlier one, in many cases, discontent intensified. As the NRA started to sign grant agreements for disbursement of the first tranche, people who believed that they were unfairly excluded from the list of beneficiaries lodged complaints, protested in the district headquarters, padlocked VDC offices, and organized delegations to talk to the DDDC and other government authorities. Local political actors and community leaders were also not happy because they did not have any role in the process of identification of beneficiaries in their constituencies. They believed that there were inconsistencies in the survey due to insufficient staff and technical expertise to carry out the survey systematically, and a lack of knowledge by government surveyors regarding the local situation. A political party leader in Tahngpaldhap, Sindhupalchowk told us, "It was a bureaucratic endeavor. They decide everything. Local leaders and communities had no say in it. Inconsistencies occurred partly because we did not have elected local bodies at that time."

But even after the local elections in 2017, local officials had little role in beneficiary identification. A local representative of Ama Chhodingma Gaunpalika in Rasuwa district observed, "All we could do was recommend but not know whether they will be received positively." Federal government officials retained sole responsibility for deciding criteria to define damage, how to interpret the criteria, and deciding the list of eligible beneficiaries. This process indicates a situation where the government appears as a benevolent power, working to help disaster survivors but also, at the same time, a centralized authority, which has no need to listen to the people. Upset citizens could only file protests about mistakes on the list. Protests, however, also came with the risk of being labeled as a "fake victim."

To address grievances, the NRA established a grievance mechanism in June 2017. Since then, the number of beneficiaries on the official list has been increasing. Initially, 531,964 households were identified as eligible for government housing grants of Rs 300,000. As of 12 September 2018, the list of eligible beneficiaries increased to 810,196 households.

In many places survivors faced difficulties because of the complexity of the beneficiary identification process. An example from Kavre district is illuminating. In a small hamlet composed of 12 households in Temal Rural Municipality, community members report that the "government sent damage assessment and beneficiary identification teams three times and we had a difference in enlistment each time. In the first one conducted by our VDC Social Mobilizer, seven houses in our Tole were included as affected, and in the second round of assessment done by an engineer from NRA, 11 houses were listed. But in the final one done in early 2016, only 4

houses appeared on the list of beneficiaries published by NRA." They said all 11 households had unlivable houses, either fully or partially damaged. They filed a complaint but have not heard back.

In summary, the centralized structure of eligible beneficiary identification may have been the safest and easiest way for the government, but the process left the people merely as passive recipients of the grant. The multiple and often contradictory eligibility identification processes may have helped establish the government's control over the situation, but it also engendered doubts about the process among the population. Had the NRA established a mechanism for collaborating with local leaders in the process of identification, many grievances could have been avoided.

6.3 Tranches and deadlines in grant distribution

Nepal's rural housing reconstruction program stipulated that the grant is to be released in three tranches through the bank. The first tranche of NRs. 50,000 is upon the signing of the grant agreement. The second tranche of NRs. 150,000 was to be released upon the completion of the foundation and construction of plinth level, and the final grant is disbursed at completion of roofing, including either a toilet, bio-gas plant or solar power installation according to the recent house construction grant distribution guide approved by NRA[82]. The grant was initially to be NRs. 200,000 but was increased in September 2016 to NRs. 300,000.

People in the earthquake-affected region knew that governmental reconstruction support would cover only part of what they needed. But they did not expect that support would come in installments with strict conditions for verification by government technicians. People had assumed that they would have their own time to arrange the resources that the government grant would supplement. With the budget ready, they could have arranged for materials and labor for construction in the season best suitable for them.

Especially for poorer families with only scarce reconstruction resources, synchronizing tasks turned out to be extremely challenging. With the design prescribed by the government, coordinating a time with the NRA engineer for inspection was a daunting task. The best option for many poor families was to build a house of the size that can easily pass the inspection by the NRA deadline. A 50-year old man from the village of Tipling in Ruby Valley Gaunpalika who had just taken the third tranche after completing a one-room one-story house explained, "I wanted to build a house similar to the traditional one that I had before but with earthquake resistant techniques. We waited for the government to bring such designs. It was not possible for me to use the government grant if I wished to do so myself. A one-room-one-story house was the only practical way left to meet the deadlines and receive installments."

This problem was predictable, given the need for the NRA to demonstrate its effectiveness within the timeframe provided to achieving their goals. Driven by recovery goals measured by grant disbursement, the NRA, in late 2017 set up a deadline for the first tranche (January 13, 2018), the second tranche (April 13, 2018), and third tranche (July 15, 2018). The deadline for the second tranche disbursement was later extended to 16 July 2018. In September 2018, NRA Steering Committee extended tranche disbursement deadlines further. The new deadline for the second tranche disbursement was shifted to 15 January 2019 and a new deadline for the third tranche disbursement was 14 May 2019. Ever-changing deadlines not only rushed the people to build houses but also confused them as to what to expect.

82 Bhukampabata Prabhavit Niji Awas Punirman Anudan Bitaran Karyabidhi (pahilo samshodhan) 2073. (Procedure for Distribution of Earthquake Affected Private House Reconstruction Grant 2016).

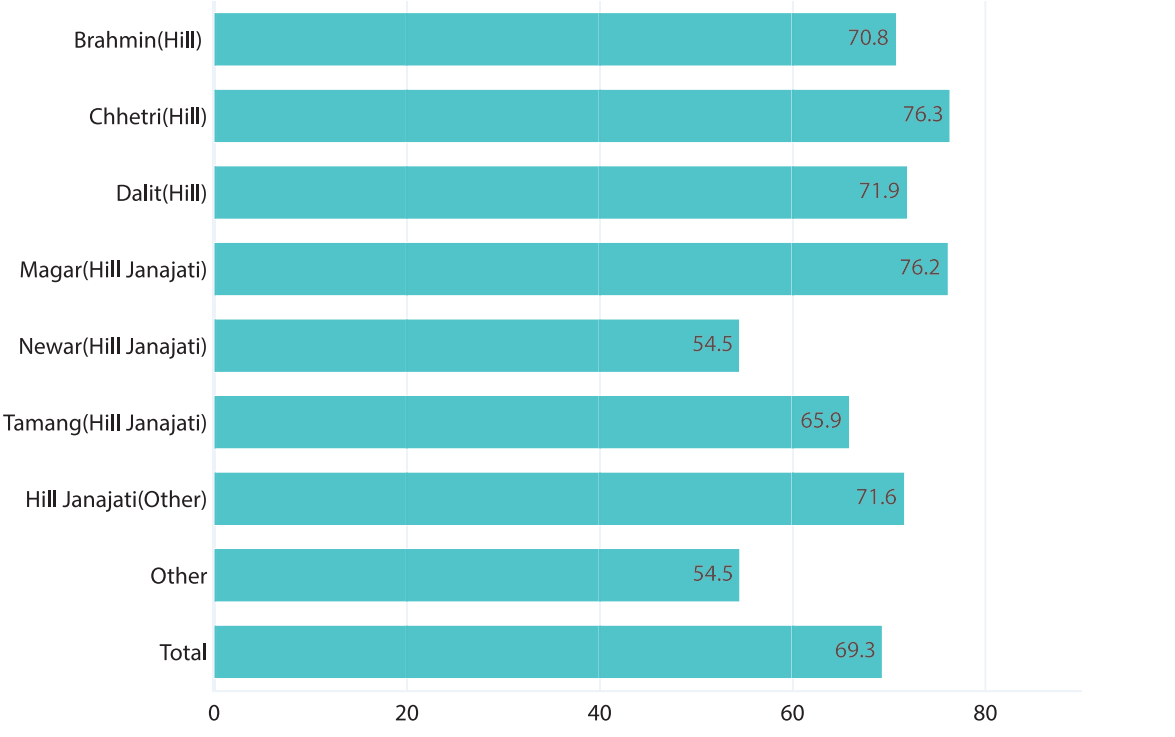
The deadline announcements produced a sense of alarm if not panic about possibly losing government grants. In addition to the sense of heightened rush created by deadlines, people were also frightened by the rumors circulating that those who have already taken the first tranche will have to pay the grant back with interest if they did not complete the reconstruction, and they may even be barred from necessary services such as birth certificate and low-interest loans during 2018.

An atmosphere of scarcity spurred people to take grants as soon as possible. 2018 saw a dramatic increase in house construction and tranche disbursement. Because many families were still not able to build their houses, NRA extended deadlines. The result of false alarms and impractically quick deadlines was smaller houses. A middle-aged woman in Ramechhap at Doramba village laughed as she showed her newly built "bhukampa ko ghar" ("earthquake house"). She said her "real house is yet to be built."

By July 2017, only 42,576 private houses had been completed, according to NRA records. By July 2018 there were 196,149 completed houses. By March 2019, the eve of the earthquake's fourth anniversary, 390,448 households had received the third tranche, which is only 47.7 percent of the total eligible households.

During our survey in May-June 2019, two-thirds of households listed as eligible had taken all three tranches of the housing grants. The deadlines were the primary force behind this speed. Overall, 66.3 percent of households reported that they had taken the third installment (Figure 6.3). Except Newars and Tamangs, the number of other groups who have taken the final tranche is higher than the overall average. Newars have a lower rate because of their urban location and complexities of acquiring land for housing in urban locations, while for Tamangs the problem is the lack of access, language barriers, and geographic remoteness.

Figure 6.3: Percentage of households who received all tranches of housing grant (as of June 2019) by social group, CRS 2019



There is no significant difference in tranche distribution by household economic status. According to survey results, 65.8 percent of poorer households, 71.8 percent middle and 68.2 percent richer households have taken all tranches. 68.7 percent female headed households have also reported to have taken the third tranche. The number of households taking the last tranche is increasing as people complete their houses. The increase is important for the NRA as it defines its progress by the number of grants distributed. But given that the majority of houses reconstructed may pass the earthquake safety measures but are small and do not necessarily fulfill household needs, housing recovery measured in terms of tranches taken cannot be a final indicator for recovery. People are still living in temporary shelters and unrepaired houses due to inadequate space in their new houses. In this sense, housing recovery is still in process.

Verification by the NRA engineers to ascertain that the beneficiary has adopted earthquake-resistant technology was necessary for the approval for the second and third releases. Showing legal documents such as land ownership certificates or lalpurja and the citizenship certificate was an indispensable part of the process both in the government office and in the bank for opening an account. Both, the availability of an engineer to concur the earthquake-resistant construction of houses and the time taken for the fund release in the bank account presented significant hurdles for many people. After the verification for the second installment by an engineer, a woman from Thangpaldhap village had to visit the Bank in Melamchi at the distance of four hours travel, three times to check if the money had arrived. Access to mobile and internet banking could have replaced need for physical visit. This survey shows that community members had to visit the Village Secretary office and Bank as many as 12 times for getting all the tranches in several districts, bearing significant costs of time and money. Average visits to the offices for the grants was six times.

Those households which had difficulty assembling papers, non-proficient in Nepali language, and unfamiliar with the bureaucratic procedures had to visit the offices more times. Households residing at longer distances from Banks and government offices had to spend an increased number of days in getting the work done.

The government's approach to grant-making shaped the reconstruction process in significant ways. Construction of a higher number of smaller houses at a faster pace is one visible result. This study shows that there are primarily two reasons that propelled people to make smaller houses swiftly. The first was the piecemeal approach of governmental grant release. The second was the NRA's persistent call for a faster pace for taking grants enforced by deadlines; this pace was faster than what householders actually preferred. Despite the accelerated pace pushed by the deadlines, the time consumed for getting the grant was significantly high.

