



# Post-Earthquake Impact and Needs Assessment

September, 2015



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The Mountain Institute

Asian Regional Office, Kathmandu, Nepal

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Cover Image: Two girls looking over their younger sister who is taking a nap under the shade of the plastic sheet hanged on a tree, Kashigaun, Gorkha (HEED Nepal and TMI)

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Last but not the least; I am thankful to TMI for providing me this opportunity and a major responsibility for the post earthquake needs assessment, which I trust will provide useful information for TMI and other organizations to support the process of "Build Back Better" in the days to come.

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## Acronyms and Abbreviations

ANM	Auxiliary Nurse Midwife
CGI	Corrugated Galvanized Iron
DEO	Department of Education
FCHV	Female Community Health Volunteers
FGDs	Focus Group Discussions
GESI	Gender Equity and Social Inclusion
GoN	Government of Nepal
HDI	Human Development Index
HEED	Health, Education, Empowerment and Development
ICS	Improved Cooking Stove
ID HHs	Internally Displaced Households
INGO	International Non-Governmental Organization
MAPs	Medicinal and Aromatic Plants
MoHA	Ministry of Home Affairs
NGO	Non-Governmental Organization
NNDSWO	Nepal National Dalit Social Welfare Organization
NTFPs	Non-Timber Forest Products
PDNA	Post Disaster Needs Assessment
PLWDs	People Living With Disabilities
RTEES	Rural Tourism and Environmental Education Society
TLC	Temporary Learning Centre
TMI	The Mountain Institute
UMN	United Mission to Nepal
VDC	Village Development Committee
WASH	Water, Sanitation and Hygiene

## EXECUTIVE SUMMARY

### Introduction

Two major earthquakes of magnitude of 7.6 and 6.8 struck Nepal on 25<sup>th</sup> April and 12<sup>th</sup> May, 2015 with devastating impacts on life and property. The northern belt of the program areas of The Mountain Institute (TMI) in - Rasuwa, Dhading and Gorkha - which were among the lowest Human Development Index districts of Nepal were also the most affected districts. These mountain areas are characterized by geographical complexities, fragile terrains, inaccessibility, marginality, poverty and limited services and economic opportunities. Mountain people are therefore most vulnerable. As a result, remoteness, logistical difficulties have led to the disproportionate distribution of relief and probably recovery efforts as well. The earthquake has highlighted the inequality existent in Nepalese society in terms of geography, income and gender (NPC 2015).

The Mountain Institute had been supporting farmers to strengthen and diversify their livelihoods through the cultivation and commercialization of Medicinal and Aromatic Plants (MAPs) in these three districts since 2009. Thus, it was imperative to respond to the impacts of the earthquake through relief and recovery assistance. TMI used a two-phase approach; Phase 1 focused on the relief activities and post-earthquake needs assessment of the communities'. Phase 2 will focus on supporting the rebuilding process based on the recovery needs prioritized by the communities in the Phase 1. Phase 1 of the project covers four Village Development Committees (VDCs) of Rasuwa – Gatlang, Goljung, Haku and Danda Gaun, four VDCs of Dhading – Tipling, Sertung, Jharlang and Lapa and two VDCs of Gorkha – Manbu and Kashigaon. **These 10 VDCs were selected from amongst TMI's current working areas in 17 VDCs in the three districts on the basis of their connectivity, inaccessibility, marginality and TMI's available resources.** Avoiding duplication of efforts and fulfilling the disproportionate allocation of relief support were key criteria in selecting these 10 VDCs.



Figure 1: Map showing TMI's current working VDCs in Rasuwa, Dhading and Gorkha and areas identified for relief and rebuilding support

## Needs Assessment Methodology

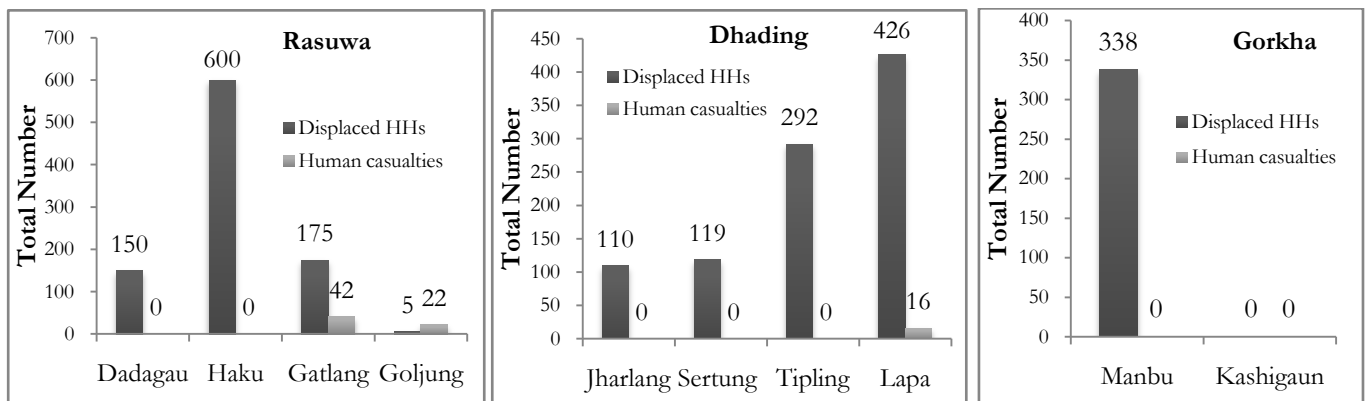
The key objective of the post-earthquake needs assessment was to identify the immediate to long term needs of the communities. This was based on the priorities identified through an integrated approach to sectoral assessment to get a comprehensive picture of the impact of the earthquake and the requirements of recovery.

Rural Tourism and Environmental Education Society (RTEES) working in Rasuwa and Health, Education, Empowerment and Development (HEED) working in Dhading and Gorkha districts are TMI's local Non-Governmental Organization (NGO) Partners. Orientation on the process and content of needs assessment was provided to the local NGO staffs who were responsible to collect field level needs assessment data. Participatory focus group discussions and community consultations were carried in the presence of male and female representatives of the affected community, VDC Secretary, Ward Citizen Forum Members and Development Workers, as well as direct observations by the assessment team. A field observation trip was also organized by TMI staff with the primary objective to get an overview of and exposure to the post-earthquake situation (collection of case studies) and status of TMI's ongoing sustainable livelihood programs. Data analysis was conducted following a sectoral content analysis approach guided by severity of the issues and frequency of the needs of the communities.

The "Needs Assessment" first takes into account the cumulative damage and losses due to earthquake or by earthquake induced landslides in each VDC. Then, impacts on seven sectors - (i) water, sanitation and hygiene (WASH), (ii) shelter, (iii) agriculture and livelihoods, (iv) education, (v) health, (vi) infrastructure, and (vii) protection were identified under four thematic areas which is described in the section below. Recovery needs prioritized and recommended by the affected communities' on different sectors have been determined for each VDC in the respective districts. People's hospitality and participation even at such a difficult time was the greatest strength and challenge of this needs assessment.

## Summary of the Findings

The estimated percentage of population affected in the area where the assessment was carries out could be estimated to be **100%** because almost all of them were rendered homeless, their stored grains buried in rubble, while others lost their agricultural lands as a result of landslides and earth fissures which affected their livelihood either directly or indirectly as shown in Figure 1.



**Figure 1: Internally Displaced Households ( ID HHs) and human casualties due to earthquake induced landslides in selected VDCs of Rasuwa, Dhading and Gorkha, 2015**

## Social Sector - WASH, Education, Health and Shelter

Most affected was the social sector (58%), of which 86% was related to housing (NPC 2015). Almost all the houses that were constructed using weak materials such as stone, mud, adobe, bamboo etc. and non-engineered construction practices were uninhabitable. People were forced to live in makeshift shelters in spaces presumed to be safe from landslides. Temporary shelters in mountain areas cannot stand up to extreme heavy rains and storms and were found to be unsuitable for long term conditions giving no population feeling of insecurity from cold, wild animals, storms etc.

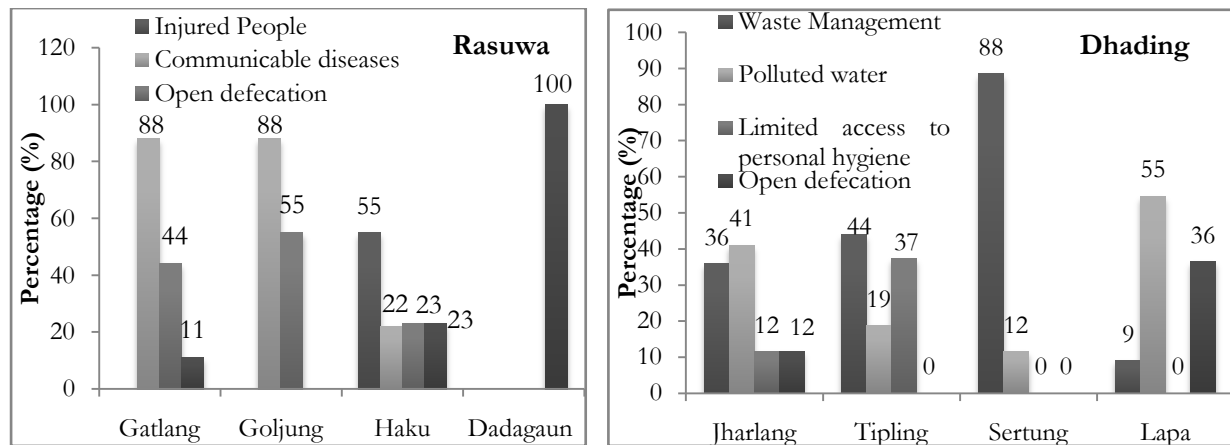


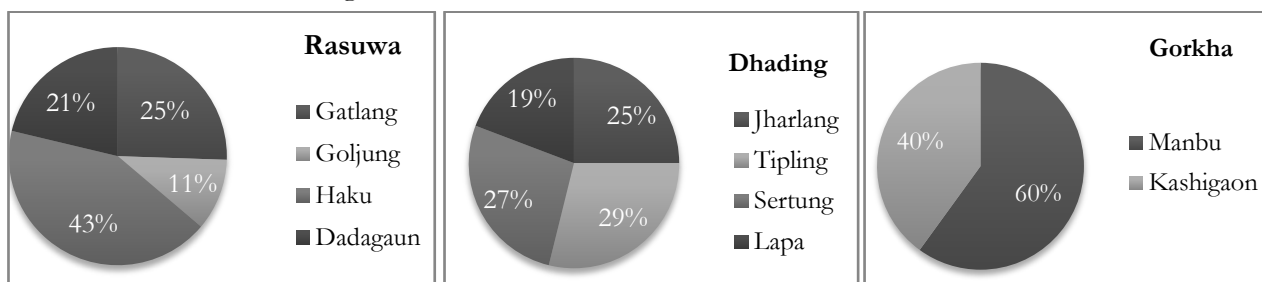
Figure 2: Post-earthquake health concerns of the communities in selected VDCs in Rasuwa and Dhading, 2015

Water sources in all VDCs of three districts have either dried up or have been polluted; the walls surrounding water reservoirs and pipelines have been damaged; and there has been a decrease in water level. Open defecation was also found being practiced in most of the VDCs of three districts. **Inadequate water supply in addition to poor sanitation has had serious concerns for the health of the community.** The reasons why schools were not functioning were because of the damage in school buildings and educational materials. Temporary Learning Centres were set up in almost all schools by government and non-government organizations. Structurally weak health services centres and human resources, availability of medicines were all affected in all VDCs of three districts. Inadequate WASH, medical facilities, open defecation and polluted water and inadequate waste management were found to be conducive towards the spread of communicable diseases.

## Economic Sector - Agriculture, Forest Resources, MAPs and Tourism

Communities living in the northern belts of these districts always have had limited access to socio-economic resources. They depend on agriculture, forest and tourism for their subsistence. Available food stock was enough to last 2- 3 months in most of the VDCs in three districts. In the case of the agriculture sector - seeds, livestock, and agricultural tools, basis for people's livelihood were found to be destroyed as shown in Figure 2. With most of the markets closed, even people with money were also unable to buy what they needed. Nursing mothers and pregnant women, children, elderly and People Living with Disabilities (PLWDs) lacked nutritious food as they had to rely on stored crops salvaged from destroyed homes and whatever they could receive as relief support. Forest resources were found to have been destroyed by the earthquake triggered landslides and earth fissures due to which people had to spend more time

and walk longer distances in search of fodder and wood, has added to the difficulties in pulling their livelihood assets together.



**Figure 2: Severity of damage on crops in selected VDCs in Rasuwa, Dhading and Gorkha, 2015**

MAPs were found to have been affected with damages such as premature drying up of plants, damage in nurseries of MAPs, scarcity of water, manmade makeshift settlements and the MAPs fields being swept away by landslides. In the tourism sector, popular trekking routes to *Ganesh Himal* and *The Tamang Heritage Trail* and tourism related services such as hotels, home stays in Rasuwa, Dhading and Gorkha were damaged. Luckily, there were no reported casualties of tourists at the time of the earthquake.

### Physical Sector – Infrastructure

Destruction of infrastructures such as community buildings, roads, schools, bridges, water sources, electricity, communications, cultural heritages, foot trails etc. resulted in the isolation of these remote VDCs along with the disruption of schools, health services, cultural and ritual activities, lack of water supplies and many more. Most of the infrastructures weakened by the major earthquake were further destroyed by the powerful aftershocks. Hardships of life in these mountain areas were further amplified due to the infrastructural damages caused by earthquake and subsequent landslides.

### Cross-cutting sectors – Social Protection and Gender Equity and Social Inclusion (GESI)

Many communities had to relocate to internally displaced camps near district headquarters. Violence was also reported among the communities of selected VDCs in those displaced camps in all three districts. There were reports of children being separated from family members during the displacement and loss of legal documents in the rubble, which could prevent them from receiving rehabilitation assistance in the near future. Even though the large part of the fragile mountain landscapes have been prone to landslides and mass flow due to the weakened slopes, some communities of Haku were still living in highly vulnerable areas irrespective of the government landslide warnings. Rehabilitation of displaced communities and those living in vulnerable areas to safe places is critical so as to avoid further human casualties.

Women reported that they were not only deprived of nutritious food, they also did not receive adequate food as compared to men in few VDCs. However, there was no discrimination during relief assistance. Women headed households expressed the need to shoulder additional burden of rebuilding their houses, as well as assembling basic services and participating them in off-farm activities. Women’s involvement in the tourism sector was also found to be about 25% in average in selected VDCs of three districts.

Disadvantaged and vulnerable groups such as *Dalits*, PLWDs, and single men/women have had to suffer the most from the impact of the earthquake. In the case of the WASH sector, most of

the PWLDs did not have access to safe drinking water and PLWDs friendly temporary shelter as shown in Figure 3.

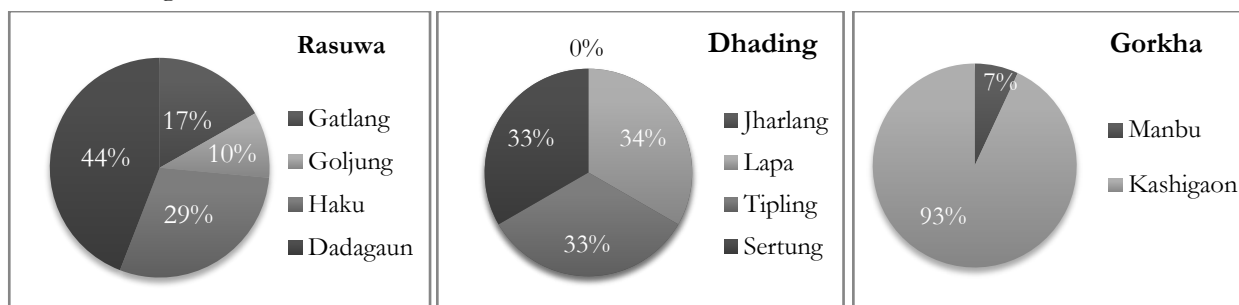


Figure 3: PLWDs friendly temporary shelter in selected VDCs in Rasuwa, Dhading and Gorkha VDCs, 2015

Living in communal temporary shelters was found to be a common challenge for all, especially for women and children because of the various risks involved with rain, cold, darkness and wild animals.

### **Recovery Needs**

The immediate to long-term recovery needs prioritized by the communities' were identified which include broad visions such as restoration of livelihoods, infrastructures, socio-economic services, disaster risk reduction and resilience on different sectors are listed below.

#### **Social Sector**

Reconstruction of houses, schools, toilets with structural resilience and clustering of displaced and dispersed communities to safe locations, training and awareness programs on WASH and first aid treatment with kits, drinking water purification techniques/equipments, reconstruction and maintenance of damaged water resources, regular health check-up for pregnant women and nursing mothers, reconstruction of school buildings, provision of educational materials, provision of dustbins for waste collection

#### **Economic Sector**

Trainings on cultivation and provision of cash crop varieties, new and scientific way of farming and livestock rearing for increasing their production, vocational and skill training to youths, quality seeds and improved livestock, prevention and control of newly emerged pests through research, cultivation trainings on MAPs, promotion of tourism

**Physical Sector** – Reconstruction of earthquake resistant infrastructures, maintenance of blocked roads and foot trails, support for earthquake resistant building materials and skilled human resource, technical consultant to assess and identify places vulnerable to landslides and identify solutions to control further disasters, leadership skill development training programs for rebuilding process

**Cross-cutting Sector** - Nutritious food for nursing and pregnant women, children and senior citizens, awareness and educational programs for women to increase and strengthen their capacity to fight against social violence, care and income generating activities that are friendly with PLWDs, livelihood diversification trainings for disadvantaged social groups

**In conclusion**, livelihood recovery was the major post-earthquake need of the affected communities. Coordination of different stakeholders' such as the earthquake survivors, communities, government and non-government bodies' must be mandatory in planning the rebuilding strategy, decision making, policy formation etc. i.e. **recovery and reconstruction phase must be participatory and inclusive to address and respond to the gaps.** Information dissemination to the community stands equally important. The **rebuilding process could also be taken as an opportunity to build back the country in a way for overall sectoral development in a more sustainable and resilient manner.** Non-timber forest products (NTFPs) cultivation trainings could be a promising approach in these remote mountainous areas based on ecological and climate suitability. Financial and technical support for the microenterprise. **Employment for youth and those that are suitable to PLWDs is also of importance** as it would make these groups independent economically empowered and **directly benefitted from the productive work.** This would also help to stem to flow of labour migration of youth in the absence of viable alternatives in their home districts especially now that the earthquake had devastating impacts.

### **"Quick Release Activities - New Hope": A Case Study**

TMI has been supporting communities in selected VDCs in all three districts through "Quick Release Activities". The main objective of this support was to address the selected urgent needs prioritized by the communities themselves. TMI provided support for activities such as reconstruction of drinking water, maintenance of foot trails, and reconstruction of partially damaged community hall, etc.

Godam- 9, of Gatlang VDC, Rasuwa was facing severe water scarcity after the devastating earthquake, where 20 households of *Dalit* families were residing. The only source of drinking water dried up and the community was struggling for access to water. Women had to travel a long distance to fetch the water, which was increasing their workload in addition to the pressure of other household chores under difficult conditions. About 700 metres of pipes and a few water tanks was provided. They buried the water storage tank and connected the water pipelines and brought water to the communities. Now they have enough water to drink and for WASH.



Mr. Man Bahadur B.K was delighted with this support as it was connected with his livelihood. He is now able to construct a nursery for MAPs near his home. TMI supported MAPs cultivation project helped him to construct a nursery within a 5-minute walk from his home where he planted MAPs in 2 ropanis of land. He has planned to extend nursery next year. He is hoping that he will be able to recover his loss and begin a new normal life with his family from MAPs business.

## 1. BACKGROUND

The violent and destructive earthquake of magnitude 7.6 with epicentre in Barpak, Gorkha that struck Nepal on 25<sup>th</sup> April, 2015 and the series of aftershocks, including one with a magnitude of 6.8 on 12<sup>th</sup> May, 2015 have had devastating and catastrophic impacts across the country, leaving approximately 9000 human casualties, over 22,000 injuries, and nearly 900,000 government and private buildings completely and partially damaged (NPC 2015). Thirty one of the total, 75 districts were affected, out of which 14 were declared as “worst affected”, namely-Gorkha, Dhading, Rasuwa, Nuwakot, Sindhupalchowk, Kavrepalanchowk, Ramechhap, Sindhuli, Dolkha, Kathmandu, Lalitpur, Bhaktapur, Makwanpur and Okhaldhunga. The Post Disaster Needs Assessment (PDNA), a comprehensive assessment of the damage, loss and recovery needs carried out by the Government of Nepal (GoN), identified the social sector as the sector which experienced the largest share (58%) of the impact of the disaster. In addition, serious concerns were identified under the housing and human settlement sector (NPC 2015). Furthermore, with the onset of monsoon, the threats of landslides caused by ruptured and weakened slopes has been a real concern for all as this could not only potentially accelerate human casualties and infrastructure damages but also obstruct recovery and rebuilding efforts.

This report focuses on the situation in the working areas of The Mountain Institute (TMI), the relief support provided, and the results of a rapid needs assessment that was conducted in selected areas to help respond more strategically to the re-building of those communities.

### 1.1 The Impact of the Earthquake in TMI Working Areas

Of the 14 worst affected districts, the northern most remote belts of Rasuwa, Dhading and Gorkha have been TMI’s working areas since 2009, where TMI had been supporting farmers to strengthen and diversify their livelihoods through the cultivation and commercialization of Medicinal and Aromatic Plants (MAPs). The impact of the earthquake in three districts – Rasuwa, Dhading and Gorkha – is shown in Table 1 below.

**Table 1: Impact of the Earthquake on TMI's Working Districts**

Districts	Deaths			Injuries	Private Houses Fully Damaged	Private Houses Partially Damaged
	Total	Male	Female			
<b>Rasuwa</b>	660	312 (47.3%)	344 (52.1%)	771	11,368	267
<b>Dhading</b>	678	292 (43.1%)	386 (56.9%)	1,218	81,313	3,092
<b>Gorkha</b>	449	215 (47.9%)	234 (52.1%)	952	59,527	13,428

Source: MoHA, July, 2015 (<http://drportal.gov.np/>)

Approximately 20% of the total casualties due to the earthquake, nationally, and 13% of the total injuries occurred in these districts. Similarly, the number of women casualties (55%) was higher as compared to men (45%), which correspond to the gender disparities experienced in most disasters worldwide.

Mountain areas are characterized by geographical complexities, fragile terrains, inaccessibility, marginality, inequality, poverty and limited services and economic opportunities. Mountain people are therefore most vulnerable. As a result, remoteness, rugged topography, logistical difficulties have led to the disproportionate distribution of relief and probably recovery efforts as well. Thus, the earthquake has highlighted the inequality existent in Nepalese society in terms of geography, income and gender (NPC 2015). Thousands of families have become homeless as a result of the extent of the damage that has taken place in almost every available infrastructure which has led to food insecurity and made their livelihoods more challenging than it already was.