6.4 Techno-financial intervention for recovery

The NRA's main focus was reconstruction, which included private houses, schools, health posts, drinking water and other community structures, in collaboration with relevant government departments. The PDNA identified housing and human settlement as the most affected sector. To assist in the reconstruction of private houses, the government developed Nepal's rural housing reconstruction program together with donors who provided loans and grants.[83] The purpose of the program was to "ensure that houses destroyed in the most-affected districts of

83 A Multi-Donor Trust Fund (MDTF) has been established with support from the US Agency for International Development (USAID), the Swiss Agency for Development and Cooperation (SDC) and the World Bank. The Japan International Cooperation Agency (JICA) and other Development Partners worked in close collaboration with MDTF partners in extending the coverage of the rural housing reconstruction program services to additional areas of the country.

https://www.worldbank.org/en/country/nepal/brief/nepal-reconstruction-program

the country will be rebuilt using earthquake-safe building techniques through grants and technical assistance to eligible households from the Government of Nepal."

The government's approach to reconstruction focused on technical and financial measures such as housing design and grants. The government provided design options for earthquake-safe houses and technological training. The majority of the houses built were chosen from the 17 designs prescribed by government engineers. They were designed without consultation with owners. Although the majority of the respondents in the research reported that they felt that the new structures are safer for the earthquake -- a real achievement -- government control of designs undercut practical requirements, traditional design and aesthetics, and more importantly, it undercut the necessary participation of people.

In October 2015, the Department of Urban Development and Building Construction published the design catalogue for the reconstruction of earthquake resistant houses. The catalog provided 17 house design options developed by experts in Kathmandu. The designs specified size, layout, and construction materials. Volume II of the catalog came out in March 2017 with the aim of providing options for "alternative construction materials and technologies."

The catalog states that the designs were prepared to ensure that vernacular architecture and building practices can be maintained. The designs were supposed to offer choices to house owners. It was stated by the NRA that it is not mandatory for households to choose from the catalog. As long as the building designs comply with the National Building Code, people were free to prepare their own designs. Despite this initial intention, the catalogue designs in practice became a mandatory blueprint to follow. One of the engineers that we interviewed in Rasuwa district said, "If people want to have a different design other than prescribed in the catalog, we are not authorized to approve it. The approval should come from higher authority. It is easiest for us to verify the building built according to the manual." People were compelled to choose one of the designs because of the undefined and locally unavailable approval process of alternative designs.

New house design has transformed traditional village appearance in dramatic ways. The historic Gurung village of Barpak in Gorkha and Tamang village Gatlang in Rasuwa used to be an attraction for cultural tourism. Barpak now looks like a semi-urban area with many concrete buildings devoid of traditional beauty. Gatlang had a closely clustered settlement of over 300 houses with similar stone and/or wood roofs with local design; now it is dominated by tin roofed houses with concrete walls.

External support from development partners for funds and technical training was a crucial component of Nepal's reconstruction process. At the 2015 donor conference, 4.4 billion USD -- two-thirds of the total appeal -- was committed by donors to support recovery and reconstruction.[84] The top five donors -- India, China, the Asian Development Bank, the World Bank, and Japan -- pledged 83 percent of the total. An additional 18 donor countries and agencies committed the rest.[85] According to NRA data, the donors agreed to provide USD 1.55 billion in grants and USD 1.51 billion of loans. As of July 16, 2019, NRA reported that NRs. 27,639 crore was spent by the agency in reconstruction. Of the total expenditure, NRS 18,729 crore or 67.7 percent was spent on private

84 As of April 2018, only 16 percent of the $4.1 billion has so far been disbursed, even though the loan and grant agreement with donors account for 75 percent of the total pledged amount— $1.97 billion in grant and $2.13 billion loan. https://kathmandupost.com/miscellaneous/2018/04/18/nra-seeks-transparent-funding-from-donors

85 Other donors include Australia, Austria, Bangladesh, Canada, European Union, Finland, Germany, IMF, Netherland, Norway, Pakistan, Republic of Korea, Saudi Arabia, Sri Lanka, Sweden, Switzerland, Turkey, UK, and the USA.

housing grants. The government contributed 63.8 percent for private housing grants and 36.2 percent came from external donor grants and loans.[86]

Besides financial support, the international development partners including the UN agencies and INGOs worked in specific locations of the affected areas through local NGOs. More than 100 international agencies/organizations and their local partners worked in the rural housing and community structure sector in the affected districts.

The international agencies/organizations directly supported technical skill training on masonry, carpentry, plumbing, electrician, retrofitting in selected locations, they also provided house reconstruction grants and top up funds for vulnerable communities. Support in demolition of damaged structures and distribution of tool kits was also provided by some agencies. The task of community facilitation for accessing government grant distribution and awareness building on disaster risk management were other major work of the external agencies. The external support also includes the contributions collected by thousands of individual Nepalis, Nepali organizations, and foreign nationals from different countries deposited in the government's account and mobilization of those funds directly for reconstruction.

Another major intervention of the NRA and international agencies/organizations was training on masonry, carpentry, plumbing and electric wiring. The NRA reports that by July 2019, 65,462 masons/carpenters were trained.[87] Of the training provided by agencies, more than half had construction related technical contents.

On the whole, the approach taken by the government and development partners for reconstruction was characterized by the centrality of technical-financial intervention as a solution to reconstruction. The "ownership driven" principle practically translated as house owners identified as eligible by the NRA take the grant, build a house to be verified by government technicians for compliance with prescribed design. This approach overlooked people's aspirations, community collective action, and other social dimensions of recovery.

Technology was prescribed in the form of design and training to masons and carpenters. Pre-determined housing designs were enforced by stringent technical verification. Reconstruction primarily was about the distribution of financial grants. Small financial grants provided in piecemeal basis through bank accounts coupled with a rigid set of deadlines controlled the pace of the reconstruction. The involvement of development partners has supplemented the government work with financial and technical backstopping.

6.5 Equity in reconstruction support

The NRA implemented limited but important initiatives to address equity concerns in reconstruction support. They gave additional grant support to selected landless households and households identified as vulnerable. The provision of NRA grants for vulnerable people has mostly been a symbolic gesture; in reality it has not delivered the desired outcome.

86 Rastriya Punarnirman Pradhikaran, (2076 BS), Aarthik Barsha 2075/76 ko Barshik Pratibedan (National Reconstruction Authority, [2019] Annual Progress Report of Fiscal Year 2018/2019. Kathmandu: Government of Nepal.) ı Also see press briefing by NRA Chief Executive Officer Sushil Gyawali on 26 December 2019. NRA Completes four years. Rebuilding Nepal. November-December 2019. National Reconstruction Authority. Pp. 2-4.

87 Rastriya Punarnirman Pradhikaran, (2076 BS), Aarthik Barsha 2075/76 ko Barshik Pratibedan (National Reconstruction Authority, [2019] Annual Progress Report of Fiscal Year 2018/2019. Kathmandu: Government of Nepal.)

In May 2018, the NRA announced its policy of providing an additional Rs. 50,000 for the 18,505 households they had identified as vulnerable. The government defined vulnerable households using four criteria: 1) headed by people above 70 years, 2) headed by single women above 65 years, 3) including persons living with disabilities (red and blue cardholders)[88], and 4) households with only children under 16 years. This was a welcome step with potential to address equity concerns and issues of distributive justice.

So far, however, distribution of such grants has not taken place. Field interviews show there are two major critical concerns. The first is that the vulnerable households identified were not able to build their houses due to several reasons, particularly the inability to procure labor, materials, transportation and other logistic support beside the resources.

The second concern is the narrow definition of vulnerability. The NRA used four criteria for identification of vulnerable households. The definition also has a restricting clause which states that those households should not have able members aged between 16-70 years old.[89] It also places an age bar for single women. While all households headed by single women are susceptible to extra hardships, the NRA criteria only include those households headed by single women aged above 65 years. The provision does not take into account the fact that women in general are the ones who endure higher levels of negative impact by the disaster. With this narrow definition of vulnerability, the NRA closes the option for including other forms of vulnerability.

Through a second amendment to the private house reconstruction grant procedure, in February 2019, the government approved the purchase of land for the landless including those who need relocation, through additional grants of NRs 200,000. As of October 2019, NRA had provided such land purchase grants to 2,157 households. The recipients of the grants include both landless households and those dislocated by the earthquake. Mostly Dalit and dislocated families benefited from this assistance.

This initiative went beyond the usual way of giving "equal amount to all victims" according to the general principle of equal treatment. An equal treatment approach that does not recognize the specific needs of society's marginalized and vulnerable usually results in unequal outcomes; it can even exacerbate pre-existing inequalities. The NRA's decision to provide the landless, dislocated and vulnerable with additional support is a good example of an equitable approach for providing support based on real needs.

However, an important group left out of these measures is the region's poorest households who do not fall within the defined categories. For all the groups in the earthquake-affected area, poverty was both a cause of the disaster-related vulnerabilities and consequences of the disaster. The families who are dependent upon wage labor from all social groups fall within this category but disproportionately from traditionally marginalized caste and ethnic minorities. As a result, most of the poorest households are Dalits, Tamangs and other indigenous communities. As non-Nepali language speaking communities with limited familiarity with bureaucratic procedures, indigenous groups need additional support to access government information and services. In addition to the poverty, the NRA vulnerability criteria also exclude the families living in regions that are inaccessible by paved roads.

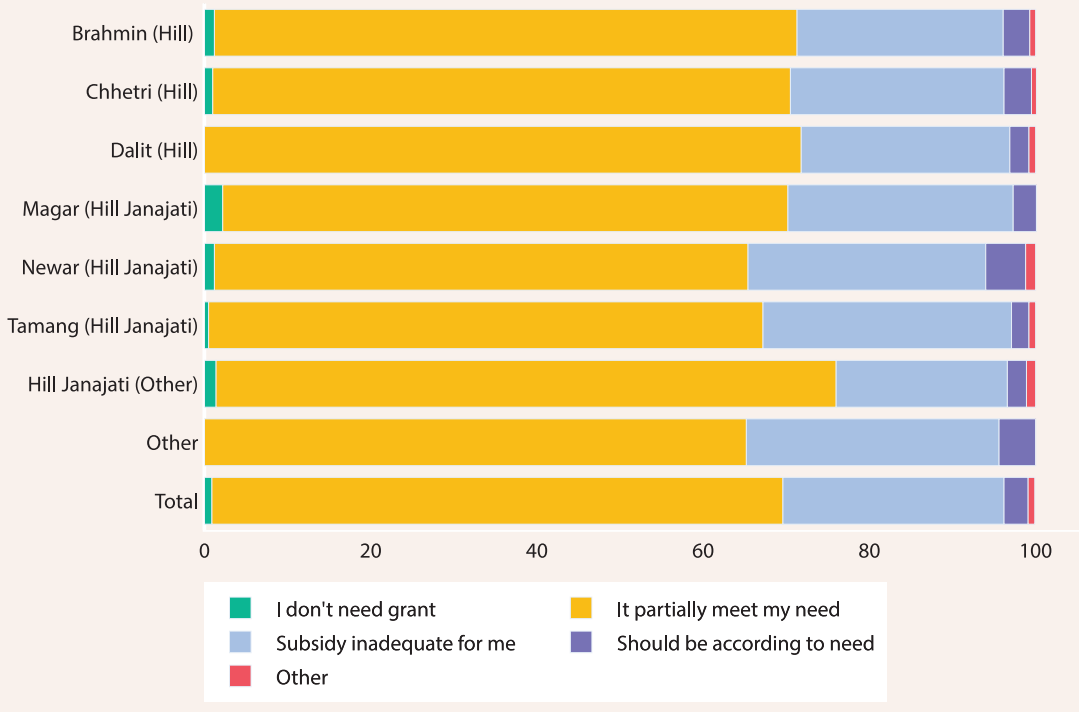
88 As per the government 'Procedure for Distribution of Identification Card to Persons With Disabilities-2018', a person with complete disability ('A' category), severe disability ('B' category), moderate disability ('C' category) and general disability ('D' category) were be provided with red, blue, yellow and white cards respectively.