The GoN, along with a huge network of Non-Governmental Organizations (NGOs), International Non-Governmental Organizations (INGOs) and volunteers (in an unprecedented number) based in the country, came together to respond to the earthquake with emergency relief and humanitarian assistance across the affected districts. As TMI had been working in remote Village Development Committees (VDCs) of some of the highly affected districts, it was committed not only to provide short term support but also to continue its long term support for the rebuilding of livelihoods of these vulnerable communities in partnership with local NGOs.

In response to the natural disaster, TMI planned for a two-phased approach: Phase 1 was planned for four months (May-August) to provide short-term relief based on the on-the-ground assessments of immediate needs for rebuilding. Phase 2 would then focus on supporting the rebuilding efforts for rehabilitating sustainable and resilient communities and livelihoods, based on the information from the assessments of Phase 1.

As part of the relief operations in Phase 1, TMI focused primarily on providing logistic support to transport relief materials collected by the local NGO partners from different sources, in addition to the procurement and distribution of relief items such as solar powered batteries, baby food, tool boxes for reconstruction, sanitary packets, warm clothes, temporary latrine sets, educational and recreational materials for school children. TMI also worked in coordination with other organizations to provide relief assistance.

Furthermore, TMI has also been supporting “Quick Release Activities” with the objective to ensure that some of the urgent priority needs of the communities are achieved in the selected 10 VDCs of the three districts (Annex 1). Details of the relief operations carried out in the three districts supported by TMI and its local NGO partners in coordination with other agencies are shown in Tables 2 and 3 below. The distribution of the relief activities was quite challenging due to the remoteness of the settlements, changes in weather conditions and unstable landscapes. However, TMI was able to provide the marginal mountain communities some targeted assistance to help them slowly recover from the effects of the disaster. The emergency relief operations supported by TMI have approximately reached 5,000 households in the selected 10 VDCs in Rasuwa, Dhading and Gorkha districts.

**Table 2: TMI's relief operations in Rasuwa, 2015**

S.N.	Date	Relief	VDCs Reached
1.	11 <sup>th</sup> May, 2015	Logistic support (Truck 1)	Gatlang and Goljung
2.	12 <sup>th</sup> May, 2015	Logistic support (Trucks 2 & 3)	Gatlang and Goljung
3.	3 <sup>rd</sup> June, 2015	Logistic support (Truck 4), baby foods, tool boxes, solar powered batteries, clothes, latrine sets, educational and recreational materials	Gatlang, Goljung, Haku and Dadagaun
4.	12 <sup>th</sup> June, 2015	Logistic support (Truck 5), educational and recreational materials	Dadagaun and Thulogaun

**Table 3: TMI's relief activities in Dhading and Gorkha, 2015**

S.N.	Date	Relief	VDCs reached
1.	24 <sup>th</sup> May, 2015	Logistic support (Truck 1)	Tipling ward no. 8 ( <b>Dhading</b> )
2.	31 <sup>st</sup> May, 2015	Logistic support (Trucks 2 & 3)	Lapa, ward no. 1,2,3,6 and 7 ( <b>Dhading</b> )
3.	8 <sup>th</sup> June, 2015	Logistic support (Truck 4), sanitary packets, baby food, tool boxes, solar powered batteries, clothes, latrine sets, educational and recreational materials	Sertung, Jharlang, Tipling and Lapa ( <b>Dhading</b> )  Manbu and Kashigaun ( <b>Gorkha</b> )

## 2. POST-EARTHQUAKE NEEDS ASSESSMENT

As a part of Phase 1, TMI, in addition to short-term relief operations, also conducted, a “Post Earthquake Needs Assessment” in 10 VDCs of the three districts, in order to plan and design the rebuilding phase.

**Needs Assessment** is a systematic approach to gather information from various sources that will help in the identification of the needs of the victims and the resources that are available to them. Needs assessment sets priorities and criteria to take decisions so as to determine the best ways to allocate available money, people, facilities, and other resources (Ruth & Altschuld, 1995).

The key objective of the Post-Earthquake Needs Assessment was to assess the physical and socio-economic impact of the earthquake as well as to identify the immediate to long term response needs of the communities. The needs were based on the priorities identified through an integrated approach to sectoral assessment to get a comprehensive picture of the impacts of the earthquake and the requirements of recovery.

This step taken by TMI and other organizations is expected to play a key role in planning a rebuilding/rehabilitation strategy based on the prioritization of the needs to ensure that resilient and sustainable livelihoods are secured.

## 2.1 Methodology of the Needs Assessment

### 2.1.1 Area Selection

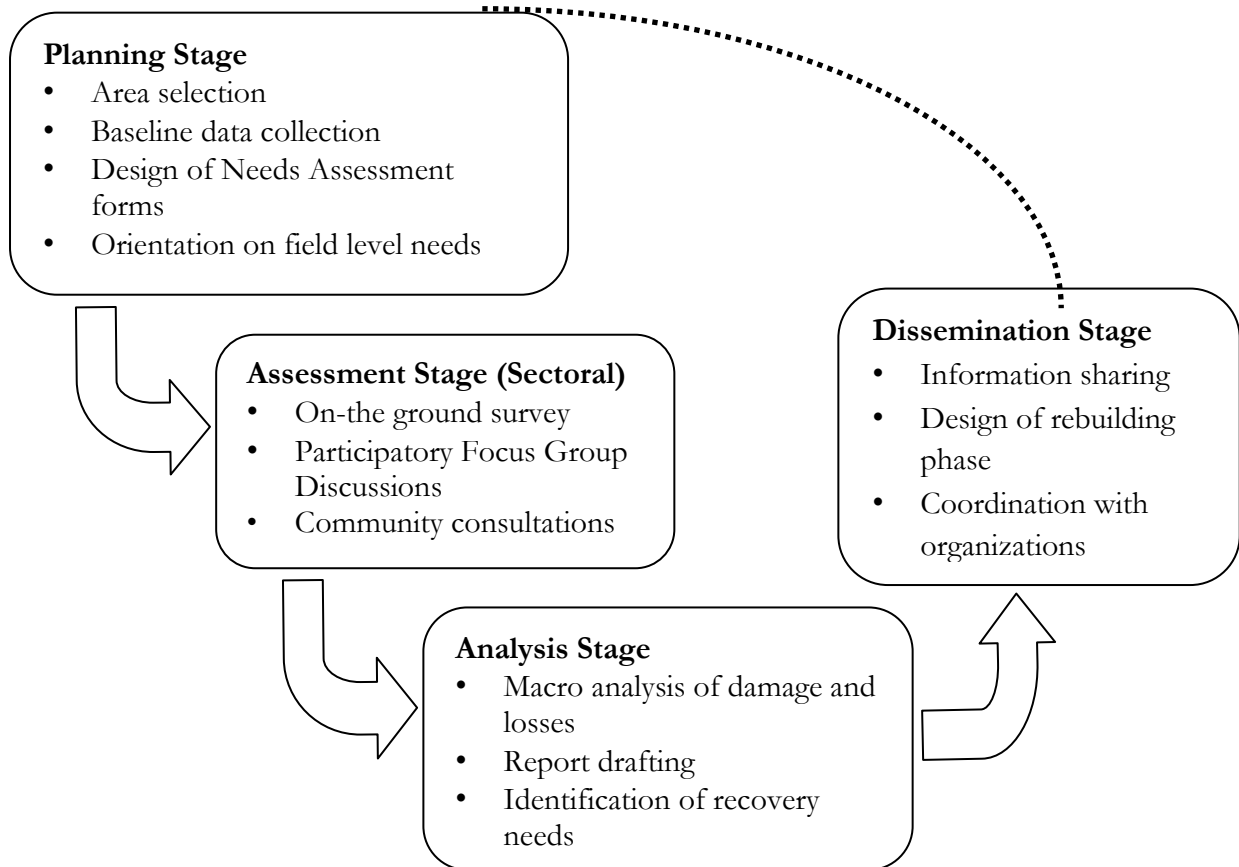
Two weeks after the major earthquake, TMI invited its staffs and local NGO implementing partners to a meeting on 3<sup>rd</sup> May, 2015, with an agenda to select VDCs and identify emergency response to the impact of the earthquake. Phase 1 of the project covers 4 VDCs of Rasuwa – Gatlang, Goljung, Haku and Danda Gaun, 4 VDCs of Dhading – Tipling, Sertung, Jharlang and Lapa and 2 VDCs of Gorkha – Manbu and Kashigaon. These 10 VDCs were selected from amongst TMI's current working areas in 17 VDCs in the three districts.



**Figure 4: Map showing TMI's current working VDCs in Rasuwa, Dhading and Gorkha and areas identified for relief and rebuilding support**

Most of the relief activities across the country were concentrated in villages that are more accessible, which resulted in relief assistance being replicated. Thus, it was necessary to select VDCs for earthquake response activities and the selection of the 10 VDCs was made on the basis of their connectivity, inaccessibility, marginality and TMI's available resources. Avoiding duplication of efforts and addressing the disproportionate allocation of relief support were key criteria in selecting only 10 out of the 17 VDCs that were in TMI's working areas.

According to the PDNA report, Gorkha, Rasuwa and Dhading are amongst the six districts with the lowest HDI and thus, the poorest and the most vulnerable to the impact of the disaster (NPC 2015). Due to high vulnerability, these districts have had experienced the greater proportion of the impacts of the earthquake. Figure 1 represents the working areas of TMI as well as TMI's focus areas in the respective districts for Phase 1. Schematic representation of the detailed methodology for the needs assessment is shown in the figure below:



**Figure 5: Schematic representation of the methodology of Needs Assessment**

### 2.1.2 Design of Needs Assessment Form

As the relief works continued to reach the targeted VDCs, needs assessment forms was developed through an intensive exercise with the staff of the local partner organizations'. Needs assessment forms were primarily adapted from the Rapid Joint Needs Assessment format which was originally developed by An Indian Humanitarian Collective Action. While some relevant changes were made according to geography and socio-economic conditions of the VDCs, some modifications were made at the ward level to simplify the screening of the VDCs for Phase 2.

The needs assessment first takes into account the human casualties and the damages observed in the following seven sectors – (i) water, sanitation and hygiene (WASH), (ii) shelter, (iii) food, nutrition and livelihoods, (iv) education, (v) health, (vi) infrastructure, and (vii) protection which then builds on the post-earthquake recovery needs focusing on more vulnerable and

disadvantaged populations such as *Dalits*<sup>1</sup>, PLWDs (People Living With Disability), children, elderly, women, disabled and single women/men.

### **2.1.3 Orientation on field level Needs Assessment**

Rural Tourism and Environmental Education Society (RTEES) in Rasuwa and Health, Education, Empowerment and Development (HEED) in Dhading and Gorkha are TMI's local NGO partner organizations in the respective districts. In each of the districts, local NGO partners hired Social Mobilizers as temporary staff to collect field level needs assessment data. Social Mobilizers and other staffs of local NGO partners were given orientation on the process and content of needs assessment.

### **2.1.4 Participatory Focus Group Discussions and Community Consultations**

Data was collected through participatory focus group discussions with women's groups such as *Aama Samuha* and *Mabila Samuha* so as to address the impacts of the earthquake on women. Women have limited assets, carry greater burden of domestic work, lack land ownership, and are always at risks of sexual and gender-based violence and trafficking, yet they play a key role in managing their households and communities. Community consultations were also carried out in the presence of male/female representatives of the affected community, VDC Secretary, Ward Citizen Forum Members and Development Workers, as well as through direct observations by the assessment team.

### **2.1.5 Field Observation**

A field trip to the selected VDCs was organized by TMI staffs and local partner staffs with the primary objective to get an overview of and exposure to the post-earthquake situation (collection of case studies) and TMI's ongoing sustainable livelihood programs. Furthermore, field level orientation was also provided to the staff of local partners. The data collection process was first initiated by TMI staffs and then handed over to the Social Mobilizers.

### **2.1.6 Data Analysis and Report Preparation**

Quantitative data on the damage caused by earthquake were reviewed at the district level to ensure uniformity and compliance with the authentic government data and then submitted to TMI Program Officers for data entry and further analysis. Data analysis was conducted following a sectoral content analysis approach guided by severity of the issues and frequency of the needs of the communities.

Different situational reports from governmental and non-governmental organizations were also reviewed during the preparation of this report. While documenting and analyzing the data, information regarding the long-term support planned by other agencies and the gaps that TMI could address for recovery were simultaneously reviewed.

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<sup>1</sup> *Dalits* are a historically state victimized disadvantaged community who have been compelled to lag at the bottom of the social structure and excluded from national development mainstream due to the caste system and extreme Hinduism for centuries.

## 2.2 Strengths and challenges of Needs Assessment

Despite the widespread physical, social and economic destruction, that left tens of thousands of people homeless, their livelihood destroyed and their resilience affected, the fact that Nepal has been able to recover from such disasters in the past, reveals that human can survive and sustain no matter what they lose. Some of the strengths and limitations of the needs assessment are listed below:

### Strengths:

1. It was the hospitality and support of the communities' that ensured that the needs assessment was successful even at such a difficult time.
2. People with low literacy were also engaged during the assessment. The Social Mobilizers and staff of local partners, and locals from the working areas facilitated to ensure that the language and understanding barriers were overcome.
3. The adaptation of the Rapid Joint Needs Assessment format originally developed by An Indian Humanitarian Collective Action saved time and helped identify gaps to be addressed.
4. In addition, the needs assessment also incorporated the views, comments and suggestions of the communities regarding the earthquake and the ways to mitigate the impacts and rebuild their livelihood.

### Challenges:

1. It was not easy to collect representatives from different sectors as mentioned above because they were still busy collecting relief materials.
2. The assessment process was initially difficult to begin as the communities were facing challenges in managing resources. As a result, community members could have been unwilling to participate and could have not disclosed if they had received relief from other organizations.
3. The limited time during the assessment could have been a tailor in the community not being able to express their actual needs in detail.

## 2.3 Presentation of the findings

The findings of the needs assessment of each district has been divided under three major headings – Damage and Losses, Sectoral Assessment and Recovery Needs.

### 2.3.1 Damage and Losses

The cumulative damage and losses constitute the total human casualties, completely and partially damaged houses and internally displaced households (ID HHs) due to earthquake or by earthquake induced landslides in each VDC.

### 2.3.2 Sectoral Assessments

For impact assessment in different sectors, four major sectors – social, economic, physical and cross-cutting sectors have been identified and covers following thematic areas:

- (i) **Social Sector:** Water, Sanitation and Hygiene (WASH), Education, Health and Shelter

The sector that was mostly affected was the social sector (58%), of which 86% was related to housing (NPC 2015). Education emerged as the second highest priority for students in the 14

most affected districts. Rural and mountain communities in these VDCs have always been deprived of adequate health facilities. However, the damage to existing health posts and sub-health posts and the unavailability of Auxiliary Nurse Midwife (ANM) and Female Community Health Volunteers (FCHV) have had an effect on the health conditions of the community which was further intensified by the lack of medicines and access to these remote VDCs. Communities have been deprived of adequate water, sanitation and hygiene, medicines, medical facilities, waste management and safe drinking water and thus are susceptible to a number of communicable diseases.

**(ii) Economic Sector:** Food, Nutrition and Livelihoods, Agriculture, Forest Resources, MAPs and Tourism.

Almost all of the 14 districts mostly affected by the earthquake (with the exception of Kathmandu Valley) are in rural and remote areas (NPC 2015). As a result, communities living in the northern belts of these districts have limited access to socio-economic resources and depend heavily on agriculture for their subsistence. Earthquake and the subsequent landslides have damaged their limited livelihood sources mainly – agriculture, livestock farming, tourism etc. Similarly, the damage of stockpile of stored grains in their houses would possibly increase food insecurity in these areas. The status of forest resources, the major source of fruits, vegetables, medicines, wood and fodder for the communities, were affected by the earthquake triggered landslides and earth fissures.

Cultivation of MAPs and tourism had been the other major livelihood activities. MAPs cultivation initiated by TMI to support sustainable livelihood of the communities, were also damaged to some extent.

**(iii) Physical Sector:** Infrastructure

The physical sector holds the larger fraction of disaster effects i.e. 76 % of the total earthquake effects and infrastructure shared 10 % of the total effects on physical sector (NPC 2015). These infrastructures includes electricity, communications, community buildings, roads, bridges, cultural monuments, water sources, foot trails, gabion walls, monasteries, *Mane/Chorten*, church, water sources, *Dalit Aaren* (Blacksmith's workshops) etc.

Regardless of the geographical complexities in these 4 VDCs, destruction of infrastructures coupled with poor weather, hampered the relief activities and further marginalized the communities for the collection of resources for their livelihood and access to socio-economic and health services. Culture has been an important part of the community's existence in these mountain communities. Their age old culture and traditions is what defines them and highlights the need for their conservation.

**(iv) Cross-cutting Sectors:** Social Protection and Gender Equality and Social Inclusion

Social protection involves actions that aim to reduce people's vulnerability and improve their wellbeing. This has been increasingly gaining attention in the public policy environment in Nepal over the last two decades. Integration of social protection into a broader post-conflict development and reconstruction agenda by GoN had been outstanding (Koehler 2011). In the post-earthquake period, large number of people has been displaced to temporary shelters and a large number of households have also been internally displaced to other VDCs and districts as a

result of the earthquake. Consequently this has raised concerns relating to social protection and the possible increase in sexual abuse, rape, domestic violence and other harmful evils, risks such as sexual abuse, rape and harmful traditional practices were found prevalent in the communities living in temporary shelters as well as in displaced camps such as people consuming alcohol might result in domestic violence to reduce mental tension caused by the trauma and pressure to rebuild their lives. As the police were busy in relief operations during the initial days, there was an increase in the breakdown of law and order.

Incidents of violence between displaced communities, broken families, unaccompanied children, and loss of legal documents could be issues of social protection. Even though, large parts of the fragile mountain landscapes are prone to landslides and mass movement due to weakened slopes, some communities continue living in these vulnerable areas ignoring warnings issued by the government.

GESI had long been entrenched in the political, economic, and social fabric of Nepal such that socially constructed and historically disadvantaged groups have been discriminated based on their gender, caste, ethnicity or religion. In the context of Nepal, women face discriminations which are rooted not only in patriarchy and unequal power relations but also in the caste systems (ADB 2010).

Issues related to GESI needs to be inclusive in every sector. Therefore, this report attempts to address GESI issues in each of the sectors. Although women have limited land ownership and livelihood options as compared to men they not only carry an additional burden of domestic chores but are also more vulnerable to disasters and their impacts. If the number of human casualties resulting from the earthquake across Nepal or in TMI's working areas is reviewed, the number of women casualties is higher than male casualties. Similarly, *Dalits* and other marginalized groups such as PLWDs who were already deprived of access to socio-economic services will face further challenges post-earthquake as many of them do not have the means to rebuild their lives.

### **2.3.3 Recovery Needs**

Based on the findings of the post earthquake needs assessment, the fundamental needs of the communities' were identified for the recovery phase. Recovery programs include broad visions such as restoration of infrastructures, social and economic services, livelihoods, disaster risk reduction and resilience. Recovery needs prioritized and recommended by the affected communities' on different sectors have been determined for each VDCs in the respective districts.

Results from the post-earthquake needs assessment in selected 10 VDCs in Rasuwa, Dhading and Gorkha are described below in sections 3, 4 and 5 respectively<sup>2</sup>. The result comprises of the combined damage and losses from earthquake and earthquake induced landslide, impacts on various sectors and the recovery needs identified by the communities.

### 3. FINDINGS FROM RASUWA

Rasuwa, with an area of 1,544 square kilometers and a total of 18 VDCs, is one of the northern most districts of the Central Development Region. Buddhism is the major religion. Out of TMI's 8 working VDCs- Thumon, Chilime, Bridhim, Haku, Gatlang, Goljung, Dadagaun and Thulogaun in Rasuwa district, only 4 VDCs- Haku, Gatlang, Goljung and Dadagaun were selected for Phase 1, i.e. short-term relief and needs assessment based on identified gaps and priorities. The findings of the needs assessment in Rasuwa district comprise of the damage and losses followed by sectoral impacts and recovery needs as follows.

#### 3.1 Damage and Losses

In addition to the human casualties, the estimated percentage of population affected could be estimated to be **100%** because most of them were rendered homeless, their stored grains buried in rubble, while others lost their agricultural lands as a result of landslides and earth fissures which affected their livelihood either directly or indirectly. **The number of deaths and injuries were higher in Haku and Dadagaun** whereas almost all the houses were completely damaged in all 4 VDCs.

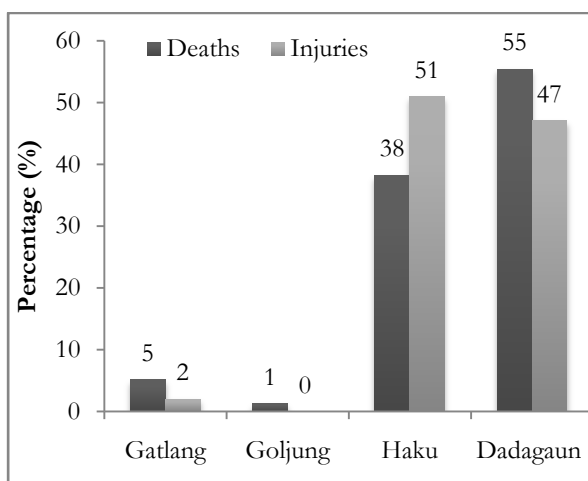


Figure 3.1: Human casualties in selected VDCs in Rasuwa, 2015

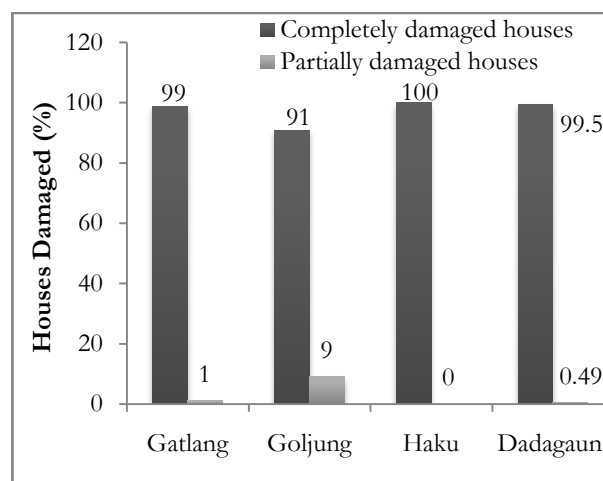


Figure 3.2: Houses damaged in selected VDCs in Rasuwa, 2015

The rugged topography of these mountain VDCs which had been further weakened and exaggerated by the earthquake and monsoon rains have triggered a number of landslides, and with their land and livelihood assets washed away, hundreds of households have been internally displaced. **The highest number of ID HHs and percentage of area affected by landslides was in Haku** as shown in Figures 3.3 and 3.4.