89 Article 3 (2), Operational *Procedure for Vulnerable Beneficiary Identification* 2074.

For all the cash-support provided, including housing reconstruction grants, the government and donor agencies adopted a universal approach without consideration of vulnerability. Under this policy, all households identified as being fully damaged were considered eligible for a grant of NRs. 300,000. An equal allocation is the easiest bureaucratic procedure; it is simpler to avoid the complexities of distributive justice and equity. For some households and social groups -- those endowed with financial, social and human capital -- the amount offered by the government was not necessarily needed, but for those households who lost all their savings accumulated in the form of their house and other assets, and who had limited "linking" social capital, the amount provided in recovery support was inadequate. Thus the universal grant approach generally benefits well-off families more and is regressive in essence, similar to a regressive tax approach.

Our survey shows that around one percent of households reported that they needed no government grant to reconstruct their houses. In another part of the survey, 6 percent of households reported that they built new houses without government grants, using just their own resources. Around two-thirds of the respondents in the survey reported that the grant partially met their needs. These households used their savings or resorted to loans. 26.6 percent of the households thought that the grant was insufficient for them to meet their reconstruction needs. They had higher reliance on external support and had inadequate ability to mobilize other resources. Another three percent of the households articulated that the government grant could have been better if it was according to the need of households rather than distributing following a blanket approach (Figure 6.4).

Figure 6.4: Perceptions about the government housing grants by social group (percent of households), CRS 2019



Although it was limited in scope, providing additional support to vulnerable and people in special need was an important step in the recovery process. One of the outstanding achievements of this policy has been that a significant number of landless households were able to get ownership of homestead.[90] Learning from success and shortfalls, it can provide an important model for future disaster recovery initiatives for equitable distribution of resources. The approach responds to the principle of distributive justice that posits vulnerabilities and inequalities are created by social structure and that the state has a responsibility in assisting those left behind. "Vulnerable groups," scholars have explained, "have a lower capacity to cope with and recover from a disaster than others and hence need additional support for their recovery."[91] Helping them is essential for promoting development as well as a fair and equitable disaster recovery.[92] It is also a moral necessity echoed in the aspirations of vulnerable communities.

90 Rawal, Vivek, et al., 2020. "Inclusion of the Poor and Vulnerable: Learning from Post Earthquake Housing Reconstruction in Nepal." Paper presented at Web based 'National Symposium on Nepal's Reconstruction, 24-27 August 2020, organized by National Reconstruction Authority.

91 Mojgan Taheri Tafti & Richard Tomlinson (2018): Theorizing distributive justice and the practice of post-disaster housing recovery, Environmental Hazards, DOI: 10.1080/17477891.2018.1435406.

92 Haddad, L. (2015). Equity: Not only for idealists. Development Policy Review, 33(1), 5–13.

CHAPTER 7

Women and Disaster Resilience

CHAPTER 7

Women and Disaster Resilience

Our research data shows that the 2015 earthquakes disproportionately affected and placed higher burden on women and girls in the worst affected regions. Although the situation for women and girls in Nepal varied some by ethnic group and was generally improving across the board, women and girls faced numerous challenges. Women, in general, in Nepal form a historically disadvantaged group who experience systematic exclusion and discrimination. The institutionalized discrimination based on patriarchic system and associated values and social practices are responsible for such structural gender inequalities. Pre-existing gender inequalities mean that disasters affect women and girls in different ways than they affect boys and men. Disaster demands special efforts to address women's specific needs and their empowerment. In this section, we highlight the effect of the disaster on women's access to external support during the recovery period and discuss their vulnerabilities, and their resilience capacity.

7.1 Differential impact and insecurities

Earthquakes are commonly thought to be an indiscriminate killer. The effect of the 2015 earthquakes, however, shows otherwise, lending strength to the fact that disaster impacts are not gender neutral. Moreover, post disaster events such as in the process of relief, reconstruction and recovery, also affect women and girls disproportionately in ways that are distinctly different from that for men and boys.

Overall, in the 2015 earthquakes, among all those who perished, 56 percent were female (women 39%, girls 17%) and 44 percent were male (men 29%, boys 15%). Women also endured greater rates of physical injuries and psychological trauma. Why is this so? The people in the study generally attribute this to the fact that women happened to be inside the house and they faced higher levels of difficulties in escaping. As in many other contexts, women's dress codes and caring responsibilities are also likely to restrict women from moving or escaping quickly. There were also stories of women perishing after going back into the house to bring the children and elderly out to safety.

Disparity does not stop after the incident of calamity is over. During the period when families stayed in camps and temporary shelters, almost 90 percent of our survey respondents reported that women faced safety and security problems. The lack of safe shelter, individual security and the lack of access to essential health services were the three top challenges that women and girls faced immediately after the disaster (Figure 3.5). Women, especially young girls, faced heightened insecurity and risk living in the tents and were prone to sexual violence and rape or attempt of rape. Soon after the earthquakes, various cases of sexual exploitation and rape were reported at temporary shelters, including those in the Kathmandu Valley.[93] "We were frightened living in the tent," a girl from Changu Narayan in Bhaktapur District recalled during our interview. "The space was congested with

93 Ghimire, Kalpana, 2015. Palbhitra Balika ra yubatiharu asurachhit [Girls and women are insecure in the temporary makeshift tents] (https://ekantipur.com/printedition/2015/05/27/347309.html?author=1). Kantipur, May 27.

more than 12 people. Sometimes, men we did not know entered into our space and used obscene words. In the night, I could not sleep because I felt scared in the place without light, door and lock."

In camps and temporary shelters, the lack of privacy for women and girls, including during their menstruation period, for lactating mothers with newborn babies, and pregnant women, was a common problem. The lack of toilets, hygiene supplies, and water in these temporary shelters caused serious inconveniences and health problems.

There was a general unavailability of health care services for women. Because of the earthquakes, reproductive health complications, a leading cause of the death and illness among women of childbearing age, increased dramatically. The United Nations Population Fund (UNFPA) estimated that of the total 8 million people affected by the 2015 earthquakes, 1.5 million were women of reproductive age.[94] With the damage to health institutions and disrupted health services including reproductive health services such as access to family planning and other services, and a lack of skilled birth attendants, pregnant women, breastfeeding mothers and adolescent girls faced increased health risks in the earthquake-affected districts. Informal interviews reported that due to lack of sanitation and taboos attached to menstruation, many women suffered from urinary tract infections.

Trafficking of women and girls after the earthquake were reported by respondents and media. According to preliminary estimates, around 500 children became orphans because of the earthquakes. Families whose houses were destroyed sometimes looked for external help towards organizations to look after their young children. These children were at high risk of being trafficked or exploited in multiple ways. Many traffickers use natural disasters as an opportunity for trafficking. Women and children were often taken from their families in the pretext of keeping them in children's care homes, sending them to schools, religious institutions or even for jobs in the cities. Since the first earthquake hit Nepal, at least 245 children have been intercepted from being trafficked and unnecessarily or illegally placed in children's care homes.[95]"

Our survey shows that the trafficking of women and children was a critical problem in the earthquake districts. Trafficking was already rife before the earthquakes. This is corroborated also by media reports. Girls trafficked from Nepal are often recruited into prostitution or sold as domestic slaves in India and other countries. Trafficked boys are taken into forced labor. Some are used for stealing body organs such as kidneys. They are also recruited in children care centers and religious institutions to attract donors. After the earthquakes, a number of cases were intercepted by the police at checkpoints in Dhading, Gorkha, Dolakha and Makwanpur.[96]

7.2 Recovery and external assistance

Post disaster events also affect women disproportionately, especially if they have lost able-bodied family members in the disaster. They face increasing responsibilities and burdens of household chores and caregiving (which become more difficult if services such as fetching water, fodder, fuel are disrupted), rebuilding and making arrangements for livelihoods options. During the rescue and recovery phase, security forces, the government,

94 The Kathmandu Post. 2015. 'Earthquake affects 1.5 million women of reproductive age (https://kathmandupost.com/national/2015/07/11/earthquake-affects-15-million-women-of-reproductive-age)', The Kathmandu Post, 15 July.

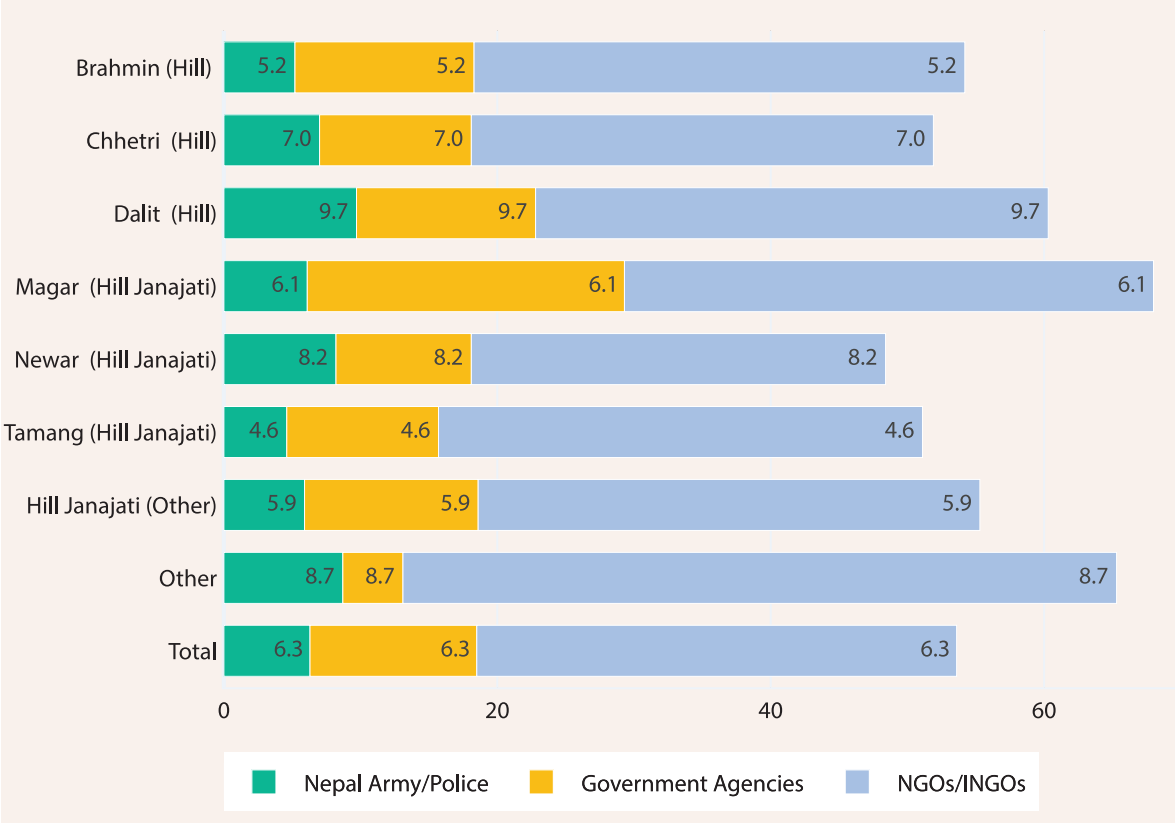
95 Nepal Earthquakes: UNICEF speeds up response to prevent child trafficking. https://www.unicef.org/media/media_82328.html. See also Banskota, P. 2015. Uddar gareko bhaniyeka 215 balbalika haraye [215 Rescued Children Missing]. Kantipur, June 28.

96 Bhandari, A., Rathaur, H., Manandhar, R. and Adhikari, N. 2015. Phakaundai laijandai [Luring and trafficking]. (https://ekantipur.com/ampnews/2015-06-27/411600.html). Kantipur, June 27.

development partners, NGOs and INGOs provided various forms of support for women. During the recovery phase, external organizations organized awareness raising activities about disaster risk reduction, women's issues, and trainings on construction and other enterprise development in the locations where they work.

Although the coverage has been limited in terms of reaching out, some of the assistance provided during the relief phase was reported to be highly useful to women. For example, the UN and other agencies provided "Dignity Kits" to women, which contained individual packages of clothes, hygiene supplies including sanitary pads, mosquito nets and a torch, an essential item to safeguard them at night. Access to such essential materials and information on reproductive health targeted to women were significant support provided. Figure 7.1 shows the source of various kinds of help provided to women during the relief phase.

Figure 7.1: Sources of help received by women and children during emergency by social groups (percent of households), CRS 2019



In April 2016, the NRA formulated the Post Disaster Reconstruction Framework (PDRF) in which it states, in order that women as a special needs group are not left behind, the NRA promised to "develop solutions that benefit the poorest and ensure that interventions are tailored to meet their needs." The PDRF also mentions that "particular efforts will be made to support reconstruction of houses of single women, persons with disabilities, senior citizens, marginalized groups and communities living in remote and inaccessible areas and to help them access recovery assistance from the government and its partners."[97]

97 NRA, 2016. Post-Disaster Recovery Framework. Pp. 17

In 2017, the NRA established a Gender Equality and Social Inclusion (GESI) section to ensure the effective mainstreaming of GESI components in recovery and reconstruction efforts, in line with the GESI recommendations in the PDRF. The GESI unit was also responsible for coordinating partnerships at the sub national level for mainstreaming and compliance of GESI, promoting GESI livelihoods and economic empowerment, putting protection mechanisms in place, and addressing all forms of violence against women, girls, boys and other sexual and gender minorities. The NRA's GESI unit has reported various activities carried out to strengthen GESI in governance and institutions.[98]

In 2018, the NRA offered additional grants of NRs. 50,000 for vulnerable groups to help with private house construction. Despite some limitations, this was an important initiative with regard to GESI. The NRA criteria for identification of vulnerable groups included single women but it was restricted to provide grants only to single women heads of household above 65 years old as eligible beneficiaries.

In addition, during the reconstruction, emphasis was given to inclusion of women in trainings on masonry and other technical aspects. Engaging women in non-traditional work such as masonry was also an attempt to break gender norms. Working in such fields was a new opportunity for women but a gender gap in wages and other gender-based discrimination against women in work space continued, as women reported the difficulties of finding work and not being trusted as to having appropriate skills. About half of the people who received at least one type of training are women (Table 7.1).

Table 7.1: Percentage of households with at least one type of training received after disaster by social group and sex, CRS 2019

Social Group	Male	Female	Total Sample
Brahmin (Hill)	4.29	4.81	404
Chhetri (Hill)	6.41	3.13	728
Dalit (Hill)	10.21	6.05	259
Magar (Hill Janajati)	8.28	3.61	181
Newar (Hill Janajati)	5.23	3.23	413
Tamang (Hill Janajati)	8.57	3.03	938
Hill Janajati (Other)	8.28	2.51	354
Other	5.41	5.71	23
Total	**7.21**	**3.52**	**3,300**

Besides the mainstreaming of GESI, the NRA stated, "Our reconstruction and recovery needed to focus on building on the positives and correcting social, economic, infrastructural, mental and political 'historical deficits'." This indicates that NRA is committed to take an equitable approach with special measures to support historically excluded and vulnerable populations. The NRA defines excluded groups as those "who have experienced inter-generational discrimination and have been systematically excluded which include women, poor, Dalit, Adivasi/

98 Evolution and Progress of NRA's GESI Accountability in Reconstruction and Recovery 74/75 to 76/77 and beyond, NRA 2019.

Janajati, Madhesi, Muslim, persons living with disabilities, LGBTIQ,[99] and people living in remote areas." Vulnerable Groups, on the other hand, refer to "groups of people whose disadvantage or risk of disadvantage is situational rather than structural."[100] This important initiative provides a strong foundation to regard women and girls as excluded and vulnerable during disasters. But more could be done. However, women from historically excluded and vulnerable groups face multiple levels of discrimination and disadvantages (social, economic and political) such as Adivasi Janajati and Dalit women. Thus an intersectional approach needs to be used in understanding, planning and strategizing differential treatments beyond a universal approach. The concept of GESI in NRA works so far has remained in principle and has not been effectively implemented.

7.3 Vulnerabilities and resilience

Women are generally more vulnerable than men due to gender-based violence and trafficking, disparities in health care and education access, low decision making authority, higher rates of poverty, and lower linking social capital. When calamities strike, women's vulnerabilities are accentuated. Because of the pre-existing gender inequalities, discriminatory cultural norms and women's gendered roles, women become more prone to gender-based violence, including sexual assault, physical abuse and human trafficking.

Women and girls usually have the primary responsibility for caring for the home and the people in it including children, older family members and people with disabilities. During disasters their caregiving responsibilities often prevent their ability to escape from casualties. This vulnerability should also be looked at in its intersectional nature in the gendered impact of disasters. For example, in the context of Nepal, women and girls from the Adivasi Janajati and Dalit communities also have higher rates of poverty and reduced access to employment opportunities. They have also faced greater challenges to access to health care services, education and information, which have already placed them in multiple levels of disadvantages. Situations of disasters like the 2015 earthquakes served to exacerbate this condition of disadvantage and lack of access.

Access to education and information is a major indicator for resilience capacity. Of the total sample population aged 6 years and above in the earthquake affected area, 20 percent people are illiterate. The rate of illiteracy among women (26%) is double than that of men (13%). The gender disparity is even starker among those who have studied Bachelors level and above. Irrespective of caste, ethnicity, and location, women are much behind than men in educational attainment.

The likelihood of falling below the poverty line for female-headed households, which comprise 24 percent of the total sample in this study, is generally higher or same as male-headed households.[101] Female-headed households have less linking social capital—network with influential people who can help in the time of need -- (54%) compared to male-headed households (60%). The higher level of vulnerability for women in general that reduces resilience capacity, is due to the age-old "patriarchal value system which perpetuates women's subordination."[102]

99 *LGBTIQ* is an abbreviation for lesbian, gay, bisexual, transgender, intersex and queer.

100 NRA, Gender Equality and Social Inclusion (GESI) in Reconstruction/Rehabilitation and Livelihoods 2017-2019 ++. See also NRA, Ensuring GESI in reconstruction, http://www.nra.gov.np/en/resources/details/JumXQ_coFf17AvdtEZszJZee4s-eOLAfhoND1zN2XcQ

101 Nepal's Multidimensional Poverty Index: Analysis Towards Action. National Planning Commission and Oxford Poverty and Human Development Initiative (OPHI), 2018 states "Twenty three point eight percent of the population live in female headed households, and 28.6% of people are MPI poor. ... this means that female and male-headed households face the same likelihood of being multidimensionally poor." Pp. 18.

102 National Women's Commission of Nepal, 2011. 'Nepal's Implementation Status of the Convention on the Elimination of All Forms of Discrimination against Women (CEDAW).'

While women are more vulnerable to disasters, their capacities to respond to the stressor actually show them as more resilient. Ethnographic study reveals that women's informal network and communication with relatives and community members play a crucial role in forming bonding and bridging social capital. Similarly, in many instances, women are more active in mobilizing the community members in times of needs of mutual support. Contrary to the common representation of women as mere victims of the disaster, women not only were proactive in rescuing and saving lives during the disaster, but they also had taken responsibility to support children and other family members. These features of women's resilient capacity often remain unrecognized.

In summary, disaster had a disproportionate negative impact on women compared to men. The women had to endure higher and differential burden due to historical exclusion, patriarchy and their gendered responsibilities. Women's vulnerabilities are exacerbated by disasters and thus require a recovery approach that goes beyond universal treatment. Protection from gender-based violence, trafficking, access to reproductive health services, privacy and security are major distinctive needs of women and girls during disasters such as the earthquakes. The support provided by the government and international agencies/organizations in rescue, relief and recovery has taken some considerations of these factors to a certain extent. Identifying characteristics of women's vulnerability and implementing targeted programs for women, however, has been limited. Similarly, recognizing women's resilience and their capacities, and the need for strengthening them in disaster risk reduction is one of the key issues emerging from the research.

CHAPTER 8

Disaster Preparedness

CHAPTER 8

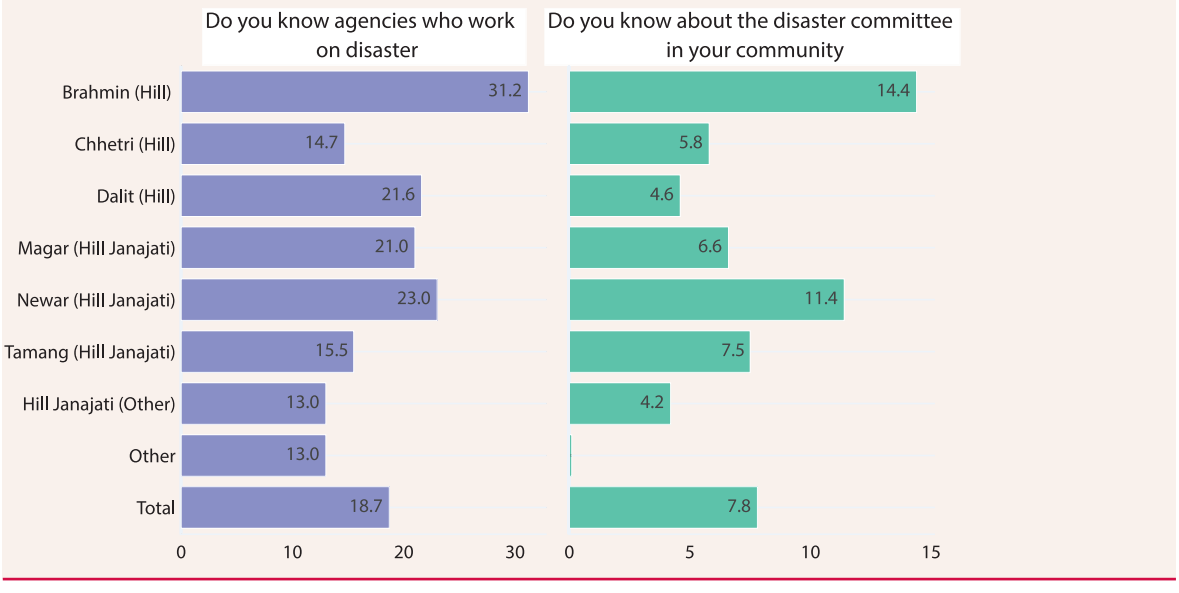
Disaster Preparedness

Disaster preparedness enhances the capacity to anticipate and plan to avoid or minimize the risk from disasters, and the ability to respond to, and adapt in a disaster situation. Preparedness involves the steps taken by individuals, households, communities, organizations and governments to mitigate the impact of hazards. Awareness on risk reduction and preparedness for future management is key.

In order to assess the level of preparedness, the survey asked three questions: 1) whether people had knowledge about disaster preparedness prior to the 2015 earthquakes and had intentionally planned to reduce the risk, 2) whether they are aware now and their newly built houses are earthquake resistant, and 3) whether they are aware about the institutions that work on disaster and they are involved in community level disaster risk reduction and management related committees.