<sup>2</sup> Details of the data can be made available upon request to TMI

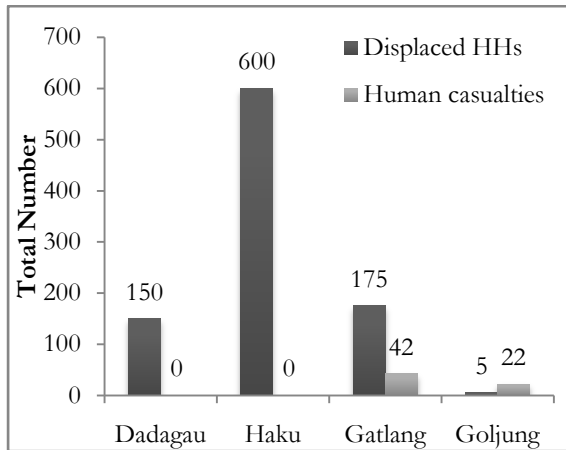


Figure 3.3: ID HHs due to landslides in selected VDCs in Rasuwa, 2015

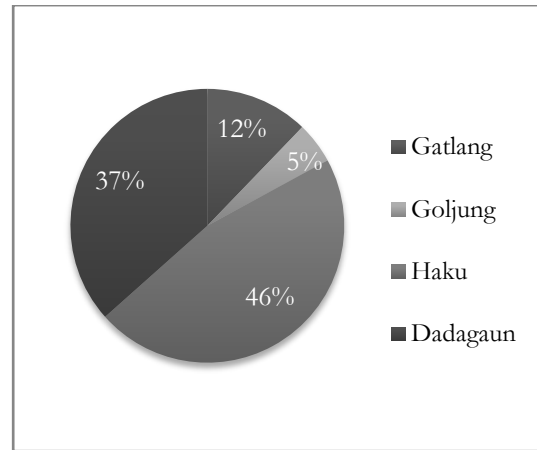


Figure 3.4: Estimated area affected by landslides in selected VDCs in Rasuwa, 2015

### 3.2 Social sector

#### A. Water, Sanitation and Hygiene

The post-earthquake scenario relating to WASH in all 4 VDCs was found to be deteriorating. Water sources in all ward of these VDCs was reported to be damaged either completely or partially, and as a result, the sources have either dried up or have been polluted and the, water level has gone down. Landslides triggered by the earthquake were also found to damage most of the water sources, walls surrounding water reservoirs and pipelines. Thus **more than half of the population has been facing water scarcity** as shown in Figure 3.5. Similarly, less than half of the population has access to temporary toilets in all 4 VDCs as shown in Figure 3.6. As a result, **open defecation was found being practiced in all 4 VDCs with the exception of a few pit hole latrines at some private and community levels** as shown in Figure 3.7, which might be due to either a general awareness among these communities or because they were offered as resources by organizations as part of their relief activities. Direct use of water from the source was found to be prevalent in Gatlang, Goljung and Haku as shown in Figure 3. 8 whereas, use of chlorine or *Pijush* was seen in Dadagaun. **Inadequate water supply in addition to poor sanitation has had serious concerns for the health of the community.**

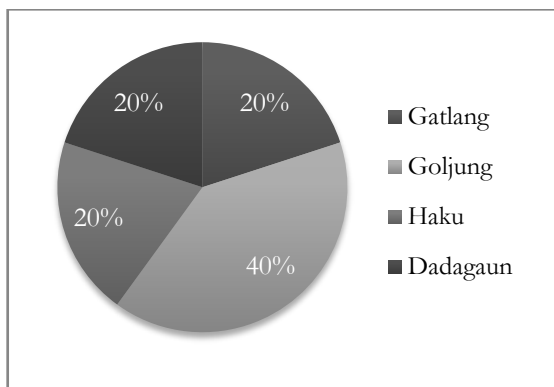


Figure 3.5: Population with access to drinking water in selected VDCs in Rasuwa, 2015

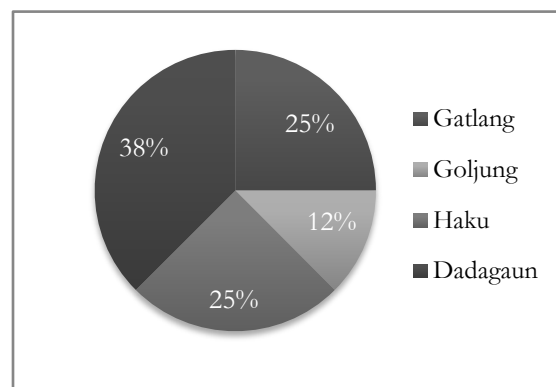


Figure 3.6: Population with access to temporary toilets in selected VDCs in Rasuwa, 2015

Almost all the women reported using clothes during their menstrual cycle and after the earthquake, they did not have adequate cloth as their belongings had been destroyed in the rubble. Few of them have been using sanitary pads which might have been offered by organizations as part of their relief activities. Therefore, maintenance of menstrual hygiene for women is at great risk which is further intensified by unavailability of water and toilets.

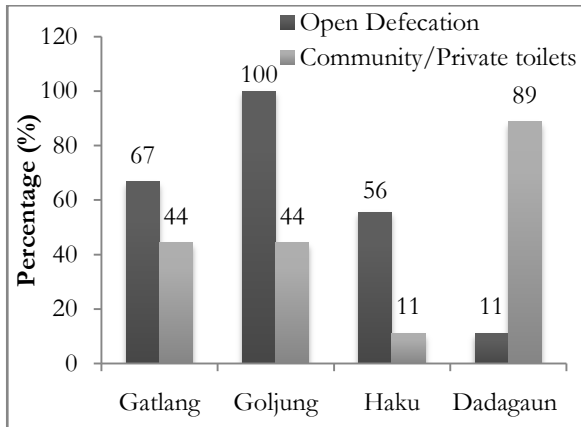


Figure 3.7: Population practicing alternative of toilets in selected VDCs in Rasuwa, 2015

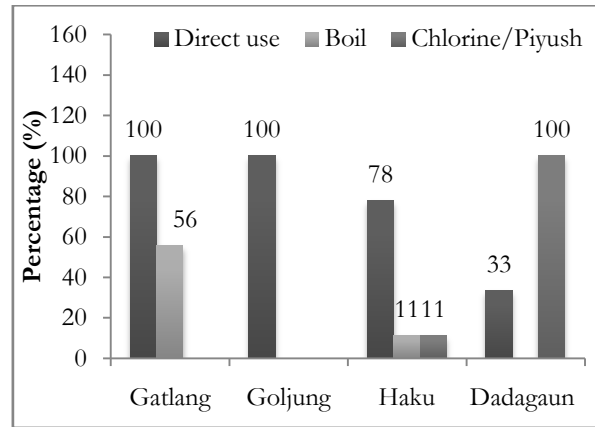


Figure 3.8: Population practicing for water purification in selected VDCs in Rasuwa, 2015

## B. Shelter

Almost all the houses (about 2,000) in the 4 VDCs were uninhabitable irrespective of whether the damage was complete or partial. This was because almost all the houses in these remote areas are constructed using weak materials such as stone, mud, adobe, bamboo etc and non-engineered construction practices. People were forced to live in temporary or transitional shelters in spaces presumed to be safe from landslides and rain and they are likely to remain in such shelters for months if not years. Household belongings were also lost in the rubble of their houses, although most of them managed to pull out some utensils, cleaning materials and blankets. As for the availability of local resources necessary to build shelters, wood, bamboo and stone were found in almost all the VDCs, with 6 –10 skilled human resources in each ward of the VDCs.

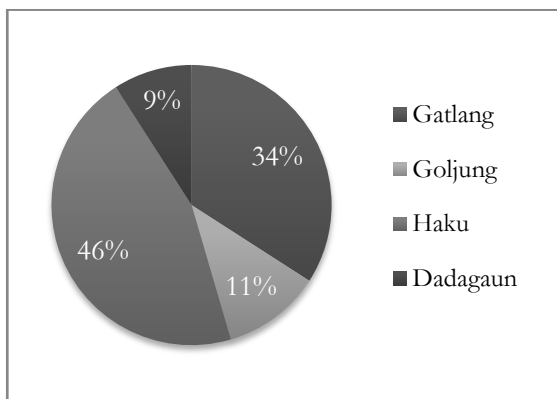


Figure 3.9: Population in immediate need of shelter in selected VDCs in Rasuwa, 2015

**Temporary shelters in mountain areas cannot stand up to extreme heavy rains and storms and were found to be unsuitable for long term conditions.** A feeling of insecurity (attack by wild animals) in temporary shelters was reported by the children. Beside the hardships they had to bear to carry out domestic chores, women felt equally insecure due to the heightened risks of sexual and gender-based violence, and human trafficking.

### C. Education

A total of 98 schools have been destroyed in Rasuwa district [As of 22<sup>nd</sup> May 2015, Department of Education (DoE)] and all 15 schools of the 4 VDCs were destroyed and are structurally unsafe. The reasons why schools were not functioning are because school buildings and educational materials of the students have been either destroyed or damaged as shown in Figure 3.10. In some cases, teachers were absent, because few might have died or have not returned to the schools. Temporary Learning Centres (TLCs) were set up in almost all schools with tarpaulins, tents, CGI (Corrugated Galvanized Iron) sheets and wood provided by government and non-government organizations.

Drinking water and toilets in schools were also found to have been affected which could create a major issue in sanitation and hygiene condition. The education sector is expected to have a slower growth because of disruptions spanning several weeks, problems in running TLCs, loss of educational materials of students, unavailability of teachers as well as increased demand for labour of students both at home and outside.

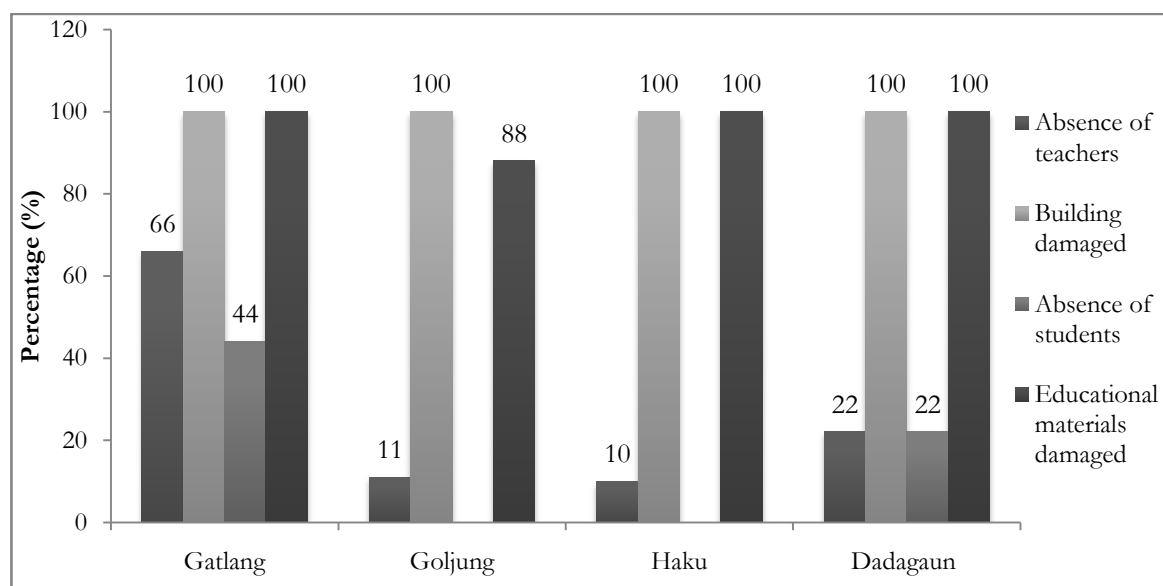


Figure 3.10: Major reasons for not functioning of schools in selected VDCs in Rasuwa, 2015

### D. Health

Health posts in all of the VDCs were damaged by the earthquake because the conventional designs of the health post buildings which were structurally weak. Furthermore, unavailability of ANMs and FCHVs combined with the lack of medicines has raised serious health concerns. **Likewise, due to the limited access to these remote VDCs, medical reliefs from organizations have also been disrupted.** Communities deprived of adequate water, sanitation and hygiene, medical facilities, waste management and safe drinking water were found to be prone to a number of communicable diseases. **Open defecation and polluted water has been a common concern for the communities in all 4 VDCs** as shown in Figure 3.11.