The survey results show that prior to the 2015 earthquakes the level of disaster preparedness was significantly low (Figure 8.1). Only 15.7 percent of households were aware of disaster preparedness prior to 2015 earthquakes. The percentage of households who had planned for mitigating the disaster was even lower at only 1.8 percent. Overall, Dalits, Tamang and other Hill Janajatis had lower levels of preparedness. Similarly, respondents outside the Kathmandu valley had lower level of awareness (14%), compared to within the valley (26.4%); the poorer households had less awareness (13.7%) than richer households (18.5%), and female-headed households had less awareness (14.2%) than other households (16.2%).

Figure 8.1: Percentage of households with disaster preparedness knowledge and disaster risk reduction plan before 2015 earthquake, CRS 2019

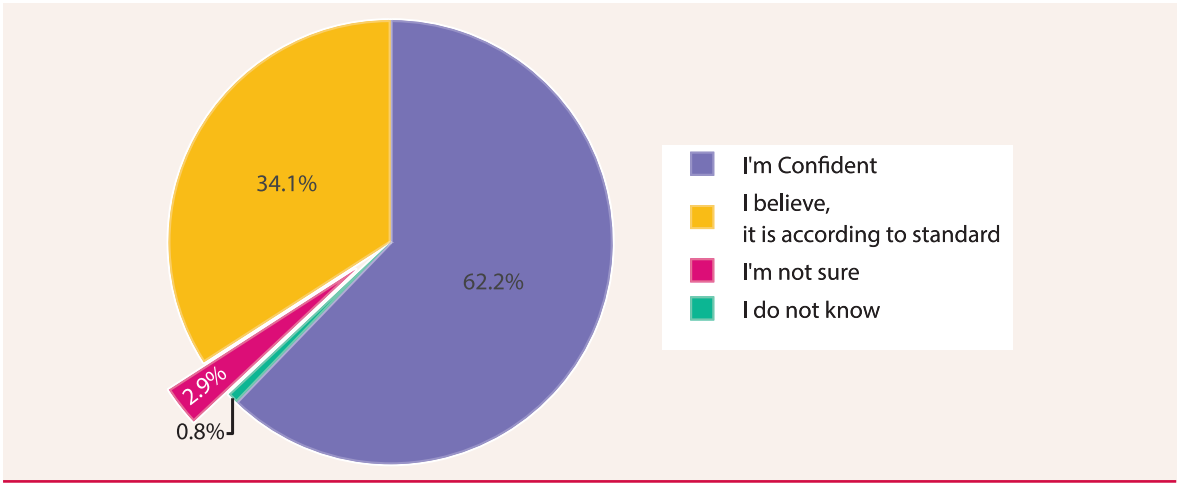


The majority of people lived in traditional houses of mud and stone. Even many of the Reinforced Cement Concrete (RCC) buildings, which somehow survived the 2015 earthquake, were not built using earthquake resistant techniques.

The situation now, however, has improved. More than 95 percent of respondents reported that they are aware about the need for disaster preparedness. Compared to before the earthquakes, the houses built after the earthquake, whether built with government grants or not, have incorporated earthquake safety measures. The 2015 earthquakes and continuous aftershocks have created new awareness of possible danger. Skill development has also added to disaster preparedness. Many village masons have learned earthquake resistant building techniques.

The survey result shows that approximately two-thirds of the households felt confident about the earthquake safety measures taken in the building of their new houses. One-third of the households were not fully confident but reported that they have built according to the standards set by the NRA and they believe that it should be safer in future earthquakes. Only around three percent reported that they are not sure whether the houses they built are earthquake resistant or not (Figure 8.2). There is no significant variation in perception by social group, economic status, area and female-headed household and others.

Figure 8.2: Perception of earthquake safety of newly built houses (percent of households), CRS 2019

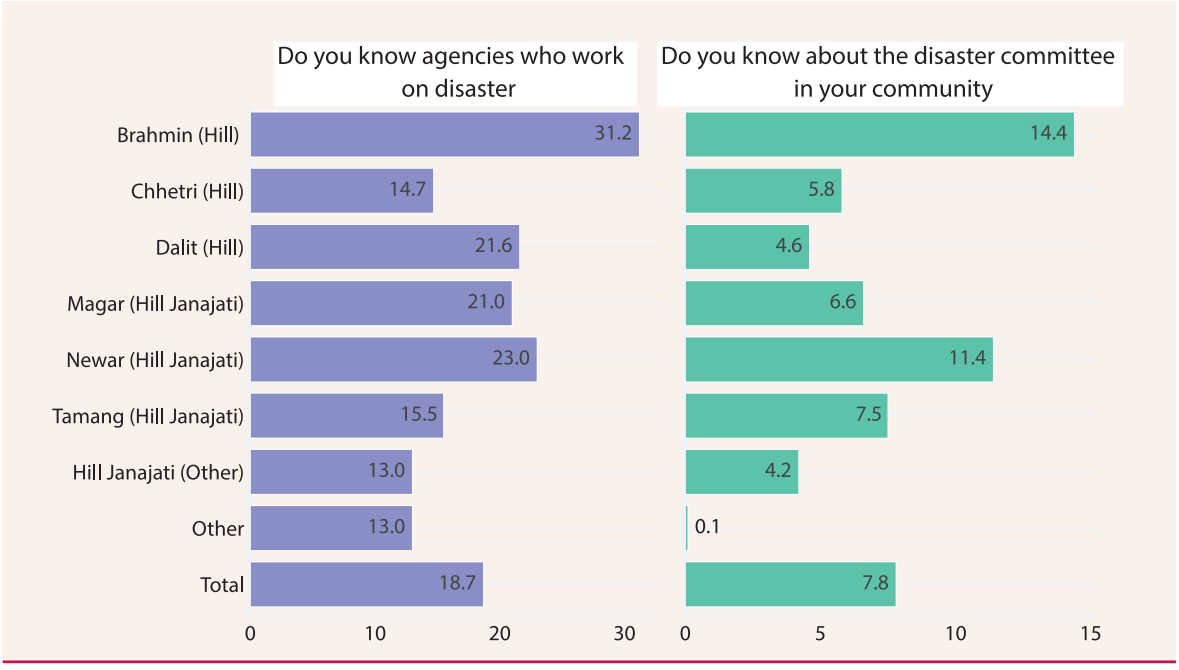


The CRS also asked respondents whether they know about the governmental and non-governmental agencies that do disaster work including the NRA, DDCCs, various I/NGOs, and relevant private organizations. 18.7 percent of households know about the organizations, which work on disaster-related issues (Figure 8.3). Less knowledge about the organizations working on disaster related issues is a result of limited numbers of such organizations in operation and limited outreach of the organizations who are operating.

The survey result shows that only 7.8 percent of the households are aware of the existence of disaster management committees at the local level. Some agencies working on disaster management have formed local disaster management committees in various locations within the earthquake-affected districts. Their coverage, however, is limited. The local governments have not yet started to form such committees as provisioned in the Disaster Risk Reduction and Management Act 2017. It is crucial that when these local level committees are eventually formed, they have to have a more inclusive representation from a gender, caste/ethnicity and class perspective, so that

the preparedness, awareness raising, and plans that will be put in place are responsive to the needs of the local communities in a comprehensive and inclusive manner.

Figure 8.3: Percentage of households with knowledge of institutions working on disaster and local disaster management committees by social group, CRS 2019



A similar picture emerges about knowledge about local committees. Outside the Kathmandu valley people (7.2%) have a lower level of knowledge compared to those within the valley (11.8%); poorer households know less (5.4%) than richer households (8.9%), and female-headed households have less knowledge (5.7%) compared to other households (8.4%).

In summary, the awareness on disaster risk reduction has significantly increased compared to the situation at the time of 2015 earthquakes. A large majority of the respondents feel that the houses they have built have adopted technologies that are earthquake safe. The necessary institutional mechanisms for future disaster risk reduction management including functioning committees at the local level, however, are only at the initial stages. Empowering the community level organizations for disaster management is foundational to successful preparedness work that is more responsive to the specific local needs and the diversity of the population within the coverage area.

CHAPTER 9

Conclusions and Recommendations

CHAPTER 9

Conclusions and Recommendations

In a world increasingly prone to disasters, understanding community resilience and recovery has become more important than ever. This study examines household and community resilience capacities after Nepal's 2015 earthquakes. It pays particular attention to differential impact mainly from the perspective of gender, caste, ethnicity and differences in income levels. The results of this study can be useful in better understanding resilience capacity, for improving on-going recovery tasks, and for strengthening disaster risk reduction and management planning.

The 2015 earthquakes killed 8,970, injured thousands of others, and left 800,000 without homes. Most families witnessed the destruction of houses and property. The sense of grief and loss was tremendous. Livelihoods and normal life were badly disrupted. Nepalis endured storms, monsoon rains, landslides and winter cold in temporary shelters despite tremendous health and security hazards. The 2015 earthquakes and the aftershocks created deep fear, a sense of the frailty of human existence, as well as a renewed awareness of humanity's common bonds.

The natural calamity did not have neutral impacts. Historical social inequalities shaped the disaster's direct impacts as well as the recovery; these pre-existing inequalities often undercut the resilience capacity of communities. The earthquakes disproportionately undercut the area's poor and historically marginalized peoples. Even when the level of damage was the same, the poor were further pushed in hardship, while those who had significant savings and access to sources of support -- "social capital" -- recovered quicker.

A comparison between resilience capacity and recovery status shows that there is a clear correlation between these two variables. A common pattern emerged revealing that the higher the resilience capacity, the more likelihood of better recovery. This pattern is similar for both social groups and economic class (see Figures 5.18 and 5.19). For example, Brahmin, Newar and Chhetri respondents who possess higher resilience capacity had higher levels of recovery status while Dalits and Tamangs appear in the bottom in both variables. Similarly, richer households had a far greater recovery rate than their poorer counterparts. Inequality persists in resilience capacity and inclusive recovery is yet to be achieved.

Poverty was both a cause and a consequence of the disaster. Poor households from all castes and ethnic groups suffered disproportionately in the disaster as they lived in weaker physical structures and possessed less access to education and information. Above all, the indigenous Tamang population was hit in disproportionate numbers, followed by other endangered and highly marginalized Hill Janajatis and Dalits. Of the total, approximately 65 percent of those died came from Hill Janajati groups. Tamangs who comprised 21 percent of the population in the region suffered one-third of the deaths. Tamangs and other indigenous peoples in the region whose mother tongue is not Nepali also suffered from language barriers.

During the four years since the earthquakes, basic house reconstruction was completed. By the fourth anniversary of the earthquakes, roughly 75 percent of families had built a new house. Around 20 percent of the poorest families built one-story-one-room houses with help from Rs. 300,000 in government grants. Approximately 60 percent of families who built new houses built one-story-two-room houses. With the big drop in house size traditional architectural designs almost vanished. Since space in the new houses is largely insufficient, people will likely have to invest in further additions to the buildings in the future as they save the required resources for it.

The people generally accepted the universalized housing grant support scheme but it also brought a number of unintended consequences. The NRA initiatives to provide additional cash support to purchase land for landless and dislocated families, and the additional support to vulnerable households was regarded as a progressive step by the affected communities. This support, however, has significant limitations in achieving its outcomes. They require more than limited financial grants and technical options. There are a host of other reasons such as lack of access to subsidized loans, government services and difficulties in arrangement of labor, material, and other logistics that force them to remain in temporary shelters or build one-story rooms. The experience from recovery assistance can provide important learning for the future.