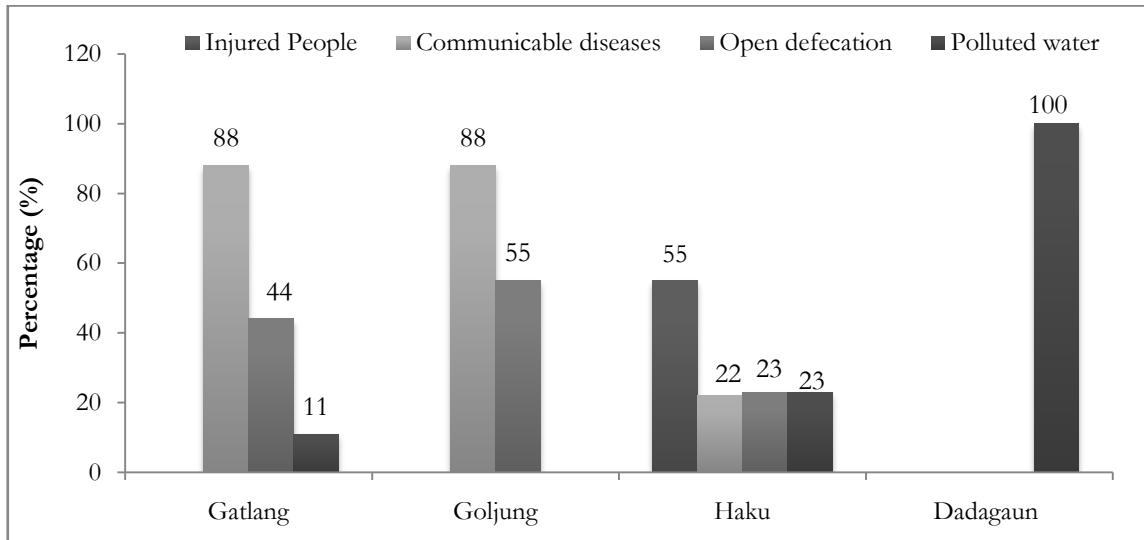


Figure 3.11: Present health concerns being faced in selected VDCs in Rasuwa, 2015

Communities were in need of counseling and support after the earthquake in all 4 VDCs; Local intellectuals, teachers and some NGOs/INGOs have been providing counseling to the children. Nursing mothers and pregnant women are among the most affected by the earthquake and its consequences and were deprived of the health facilities crucial to health, nutritious food, accessibility to sanitation and hygienic condition and safe and warm shelter.

### 3.3 Economic Sectors

#### Agriculture

Wheat, maize, potato, barley, beans, millet and pulses are the staple food crops of the communities in the 4 VDCs and the available food stock was enough to last 2- 3 months. In the case of the agriculture sector- seeds, livestock, and agricultural tools which form the basis of people's livelihood were found to have been destroyed as shown in Figure 3.12. With most of the markets closed, even people with money were also unable to buy what they needed as shown in Figure 3.13. In addition; communities in remote areas had to travel long distances upto approximately 3 hours to reach the nearest market.

**Nursing mothers and pregnant women, children, elderly and disabled people lacked nutritious food as they had to rely on the food materials salvaged from destroyed homes and whatever they could receive as relief support.** However, disabled and elderly people were found to have received food and care from the family in their temporary shelters.

#### Forest Resources

Forest resources formed the major source of fruits, vegetables, medicines, wood, fuel wood and fodder for the communities and these were found to have been destroyed by the earthquake triggered landslides and earth fissures. The fact that people had to spend more time and walk longer distances in search of fodder and wood, has added to the difficulties in pulling livelihood together. Despite the difficulties to access forest resources, people were found to be using wood, fuel wood, fodder, grass, *Kandamul* (root vegetables) from the available forest resources.

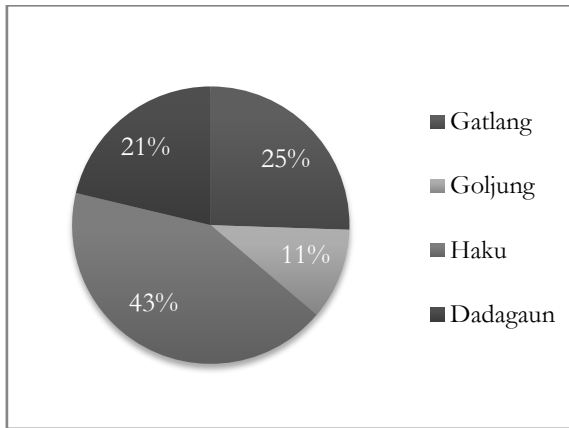


Figure 3.12: Severity of damage on crops in selected VDCs in Rasuwa, 2015

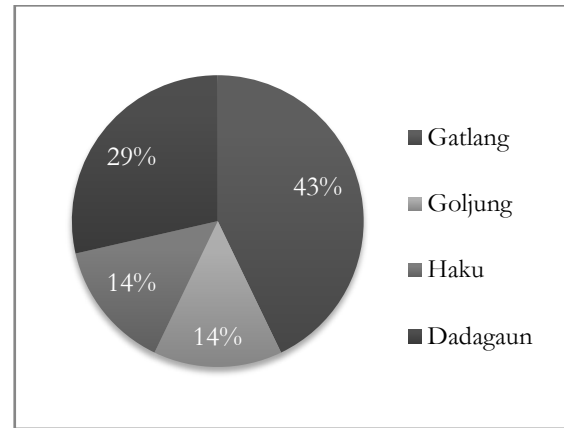


Figure 3.13: Population able to buy food from markets in selected VDCs in Rasuwa, 2015

### Medicinal and Aromatic Plants

MAPs were found to have been highly affected in Gatlang and Haku compared to the other two. Different MAPs cultivated were Chirayito, Sugandhawal, Satuwa, Lokhta, Paanch aunle and Loth salla<sup>3</sup>. **The damages reported include premature drying up of plants, damage in nurseries of MAPs, scarcity of water and the MAPs field being swept away by landslides.** Another reason for the destruction of MAPs and the unavailability of MAPs seeds for the next cultivation season was due to the man made makeshift settlements.

### Tourism

Likewise, in the **tourism sector**, a total of 15 hotels, 3 home stays and 5 lodges were reported damaged by the earthquake in only 3 VDCs- Gatlang, Goljung and Haku. The *Tamang Heritage Trail*, a popular trekking route surrounding these VDCs as well as Gatlang village, a famous tourist destination rich in age old tradition and culture has been destroyed and damaged. **Communities of Gatlang prioritized rebuilding similar traditional houses built with beautifully carved wooden plank which will have implications on the rebuilding of tourism also.** Additionally, *Parwati Kunda*, a cultural wetland, which is a major water source for Gatlang and *Chorten/Mane*, is also a cultural heritage in these areas. Luckily, there were no reported casualties of tourists at the time of the earthquake. To revive tourism in these 4 VDCs, building materials, reconstruction of damaged infrastructures and low interest government loans have been reported as the common themes voiced by the communities involved in tourism.

### 3.4 Physical Sector

#### Infrastructure

Destruction of infrastructures resulted in the isolation of these remote VDCs along with the disruption of schools, health services, cultural and ritual activities, lack of water supplies and many more. Electricity and communications were reported to have been disrupted for a long

<sup>3</sup> The scientific names of MAPs: Chirayito (*Swertia chirayita*), Sugandhawal (*Valeriana jatamansi*), Satuwa (*Paris polyphylla*), Lokhta (*Daphne bholua*), Paanch aunle (*Dactylorhiza hatagirea*) and Loth salla (*Taxus wallichiana*)

period after the first quake and most of the infrastructures weakened by the major earthquake were further destroyed by the second earthquake. Roads and foot trails which were damaged and obstructed at a number of places by landslides in these remote VDCs have been further intensified by the monsoon rain.

**Table 4: Infrastructure damage in selected VDCs in Rasuwa, 2015**

S.N.	Infrastructures	VDCs/Wards	Number
1	Police Station	Dadagaun (1); Haku (2)	2
2	Forest Office	Dadagaun (1)	1
3	Health Post	Dadagaun (2), Haku (5), Goljung (7), Gatlang (4)	4
4	VDC office	Dadagaun (3), Haku (5), Goljung (5), Gatlang (4)	4
5	Community Buildings	Dadagaun (3), Haku (1 & 4), Goljung (7), Gatlang (1)	7
6	Schools	Dadagaun (3,4,6,7,8 & 9), Haku (1,2,3,8, & 9), Goljung (1 & 7), Gatlang ( 6 & 7)	15
7	Church	Haku (1), Gatlang (6), Goljung ( 1)	4
8	Monastery	Haku (2,5 & 9), Goljung (8 & 9), Gatlang (4, 5 & 8)	8
9	Temple	Gatlang (5)	1
10	Livestock Facility Centre	Haku ( 6)	1
11	Micro Hydro	Haku (8)	1
12	Historical Palace	Goljung (1 & 2)	2
13	Roads/Foot trails	Dadagaun (22.5 km), Gatlang, Haku	-
14	Water Taps	Gatlang, Goljung, Haku, Dadagaun	228
15	Irrigation	Dadagaun	-
16	Crop storage building	Goljung (9)	1

As Buddhism is the main religion in the district and Tamang, an indigenous group is the major ethnic group of these areas, **the socio-economic activities of the people is guided by their culture associated with monasteries in which rituals related to birth, death, marriage was found to be performed.** The holy wetland is not only important culturally but also ecologically as a major water source.

### 3.5 Cross-cutting Sectors

#### Social Protection

Violence was also reported in the communities displaced from Dadagaun and Haku to Shantibazar, Bogate, Betrawati, Kalikasthan camps of Nuwakot district. There were reports of family members, especially children, being separated from each other during the displacement.

Thus, unaccompanied children were also reported in 3 VDCs (except in Goljung). People who had lost their legal documents in the rubble of their houses were also reported in each VDC which could prevent them from receiving rehabilitation assistance in the near future. Even though, the large part of the fragile mountain landscapes have been prone to landslides and mass flow due to the weakened slopes, **some of the communities of Haku are still living in vulnerable areas irrespective of the government landslide warnings.** This stands out as a crucial issue. Discrimination against people with AIDs and untouchables was not reported. However, gender discrimination was reported in some communities which will be described in the section below.

### Gender Equity and Social Inclusion

Disadvantaged and vulnerable groups such as *Dalits*, PLWDs, and single men/women have had to suffer the most from the impacts of the earthquake. **In Haku and Gatlang, women were not only deprived of nutritious food, they also did not receive adequate food as compared to men** because of the age old tradition that dictates women to serve food to other family members before they are allowed to eat. As a result, women do not get adequate food and are compelled to sleep hungry. Apart from the prevalent gender based discrimination, there was no discrimination on relief distribution was not reported except in a few wards of Gatlang.