Progress in livelihood recovery has been insufficient. People hoped for more. There haven't been enough employment generation programs, aside from some technical training. More than 40 percent of families reported having taken loans for house reconstruction, often at very high interest rates. Approximately the same proportion of families drained their savings for house construction. Due to the extra work after the disaster, the workload of women and children has increased. Dropout rates, especially of high school students, have dramatically increased, to up to 18 percent, because of financial hardship and disruption in school. Higher drop-out rates have been for boys compared to girls possibly due to pressures to look for work to support the family. In the absence of employment opportunities within the region, households who have able-bodied family members have opted for sending them out to other cities in Nepal or other countries for labor.

Families deployed multiple coping mechanisms to adapt to the extremely difficult living conditions. Those with limited resources cut their consumption and diverted savings and earnings to shelter, food, and clothing. Mutual support among relatives and community members turned out to be a major help for people struggling with the disaster and rebuilding. Communities have exhibited remarkable resilience in surviving the catastrophe, dealing with the grief and loss, and in struggling to rebuild and recover.

Resilience capacity – the capacity to prepare for and recover from disaster – measured in terms of carefully selected household characteristics shows persistent inequality among different social groups. In all indicators, including education, economy, and access to "linking" social capital, Tamangs, Dalits and other Hill Janajatis consistently lag behind. Resilience capacity both reflects the legacy of pre-existing disparity and disparities reinforced by the disaster. Of all the indicators, the most crucial are the levels of poverty and of education, including the dropout rate. These indicators show that residents of the earthquake-affected districts, especially poor rural residents of marginalized groups in hard to reach mountain communities, are likely to fall substantially behind Nepal's overall population.

Resilience capacity has not been spread equally among the region's different castes and ethnic groups. Households with better education, savings, salaried employment and linking social capital carried a higher chance of bouncing back better. But for many with a lower level of resilience capacity, the disaster and the missed opportunities of recovery put them in a downward spiral, eroding their capacity to adapt, prolonging disaster

impacts. Increased poverty and the dramatic rise of school dropout rates, in particular, is likely to put people in perpetual vulnerability and prevent them from bouncing forward.

During disasters, people expect swift and ongoing support from the government. A core duty of the state is to protect citizens. Governments earn legitimacy by helping citizens during emergencies. Through the equitable distribution of materials, disaster recovery work can reduce inequality and bring about transformative change. Disaster, however, also provides an occasion for ruling authorities to consolidate centralized power.

The role of the Nepali state during the 2015 earthquakes and its aftermath exemplifies both dimensions - protection of citizens but also consolidation of authority. The effective and helpful rescue operation that the Nepal Army and Police carried out immediately after the earthquake around the country, especially in urban areas, won applause from the general public. The security forces also deserve credit for quickly gathering information about the extent of death and damage. The government also successfully supported basic reconstruction work even during Nepal's major political transition.

The government was less successful in two main areas. The first is that the participation of the community, local leaders and representatives in the process of reconstruction was minimum. Major decisions about technology, the nature of support and the processes adopted were decided centrally by the government. The NRA itself fell short in its own composition of diversity among staff from the viewpoint of gender and different social backgrounds, which could have brought in valuable perspectives in their work. In collaboration with international donors, it decided to adopt an "ownership driven model" in which house owners themselves were expected to take proactive initiative for rebuilding. In practice, this turned out to be a process externally driven as the NRA demanded rapid receipt of tranches by building the houses that could easily pass the approval of government technicians, in order to expedite the process. The process of verification for the reconstruction grant by the NRA technicians deployed from Kathmandu symbolized the bureaucratic and centralized control of the process. Through the NRA, the government took sole authority for reconstruction and its centralized operation made local community control mostly insignificant.

The second area in which the government was less successful was in ensuring adequate measures for equity; the advancement of the poor, women, vulnerable and historically marginalized sections of the affected population. Although the NRA initiated a useful provision to provide additional support to the displaced, landless, and the vulnerable, its primary emphasis was on cash transfer, which alone was inadequate to help them toward full recovery. Moreover, the disbursement of top-up grants and provision of subsidized loans has not been effective due to cumbersome processes. The most crucial gap has been in identification of vulnerable families, which left out many of the families who were vulnerable. In addition, the wider spectrum of special needs groups, particularly the poorest of the poor, from among the historically marginalized and linguistic minorities was missing in the government provisions. Having said this, the government's policy of support to some of the vulnerable people had an outstanding achievement in terms of getting ownership of homestead land by a significant number of landless households.

Among the population, the experience of two big earthquakes and multiple aftershocks heightened awareness of the need for disaster preparedness and earthquake-resistant buildings. People are confident that almost all new houses can meet government standards and resist future earthquakes.

However, there is an important institutional gap. Disaster risk reduction and management plans have yet to build community level institutions. The Disaster Risk Reduction and Management Act 2017 has envisioned Disaster Management Committees at the local and other levels. Building on new awareness for preparedness, communities can and should be mobilized for locally driven disaster management planning. Putting communities at the center of disaster planning will help ensure its effectiveness as well as the meaningful participation of marginalized people. Doing so is also imperative for strengthening community solidarity and encouraging mutual support among community members.

Finally, the work for full recovery needs to continue, if we want to build a truly resilient society. Guided by principles of equity and distributive justice, future work must target a wider range of vulnerabilities, including programs to address the needs of the poor, and marginalized caste and ethnic communities. In order for full recovery of livelihoods, targeted employment generation programs should be initiated. Improved implementation of existing programs in the earthquake-affected area for employment generation, such as the Prime Minister's Employment Program, the challenge fund for enterprise development programs, low-interest loans for enterprises, and special support to the poor through provisions of "poor identification cards," is necessary. Given the long-term impact of the increased school drop-out rate, additional classes or other programs to support female and male students who speak minority languages would be important strides toward creating a level playing field and just society.

Recommendations

Based on the findings and the issues identified through this research, the study offers the following specific recommendations relevant for future policy and programs:

1. In general, with future disaster planning efforts, policies and programs should prepare for and take into account the disproportionate impact on social groups, gender, economic class and other vulnerabilities. Governmental and other parties should understand the historical inequities that characterize much of Nepal, study those in advance in each district and province, and in future relief, recovery, and reconstruction work provide tailored and sufficient programs. Disaggregated data is a must.
2. Help the one-fifth families still in temporary housing. Families from poorer backgrounds who are living in temporary shelters even now, are in danger of becoming permanent residents in temporary shelters. Their housing, livelihood, and social needs should be better assessed and addressed. The safety, security, and health concerns of women and girls still in temporary housing should be emphasized.
3. Assist those who have high interest rate debts related to house reconstruction. A better needs assessment should be conducted. Target high debt households with livelihoods improvement support.
4. Provide design suggestions for how to improve 1- and 2-room houses. Find ways to encourage traditional designs. Many of these houses are underutilized or unused. There may be simple ways that houses can be altered or re-imagined to meet more needs of their owners, while bringing back some traditional features.
5. Intensify livelihood recovery and employment generation programs to check possible high growth in the poverty rate. Expand the definition of vulnerable population and find a way to reach the "poorest of the poor" with special measures

6. Expand programs specially targeted at women and girls. Address the distinctive vulnerabilities faced by women related to gender-based violence, safety, trafficking, and access to reproductive health services. Improve their access to education and employment. Recognize and build on the resilience capacity of women including on social capital and community mobilization for future disaster preparedness and risk reduction.

7. Initiate special programs for school dropouts; create special programs for Tamangs, Dalits, and poorest of the poor students in schools, including the use of mother tongues in school education. Programs for dropouts and at-risk students – to help them re-integrate back into schools or build marketable skills - can be implemented. Several efforts at remedial education have brought good results in other parts of the country. Research shows that early grade instruction in mother tongue languages (which can be combined with highly sought after English education) yields better education results for a vulnerable population. Education is a key resilience capacity builder in the long run.

8. Create programs to mitigate the digital divide – especially access to internet for poorer and marginalized families. Access to the internet and computer skills creates economic opportunity and connection to national and global sources of useful knowledge.

9. Create programs that are less top down. Review the current governmental structures and programs, and plan better for future situations. Promote inclusive institutions and governance at all levels for dealing with future disasters. Create ways for more community inputs and active engagement.

10. Create disaster risk reduction and planning awareness raising materials in Nepali and other minority languages. Women's organizations, representative organizations and civil society could potentially partner to provide capacity building and training for women in disaster preparedness and planning.

11. Implement community level disaster planning efforts together with local bodies. Such planning should take into account other forms of disasters, particularly landslides. The 2015 earthquakes have triggered annually escalating landslides as secondary hazards in the affected districts in the mountains.

ANNEXES

ANNEX I

Survey Design and Methodology, CRS 2019

ANNEX II

Field Researchers and Research Assistants

ANNEX I

Survey Design and Methodology, CRS 2019

1. Introduction

The 2015 Nepal earthquakes (25 April and 12 May) and their aftershocks had an impact on 31 districts. The degree of that impact varied; of the districts affected, seven were classified as severely hit, seven as crisis-hit, five as hit with heavy losses, six as hit, and six as slightly hit, by the Government of Nepal. This study comprised seven severely hit and seven crisis-hit districts, i.e. the most affected 14 districts which included Gorkha, Dhading, Rasuwa, Nuwakot, Sindhupalchowk, Dolakha and Ramechhap as severely hit, while the crisis-hit districts were Kavrepalanchowk, Makawanpur, Lalitpur, Kathmandu, Bhaktapur, Sindhuli and Okhaldhunga.

2. Survey Design

2.1 Sample Design

The survey collected information from a representative sample of the earthquake-affected households in the 14 most earthquake-affected districts of Nepal. The primary focus of the survey were to present the situation of these households regarding damage, rescue, relief, and rehabilitation, and the impacts of the earthquake on socio-demography, employment and livelihood, the education of children, health, and population mobility.

For a sampling frame for the survey, CRS 2019 used the list of beneficiary households in the 14 most earthquake-affected districts 121prepared by the Earthquake Affected Housing Reconstruction Project of the Federal Affairs and Local Development Ministry. Out of 1,036,568 households that it surveyed, the NRA identified 816,564 as eligible for grants. The CRS 2019's Primary Sampling Unit (PSU) is the ward (the smallest administrative unit in the country), which prior to the 2015 Constitution, was called a Village Development Committee (VDC); if a ward had more than 100 beneficiary households, the sub-ward was used.

2.2 Sample Size Determination

It is a common practice in the sample size determination that the size of samples is largely an outcome of a compromise with time and resources. The sample size 'n' was determined using the power calculation formula in this study for proportionate/unequal size, i.e. single sample domain.

The sample size is determined at 95 percent confidence level (type-I error rate, at 95 percent confidence level, $z\alpha/2 = 1.96$), 80 percent power value (type-II error rate or $(1-\beta)$, at 80 percent power, i.e. at 20 percent type-II error, $z\beta = 0.842$), and effect size of 0.08 (less than small effect size class), along with design effect of 2.4 (at cluster size of 15 households and intra-cluster coefficient of 0.10) and 10 percent non-response rate. With these values, the sample size would be around 3,300 households from within the 14 most earthquake affected districts

considering a single sample domain (proportionate distribution) having 220 clusters/PSUs with 15 households (HHs) per cluster. The sample size was estimated with the following formula:

$$n = \frac{(z_{\alpha/2} + z_{\beta})^2}{ES^2}$$

$$n_{srs} = \frac{n}{1 + (n/N)}$$

$$n_{cluster} = n \times deff \times k$$

where,

- n = initial sample size
- n_{srs} = sample size simple random sample
- N = population size
- $n_{cluster}$ = sample size for cluster design
- α = type-I error rate
- β = type-II error rate
- z = the value from the standard normal distribution reflecting the confidence level (1-α), at 95 percent confidence level, $z_{\alpha/2} = 1.96$; and power (1−β), at power 80 percent, $z_{\beta} = 0.842$
- ES = effect size
- deff = design effect
- k = adjustment for non-response rate (k = 1/non-response rate)

In a cluster design like this, one cannot take too many households from a cluster because it tends to increase the clustering effect and reduce sampling efficiency. Taking only a few households per cluster, on the other hand, tends to increase the survey cost. A sample of 15 households per cluster is recommended with an expected design effect of 2.4 (Turner, 2003). This implies that a cluster design may be assumed to be 2.4 times worse than the simple random sampling. Following this principle, this survey selected 15 households from each sample cluster with the expected design effect of 2.4. Based on this, a total of 220 clusters were selected to get 3,300 households from the 14 most earthquake affected districts (3,300/220 households per cluster).

2.3 Sample Selection

The sample for the survey is based on a two-stage representative sample of the earthquake affected beneficiary households. In the first stage of sampling, 220 PSUs are selected using systematic sampling with probability proportional to size (PPS) of beneficiary households in the 14 most earthquake affected districts as a single survey domain. The complete list of beneficiary households in each selected enumeration area based on the data files of the Earthquake Affected Housing Reconstruction Project, whether a ward or sub-ward (PSU), was then used as a sampling frame for the second stage selection of households.

First Stage

First, the number of beneficiary households affected at the ward level in each VDC or municipality of the 14 districts was determined. The 14 districts were ordered according to three categories of earthquake-hit namely severely hit, crisis-hit (outside Kathmandu valley) and crisis-hit inside Kathmandu valley. Since the survey was conducted first in the districts of Kathmandu valley, the order of earthquake-hit districts was placed as crisis-hit inside Kathmandu valley, crisis-hit outside Kathmandu valley and severely hit in that order in a sampling frame

of districts. But the VDCs/municipalities and districts within each earthquake-hit category were placed in the same order of geographical location as used in the data files of the Earthquake Affected Housing Reconstruction Project. Then, using the total number of earthquake affected beneficiary households, 220 PSUs were selected based on the PPS method.

Second Stage

In the second stage of sampling, systematic random samples of 15 beneficiary households in each selected PSU are selected from the complete list of earthquake affected beneficiary households in that PSU. If the selected PSU had more than 100 beneficiary households affected by the earthquake, it was segmented into 2 parts. If the selected PSU had more than 200 beneficiary households affected by the earthquake, it was segmented into 3 parts and so on, and one segment was selected randomly.

The following table shows the allocation of survey PSUs in the affected districts:

Allocation of survey PSUs

Allocation of survey PSUs

SN	District	PSUs (ward/sub-ward) of Districts and VDC/Municipalities	No. of PSUs
	Crisis-hit districts, Kathmandu valley		32
1	Lalitpur	1. Bajrabarahi Municipality, ward 11 2. Bukhel VDC, ward 5 3. Dhusel VDC, ward 3 4. Godawari Municipality, ward 7 5. Karyabinayak Municipality, ward 14 6. Lalitpur Sub-metropolitan city, ward 9 7. Lalitpur Sub-metropolitan city, ward 27 8. Shankhu VDC, ward 6	8
2	Bhaktapur	1. Anantalingeshwar Municipality, ward 13 2. Bhaktapur Municipality, ward 4 3. Bhaktapur Municipality, ward 11 4. Changunarayan Municipality, ward 1 5. Changunarayan Municipality, ward 9 6. Madhyapur Thimi Municipality, ward 8 7. Mahamanjushree-Nagarkot Municipality, ward 4 8. Mahamanjushree-Nagarkot Municipality, ward 11 9. Suryabinayak Municipality, ward 11	9
3	Kathmandu	1. Budhanilkantha Municipality, ward 11 2. Chandragiri Municipality, ward 6 3. Chandragiri Municipality, ward 22 4. Dakshinkali Municipality, ward 13 5. Gokarneshwar Municipality, ward 8 6. Kageshwori-Manohara Municipality, ward 9 7. Kathmandu Metropolitan city, ward 13 8. Kathmandu Metropolitan city, ward 21 9. Kirtipur Municipality, ward 4 10. Nagarjun Municipality, ward 3 11. Nagarjun Municipality, ward 12 12. Shankarpura Municipality, ward 5 13. Shankarpura Municipality, ward 14 14. Tarkeshwar Municipality, ward 8 15. Tarkeshwar Municipality, ward 20	15
	Crisis-hit districts, outside Kathmandu valley		53

SN	District	PSUs (ward/sub-ward) of Districts and VDC/Municipalities	No. of PSUs
4	Okhaldhunga	1. Barnalu VDC, ward 3 2. Chyanam VDC, ward 9 3. Kalikadevi VDC, ward 3 4. Mulkharka VDC, ward 1 5. Pokali VDC, ward 4 6. Shreechaur VDC, ward 1 7. Thakle VDC, ward 9	7
5	Sindhuli	1. Bahuntilpung VDC, ward 8 2. Bhadrakali VDC, ward 8 3. Dudhbhangyang VDC, ward 7 4. Jarayotar VDC, ward 7 5. Kalpabriksha VDC, ward 7 6. Kamalamai Municipality, ward 7 7. Kapilakot VDC, ward 8 8. Ladabhir VDC, ward 1 9. Netrakali VDC, ward 8 10. Ranichuri VDC, ward 1 11. Sirthauli VDC, ward 2 12. Tandi VDC, ward 9	12
6	Kavrepalanchowk	1. Balting VDC, ward 5 2. Banepa Municipality, ward 11 3. Bolde Fediche VDC, ward 2 4. Chaubas VDC, ward 4 5. Daraune Pokhari VDC, ward 9 6. Dhulikhel Municipality, ward 6 7. Falate Bhumlu VDC, ward 6 8. Ghartichhap VDC, ward 5 9. Jaisithok Mandan VDC, ward 8 10. Katike Deurali VDC, ward 7 11. Kharelthok VDC, ward 7 12. Kushadevi VDC, ward 7 13. Mahadevsthan Mandan VDC, ward 4 14. Majhifeda VDC, ward 3 15. Methinkot VDC, ward 8 16. Nayagaundeupur VDC, ward 8 17. Panauti Municiaplity, ward 6 18. Panchkhal VDC, ward 6 19. Pokhari Narayansthan VDC, ward 1 20. Saldhara VDC, ward 1 21. Saping VDC, ward 7 22. Shikhar Ambote VDC, ward 4 23. Thuloparsel VDC, ward 4 24. Ugratara Janagal VDC, ward 6	24

SN	District	PSUs (ward/sub-ward) of Districts and VDC/Municipalities	No. of PSUs
7	Makawanpur	1. Bajrabarahi VDC, ward 5 2. Bharta Pundyadevi VDC, ward 2 3. Daman VDC, ward 6 4. Faparbari VDC, ward 6 5. Hetauda Municipality, ward 4 6. Ipa Panchakanya VDC, ward 2 7. Makawanpurgadhi VDC, ward 5 8. Namtar VDC, ward 9 9. Raksirang VDC, ward 6 10. Shreepur Chhatiwan VDC, ward 9	10
	Severely-hit districts		135
8	Ramechhap	1. Bamti Bhandar VDC, ward 4 2. Bhaluwajor VDC, ward 2 3. Bijulikot VDC, ward 3 4. Chuchure VDC, ward 7 5. Doramba VDC, ward 2 6. Gelu VDC, ward 4 7. Gunsi Bhadaure VDC, ward 4 8. Kathjor VDC, ward 4 9. Khimti VDC, ward 6 10. Manthali VDC, ward 1 11. Namadi VDC, ward 8 12. Phulasi VDC, ward 3 13. Puranagaun VDC, ward 9 14. Rasanalu VDC, ward 4 15. Sanghutar VDC, ward 8 16. Tilpung VDC, ward 5	16
9	Dolakha	1. Bhedapu VDC, ward 2 2. Bhimeshwar Municipality, ward 5 3. Bhimeshwar Municipality, ward 12 4. Bocha VDC, ward 3 5. Chilankha VDC, ward 4 6. Fasku VDC, ward 6 7. Ghyang Sukathokar VDC, ward 6 8. Jhyaku VDC, ward 1 9. Jiri VDC, ward 9 10. Kabhre VDC, ward 9 11. Khopachagu VDC, ward 4 12. Lamabagar VDC, ward 6 13. Lapilang VDC, ward 8 14. Malu VDC, ward 9 15. Namdu VDC, ward 3 16. Sahare VDC, ward 1 17. Sunkhani VDC, ward 2 18. Suspa Kshamawati VDC, ward 5	18

SN	District	PSUs (ward/sub-ward) of Districts and VDC/Municipalities	No. of PSUs
10	Sindhupalchowk	1. Atarpur VDC, ward 8 2. Banskharka VDC, ward 2 3. Bahrabise VDC, ward 5 4. Bhimtar VDC, ward 1 5. Bhotasipa VDC, ward 8 6. Chautara VDC, ward 5 7. Dhuskun VDC, ward 3 8. Fatakshila VDC, ward 3 9. Fulpingkatti VDC, ward 6 10. Gloche VDC, ward 7 11. Haibung VDC, ward 5 12. Irkhu VDC, ward 1 13. Jyamire VDC, ward 5 14. Karthali VDC, ward 1 15. Kunchowk VDC, ward 2 16. Lisankhu VDC, ward 9 17. Maneswara VDC, ward 6 18. Marming VDC, ward 2 19. Pangretar VDC, ward 3 20. Pipaldanda VDC, ward 3 21. Sangachowk VDC, ward 3 22. Selang VDC, ward 2 23. Sipa Pokhare VDC, ward 2 24. Syaule Bazar VDC, ward 6 25. Tauthali VDC, ward 6 26. Thangpalkot VDC, ward 2 27. Thulo Pakhar VDC, ward 5 28. Thum Pakhar VDC, ward 5	28
11	Nuwakot	1. Balkumari VDC, ward 9 2. Betini VDC, ward 9 3. Bidur Municipality, ward 3 4. Bidur Municipality, ward 9 5. Charghare VDC, ward 6 6. Chauthe VDC, ward 3 7. Deurali VDC, ward 9 8. Ganeshthan VDC, ward 1 9. Gerkhu VDC, ward 7 10. Jiling VDC, ward 5 11. Kakani VDC, ward 6 12. Khadag Bhanjyang VDC, ward 1 13. Kharanitar VDC, ward 1 14. Kumari VDC, ward 9 15. Madanpur VDC, ward 4 16. Manakamana VDC, ward 7 17. Okharpauwa VDC, ward 7 18. Ratmate VDC, ward 8 19. Samari VDC, ward 8 20. Sikre VDC, ward 8 21. Taruka VDC, ward 1 22. Thansing VDC, ward 6 23. Tupche VDC, ward 8	23

SN	District	PSUs (ward/sub-ward) of Districts and VDC/Municipalities	No. of PSUs
12	Rasuwa	1. Chilime VDC, ward 2 2. Gatlang VDC, ward 5 3. Ramche VDC, ward 3 4. Yarsa VDC, ward 1	4
13	Dhading	1. Baireni VDC, ward 6 2. Benighat VDC, ward 3 3. Bhumesthan VDC, ward 9 4. Chhatredeurali VDC, ward 3 5. Darkha VDC, ward 8 6. Dhuwakot VDC, ward 6 7. Goganpani VDC, ward 6 8. Jeevanpur VDC, ward 5 9. Jogimara VDC, ward 5 10. Kalleri VDC, ward 2 11. Katunje VDC, ward 6 12. Khalte VDC, ward 5 13. Kiranchowk VDC, ward 9 14. Lapa VDC, ward 3 15. Maidi VDC, ward 5 16. Murali Bhanjyang VDC, ward 2 17. Nalang VDC, ward 8 18. Naubise VDC, ward 9 19. Phoolkharka, ward 3 20. Reegaun VDC, ward 1 21. Salyankot VDC, ward 2 22. Sangkosh VDC, ward 1 23. Semjong VDC, ward 6 24. Tasarpu VDC, ward 2 25. Tipling VDC, ward 5	25
14	Gorkha	1. Aaru Arbang VDC, ward 6 2. Asrang VDC, ward 5 3. Barpak VDC, ward 7 4. Bungkot VDC, ward 1 5. Chhoprak VDC, ward 8 6. Deurali VDC, ward 4 7. Finam VDC, ward 8 8. Gankhu VDC, ward 7 9. Gorkha Municipality, ward 3 10. Gorkha Municipality, ward 9 11. Harmi VDC, ward 7 12. Kharibot VDC, ward 8 13. Makaising VDC, ward 3 14. Manbu VDC, ward 9 15. Muchhok VDC, ward 5 16. Palungtar VDC, ward 2 17. Saurpani VDC, ward 1 18. Simjung VDC, ward 5 19. Taklung VDC, ward 9 20. Tanglichowk VDC, ward 6 21. Thumi VDC, ward 1	21
		Total	220

2.4 Sample Weight

The proportions of beneficiary households affected by the earthquake are different in different districts. Since the sampling is carried out proportionately, it is self-weighted and there is no need of sample weights for any geographic locations to provide statistically reliable estimates for the 14 most earthquake affected districts as a whole, for rural and urban areas, and for different background variables.