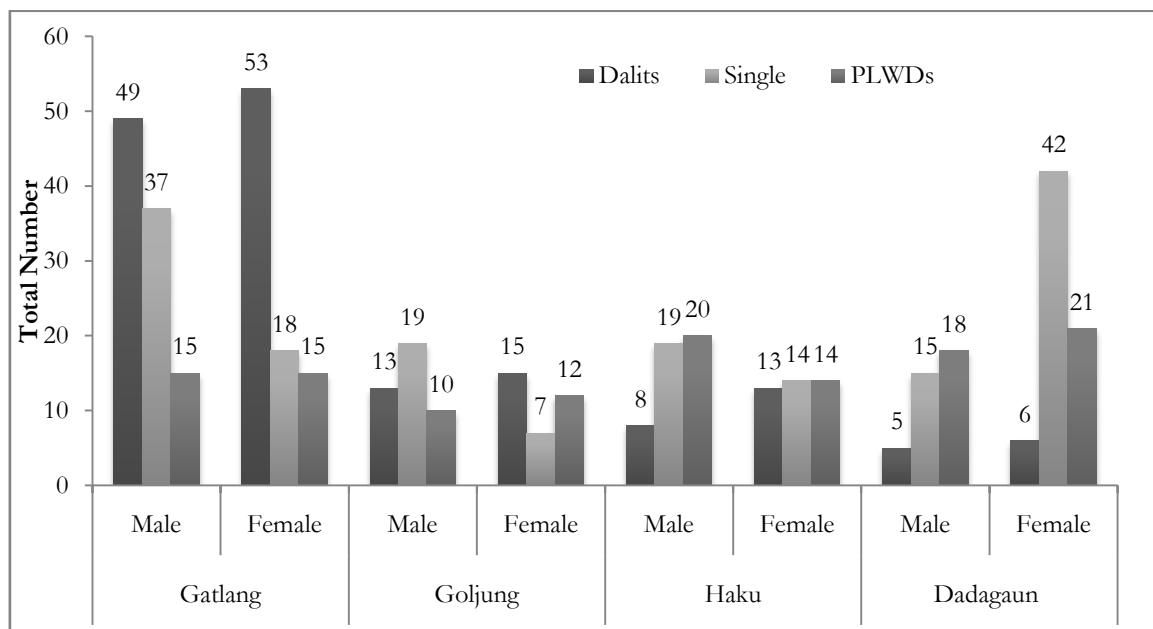
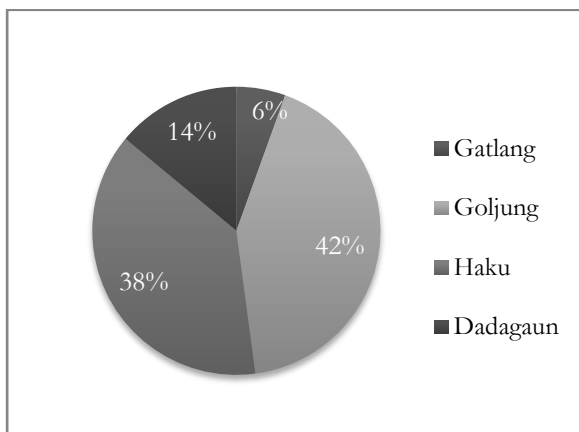
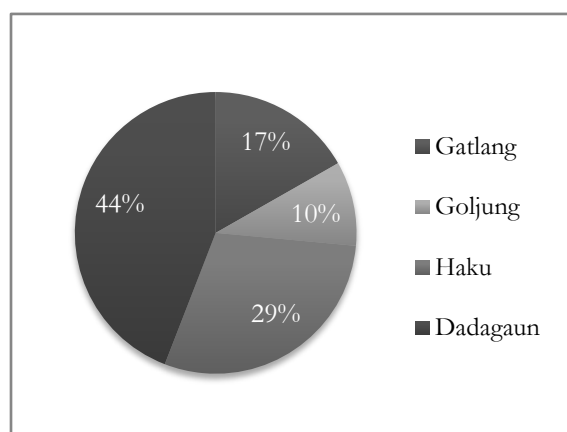


Figure 3.14: Population of *Dalits* and Single men/women in selected VDCs in Rasuwa, 2015

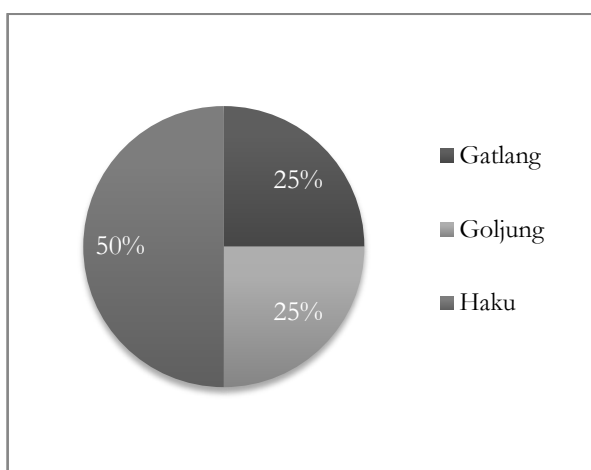
**Women headed households have to face additional burden of rebuilding their houses including assembling basic services and off farm activities.** Only a few PWLDs have access to drinking water and temporary shelter as shown in Figure 3.15 and 3.16. Living in communal temporary shelters was found to be a common challenge for all, especially for women and children because of the various risks involved with rain, cold, darkness and wild animals. Women find it difficult to cook food in the temporary shelter because of indoor smoke and occasional windy weather. Additionally, **temporary shelters were also found to be unfriendly to PLWDs** who are vulnerable and exposed more to these risks.



**Figure 3.15: PLWDs access to safe drinking water in selected VDCs in Rasuwa, 2015**



**Figure 3.16: PLWDs friendly temporary shelter in selected VDCs in Rasuwa, 2015**



**Figure 3.17: Women's involvement in tourism in selected VDCs in Rasuwa, 2015**

Women's involvement in the tourism sector was also found to be high in Haku where home stays were prevalent as shown in Figure 3.17. Women have also been facing effects of damage to infrastructure such as increase in work chores in and around the house as well as in the time and distance required to reach forest and water sources, mental trauma and fear of landslides, sanitation problems, difficulty in carrying out household works, sanitation problems etc. Both men and women were given equal importance in Goljung during humanitarian response however; women were only emphasized in remaining 3 VDCs.

### 3.6 Recovery Needs

Based on the findings of the post earthquake needs assessment, the fundamental needs of the communities were identified for the recovery phase. Recovery needs prioritized and recommended by the affected communities' of selected VDCs of Rasuwa on different sectors have been determined for each VDC as shown in Table 5.

**Table 5: Recovery needs prioritized by the communities in selected VDCs in Rasuwa, 2015**

<b>VDCs</b>	<b>Social</b>	<b>Economic</b>	<b>Physical</b>	<b>Cross-Cutting</b>
<b>Dadagaun</b>	<ol style="list-style-type: none"> <li>1. Reconstruction of damaged water sources and maintenance of existing partially damaged sources</li> <li>2. Water purification techniques</li> </ol>	<ol style="list-style-type: none"> <li>1. Vocational and skill training to overcome losses and sustain livelihood</li> </ol>	<ol style="list-style-type: none"> <li>1. Reconstruction of damaged infrastructures including roads, foot trails, schools, health-posts, and bridges and rebuilding of permanent and earthquake resistance shelters and latrines</li> </ol>	<ol style="list-style-type: none"> <li>1. Proper care and facilities that are friendly with PLWDs and elderly</li> <li>2. Nutritious food for elderly, nursing mothers and children</li> </ol>
<b>Haku</b>	<ol style="list-style-type: none"> <li>1. Rehabilitation of displaced communities</li> <li>2. Safe drinking water and sanitation and health facilities</li> </ol>		<ol style="list-style-type: none"> <li>1. Skilled human resources for construction of permanent earthquake resistant shelters</li> </ol>	<ol style="list-style-type: none"> <li>1. Nutritious food for the nursing and pregnant women, PLWDs, children and the elderly people</li> </ol>
<b>Gatlang</b>	<ol style="list-style-type: none"> <li>1. Adequate safe drinking water, sanitation services</li> <li>2. Improved cooking stoves (ICS), solar powered alternatives and health facilities nearby</li> <li>3. Educational materials, libraries for students, furniture and well equipped laboratories</li> </ol>	<ol style="list-style-type: none"> <li>1. Quality seeds and hybrid livestock for continuing agriculture</li> <li>2. Control of newly emerged pests through research</li> <li>3. Reconstruction of sheds for livestock</li> <li>4. Skill training for youth</li> </ol>	<ol style="list-style-type: none"> <li>1. Earthquake resistant and traditional homes using local materials (wood)</li> <li>2. Rebuilding of schools, community lodges, toilets</li> <li>3. Skilled human resources</li> </ol>	<ol style="list-style-type: none"> <li>1. Nutritious food for nursing and pregnant women, children and the elderly people</li> <li>2. Awareness and educational programs to increase and strengthen capacity to fight against social violence</li> <li>3. Walking aid for PLWDs</li> </ol>
<b>Goljung</b>	<ol style="list-style-type: none"> <li>1. Reconstruction and maintenance of drinking water resources and water storage tanks</li> <li>2. Rebuilding of schools</li> <li>3. Boxes to store educational materials of the students</li> </ol>	<ol style="list-style-type: none"> <li>1. Quality seeds and livestock breeds</li> </ol>	<ol style="list-style-type: none"> <li>1. Leadership skill training programs as they want to be involved in the rebuilding process</li> <li>2. Community toilets</li> </ol>	<ol style="list-style-type: none"> <li>1. Livelihood diversification trainings for disadvantaged groups</li> </ol>

**Glimpses of the impact of the earthquake, relief support and Needs Assessment in Rasuwa**



**Photo 1: Destroyed traditional communities, Gatlang, Rasuwa, 2015**



**Photo 2: Earthquake induced landslide in Dadagaun, Rasuwa, 2015**



**Photo 3: Relief assistance for communities in selected VDCs in Rasuwa, 2015**



**Photo 4: People rebuilding their house through the salvaged wood from their broken house, Gatlang, Rasuwa, 2015**



**Photo 5: Educational material support in selected VDCs in Rasuwa, 2015**



**Photo 6: On-ground needs assessment by Social Mobilizer in Rasuwa, 2015**

#### 4. FINDINGS FROM DHADING

Dhading, with an area of 1,926 square kilometers and a total of 50 VDCs, is one of the northern most districts of the Central Development Region. Hinduism is the major religion in Dhading district. Out of TMI's 7 working VDCs- Darkha, Sertung, Baseri, Lapa, Ree Gaun, Tipling and Jharlang in Dhading district, only 4 VDCs- Sertung, Lapa, Tipling and Jharlang were selected for Phase 1 i.e. short-term relief and needs assessment based on identified gaps and priorities. The findings of the needs assessment in Dhading district comprise of the damage and losses followed by sectoral impacts and recovery needs as follows:

##### 4.1 Damage and Losses

The percentage of the population affected could be estimated to be 100% because most of their houses were damaged, their belongings buried in the rubble, agricultural lands affected by earth fissures, and hundreds of households displaced by earthquake triggered landslides. Consequently, because of the combined effects of the earthquake on the various sectors, the livelihood of the people has been affected, either directly or indirectly. **The highest number of human casualties was reported in Jharlang followed by Lapa** as shown in Figure 4.1.