3. Selection of Respondents

Generally, the heads of the selected households in the survey were the targeted respondents. In cases where the household head could not provide the required information, a knowledgeable adult household member who could answer the questions was selected as the eligible respondent of the survey.

4. Survey Instrument

The survey used a structured questionnaire which was constructed based on the indicators developed by the Community Resilience Survey team. It was finalized through a series of consultations with different stakeholders and input from the State of Social Inclusion in Nepal (SOSIN) project teams, SOSIN Advisory Committee, and individual experts on disaster resilience.

The questionnaire was specifically designed to obtain information from households about certain socio-demographic characteristics of the population as well as damage to houses; materials used in constructing a house; the rescue, relief and rehabilitation process; employment; livelihood; the education of children, health, population mobility, access to different facilities, ownership of a variety of consumer durable items, and other quantitative data.

The questionnaire was prepared in a single language, Nepali, but it was structured in a respondent friendly way using simple and common language that could be understood by most of the respondents. As this was a household survey, however, there could be respondents in some parts of the country who might not be able to understand Nepali and/or to respond properly in Nepali. In order to solve such language issues, interviewers were hired based on diversity and trained in such a way that they could speak the local language for the interview.

5. Field Survey and Quality Control

Thirteen field survey teams were formed with four members in each team for the CRS. A team was composed of three interviewers and one team supervisor. The supervisor was responsible for coordination, liaising with the community and other stakeholders, and monitoring data collection during the field survey.

There were additional five Research Assistants (RAs) assigned for quality control of the data collection. The main responsibilities of RAs included monitoring and supervision through spot-check of field data collection. Each RA was assigned three field teams for quality control. Further, each field survey team was monitored by at least two RAs during the field survey.

In addition to the supervision by RAs, the SOSIN team (core research team, experts, research fellows and associates) and concerned staff members from USAID and members of the Advisory Committee visited selected sites to monitor and supervise the field survey.

The field team used an Android tablet for data collection. Data collection software was designed using the Android version of CSPro software, freely available from the US Census Bureau. Data collection program was designed in a way that it had an inbuilt system of controlling internal consistencies, range of responses, skipping, sequence and flow of interview, and so on. Tablet surveys have the advantage of minimizing errors in the data generated through paper questionnaire interviews. Another important advantage of tablet survey is that it produces almost clean data from the field itself. Paper interviews need several steps to get a complete data set in the computer, such as collection of questionnaires, editing of filled in questionnaires and data entry into computer. These are the major stages of processing when errors in the data may occur causing distortion of the original data. Such errors are avoided by using tablets in the survey. Data were uploaded to the server located at the center after completion of the interviews by the field survey teams before leaving each PSU. The SOSIN Data Manager immediately checked the uploaded data from the field. The Data Manager and the Community Resilience Survey team provided guidance and technical support to the field team for resolving the problems immediately when any major inconsistencies and/or errors in the data were found. This system allowed immediate action in validating and correcting errors in the data.

During the data collection, various other measures were also taken to ensure collection of quality data. Before starting the interview, the interviewers built a good rapport with the respondents and gained their confidence. Obtaining informed consent of the respondents was a part of the rapport building. Attempts were made to maintain cultural-friendly interviews through the interview from field interviewers belonging to respective social groups.

Field supervisors were responsible for supervising and monitoring the respective team members and for reviewing/checking and validating the information. In order to ensure the completeness of the interview, the field supervisor checked the completed interview in the tablets before uploading data to the center and leaving each PSU. If the supervisor found incompleteness and/or any inconsistency in the data, interviewers were asked for the re-interview of respective respondents.

6. Data Analysis

The Community Resilience Survey has social groups as the main analytical domain. Additionally, gender, household economic level and geographic location were used for understanding the intersectionality. The first level of analysis involves comparison of the eight major social groups Brahmin (Hill), Chhetri (Hill), Dalit (Hill), Magar (Hill), Janajati, Newar (Hill Janajati), Tamang (Hill Janajati), Other Hill Janajati, and others. Other Hill Janajati group include Baramu/Brahmu, Byasi, Chepang/Praja, Danuwar, Gharti/Bhujel, Gurung, Hayu, Jirel, Kumal, Majhi, Pahari, Rai, Sherpa, Sunuwar, Thami, Yholmo and other Adivasi Janajati. The category "other" includes Kumhar, Lohar, Mallah, Musahar, Muslim, Sonar and Others (Table 1.2). The second level of data analysis is done by household economic level and sex where relevant.

Data were summarized in terms of simple bivariate descriptive statistics such as percentage and mean score of specific indicators. Stata SE version 13.0 was used to analyze the quantitative data. Summaries of bivariate analysis are presented in figures and tables. More complex statistical analysis such as indexing of multiple variables for composing indexes, cross-tabulation and multivariate analysis has not been carried out. Data are presented under the sections of disaster effect, recovery, resilience capacity, external support, and disaster preparedness.

Ethnographic data were utilized by focusing on the findings that would complement the key findings of quantitative data. Quotations from the field notes were used in the report where they help to provide a better understanding of the context or illustrate the quantitative data. While the current report was not able to utilize the full extent of the ethnographic data, it is expected to provide great value for further analysis.

7. Ethical Consideration

As the Community Resilience Survey is a social science survey research, it does not have any negative effect on the natural environment. Also, this survey has no biological and medical test on humans. The survey is solely related to the experience of earthquakes and information about its effect on families and individuals and state of recovery and resilience.

Nevertheless, the study collected data from individual on their views, perceptions and personal life experiences. Some of the information were more sensitive in nature, including those on reproductive health, illness and experiences of violence. In order to respect and protect respondent's rights, dignity, and privacy, the research followed a standard protocol on ethical considerations. The study followed guidelines provided by Nepal Statistical Act 2015 and Tribhuvan University Regulations 2072 (V.S.). The SOSIN research obtained clearance from the Ethical Review Board of the Nepal Health Research Council. The review was aimed to ensure respect and protect the people's right, and privacy and no physical and psychological harm against human subjects.

A verbal prior informed consent was taken from each respondent. The respondents were informed about the objective of the study, nature and length of interview, on benefit of participation, right to not participate, and assurance of privacy. Interviewers read out the informed consent to the respondents and provided a copy of it. The interview was terminated if the permission was not granted from the respondent.

In order to protect the privacy and ensure no harm, all personally identifiable information has been removed.

ANNEX II

Field Researchers and Research Assistants

List of Field Researchers, CRS 2019

S.No.	Name
1	Alina Rai
2	Aman Shrestha
3	Ambika Khapangi
4	Amrit Pandit
5	Anju Karna
6	Bed Bdr Gurung
7	Bhagrathi Joshi
8	Bharat Bahadur Madai
9	Bhawona Khanal
10	Bhim Kumari Limbu
11	Bishnu Devi Chemjong
12	Bishnu Gurung
13	Delina Maharjan
14	Devi Gurung
15	Dilmaya Dhakal
16	Durlav Raimajhi
17	Ganga Rai
18	Ganga Thapa
19	Gyanendra Bdr Bist
20	Harka bahadur Safari
21	Hemraj Bhandari
22	Indira Bhandari
23	Lal Bahadur Rawal
24	Maheswor Dhungana
25	Nar Kumari Budhathoki
26	Pooja Chaudhary

S.No.	Name
27	Prabhat Pokhrel
28	Pramila Chaudhary
29	Prayag Sigh Air
30	Pukar Gurung
31	Rakesh Chaudhary
32	Ratna Maya Chemjong
33	Ritu Rupathoki
34	Samita Lama
35	Sanam Chapagain
36	Sangam Yadav
37	Sangita Ranamagar
38	Sanjit Baidhya
39	Sarita Gurung
40	Seteman Tamang
41	Shanti Jabegu
42	Shyam Prasad Kafle
43	Subash Koirala
44	Sujata Ghimire
45	Sumitra Basel
46	Sumitra Rimal
47	Suresh Yadav
48	Surya Pokharel
49	Uday Thing
50	Urbasi Rai
51	Usha Adhikari
52	Yagya Murti Pandey

Research Assistants

Community Resilience Survey, 2019

SN	Name
1	Basanta Thapa
2	Ganesh Bahadur Bhujel
3	Jeena Limbu Subba
4	Nirajan Khadka
5	Santu Prasad Yadav

Community Resilience Study

Ethnographic Field Researchers

SN	Name
1	Bhawana Khanal
2	Devendra Kumar Rasaili
3	Kumar Rai
4	Rajani Maharjan
5	Srijana Thapaliya
6	Sumitra Rima
7	Surya Bahadur Tamang

ABOUT SOSIN RESEARCH

This volume represents one part of a research project on the "State of Social Inclusion in Nepal (SOSIN)," undertaken by the Central Department of Anthropology at Tribhuvan University in 2018-2019. The SOSIN research is a sequel to research on "Social Inclusion Atlas and Ethnographic Profile" that the then the Central Department of Sociology/Anthropology carried out in 2012-2014. The SOSIN research has four major thematic components and associated reports.

The first is a report on the "Nepal Social Inclusion Survey (NSIS) 2018," a national sample survey, that presents data and analysis disaggregated by sex, 11 broad social groups, and 88 distinct caste and ethnic groups. The NSIS provides data for tracking changes in a number of key indicators between 2012 and 2018. The second is a report on "Who Are Left Behind?" which presents sex, caste and ethnicity disaggregated data from the NSIS 2018 on selected Sustainable Development Goals (SDGs) indicators. This will be helpful in monitoring the SDGs across gender and social groups, in line with the spirit of "leaving no one behind." The third report is on the "State of Inclusive Governance in Nepal" that examines the current state of governance policies, practices and hindrances to inclusion. This report presents current representation of the people in bureaucracy, elected local bodies and other institutions, and analyzes disparities by gender, and caste, ethnic, religious and minority groups. The fourth report on "Community Resilience Capacity," a study on Nepal's 2015 earthquakes and its aftermath, provides empirical data on disaster effects, recovery, and resilience in the 14 worst-affected districts. It analyzes disproportionate impact, differential resilience capacity and social inclusion. The results of this study can be useful for better understanding resilience capacity, for improving on-going recovery efforts, and for strengthening disaster risk reduction and management planning. The lens of social inclusion weaves through all the four studies as a common thread.

ISBN 978-9937-0-7863-4