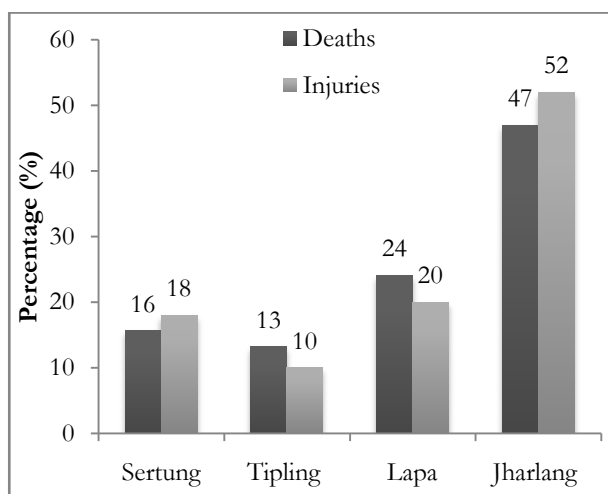


Figure 4.1: Human casualties in selected VDCs in Dhading 2015

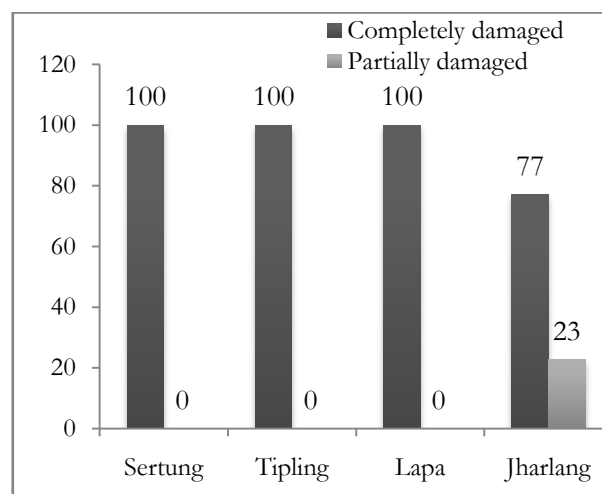


Figure 4.2: Houses damaged in selected VDCs in Dhading, 2015

The harsh topography of these mountain VDCs which had been further weakened and exacerbated by the earthquake and monsoon rains have triggered a number of landslides with their lands and their livelihood assets washed away, compelling more than 900 households to be internally displaced. **The highest number of internally displaced households and area affected by landslides was found in Lapa followed by Tipling** as shown in Figures 4.3 and 4.4.

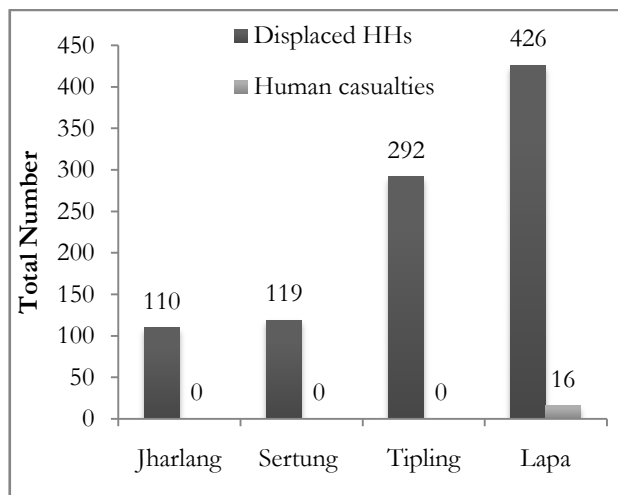


Figure 4.3: Internally Displaced Households due to landslides in selected VDCs in Dhading, 2015

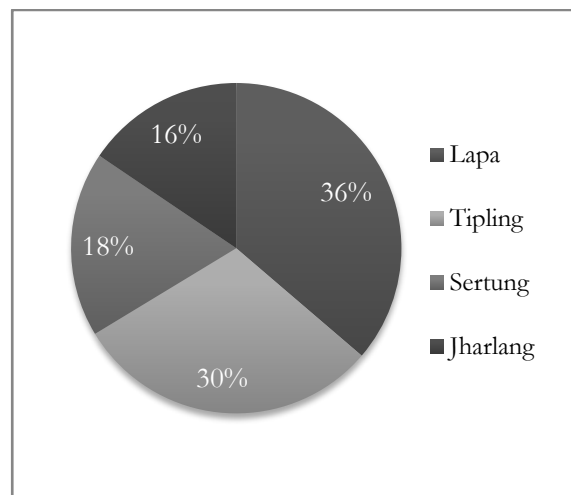


Figure 4.4: Estimated area affected by landslides in selected VDCs in Dhading, 2015

## 4.2 Social Sector

### A. Water, Sanitation and Hygiene

According to the post-earthquake assessment in the 4 VDCs, a total of 17 water sources and 155 water taps was found to be damaged either completely or partially as a result of cracks in the water reserve tanks and surrounding walls of the water sources or leakage in water pipelines by the earthquake triggered landslides and flash flood resulting in the water sources getting polluted. **Moreover, only 50 % of the population had access to drinking water in Jharlang, Tipling and Lapa** as shown in Figure 4.5. Similarly, about 50% of the population had access to temporary toilets in the 4 VDCs. **However, open defecation was dominantly practiced in Jharlang as there was no provision of any community and private toilets** as shown in Figure 4.6. In spite of the availability of a few private toilets or community toilets, open defecation was being practiced in Tipling, Sertung and Lapa.

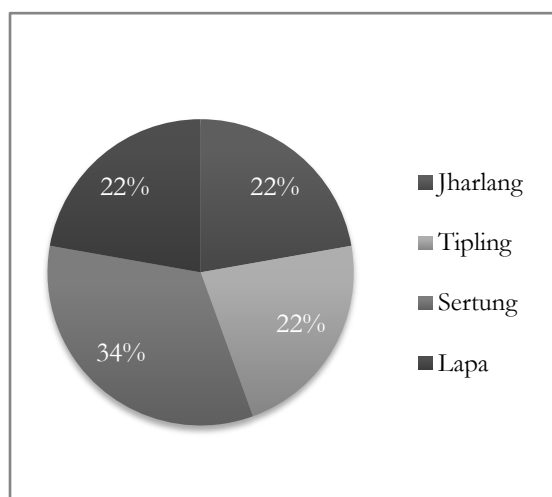


Figure 4.5: Population with access to drinking water in selected VDCs in Dhading, 2015

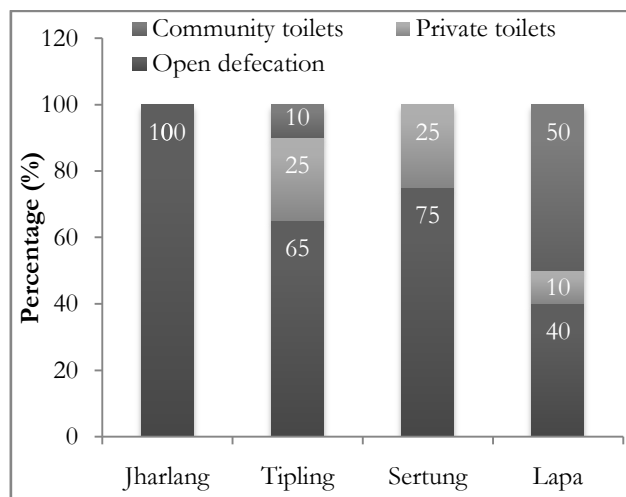


Figure 4.6: Population practicing alternative of toilets in selected VDCs in Dhading, 2015

In almost all the VDCs, water was used directly from the source and only a few boiled water and use of *Piyush*/Chlorine. There was no water container i.e. community water tanks in Jharlang whereas, 46% of the community of Tipling, 30% of the community in Lapa and 12% of the community in Sertung had access to water tanks. **Lack of waste management in Sertung, polluted water and open defecation in Lapa and lack of personal hygiene in Tipling were found to be major threats to people’s health and well-being** as shown in Figure 4.7. Almost all the women used clothes during their menstrual cycle and in the post-earthquake period; women of Jharlang and Tipling did not have adequate cloth as their belongings had been destroyed in the rubble.

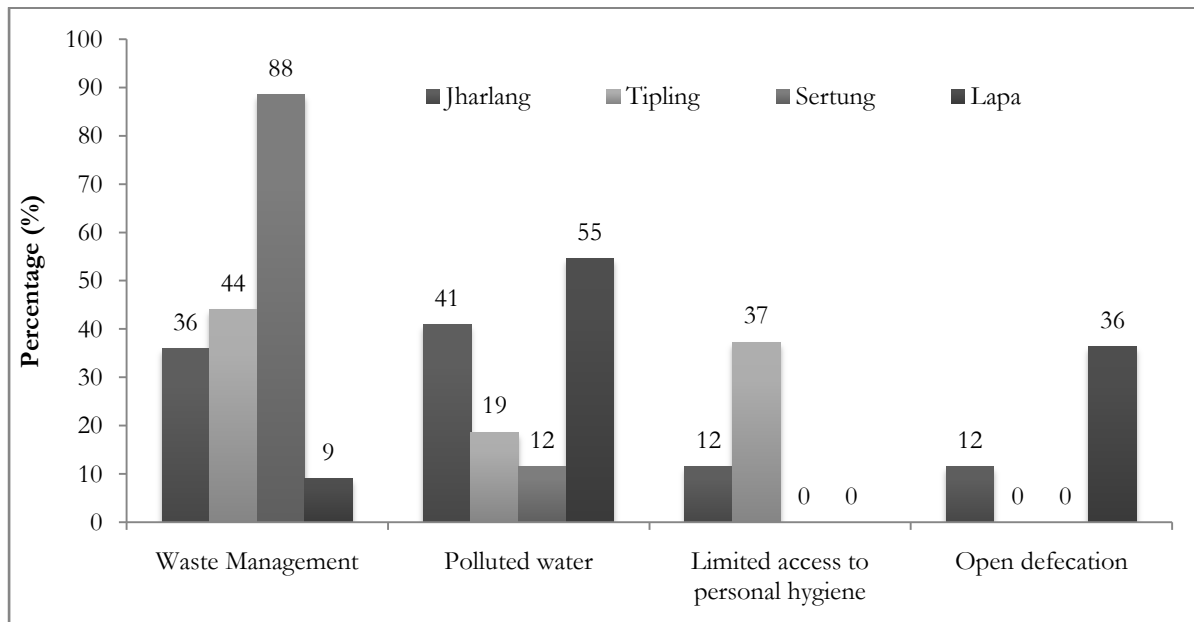


Figure 4.7: Threats to health and well-being of communities in selected VDCs in Dhading, 2015

### E. Shelter

A total of 3,617 houses in the 4 VDCs had been destroyed and were uninhabitable. People were found to be living in temporary shelters in their fields, open spaces and displaced camps presumed to be safe from landslides.

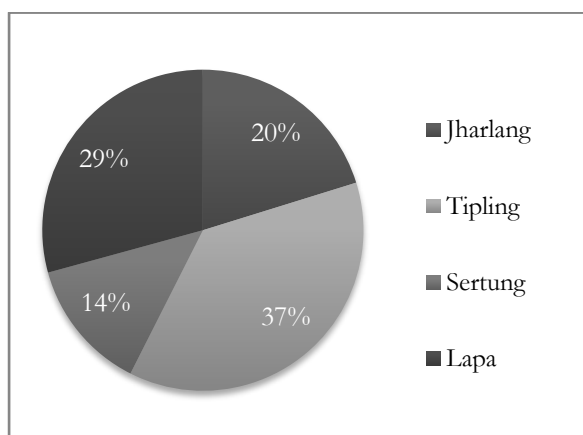


Figure 4.8: Population in immediate need of shelter in selected VDCs in Dhading, 2015

Temporary shelters made from tarpaulins and tents were not found to be sustainable. The community members who were living in temporary shelters in the 4 VDCs reported rain, wild animals and insects/flea as the most common threats. **Cold was also reported as a threat for women, children, elderly and PLWDs.** Wood, stone and mud were the local resources found in both VDCs with about 15 skilled human resources in each VDC.

About 50 % of the population did not have access to safe temporary shelter. Although in almost all the VDCs, household belongings were buried in the rubble of houses, majority of them managed to pull out some kitchen utensils, cleaning materials, clothes and blankets.

## F. Education

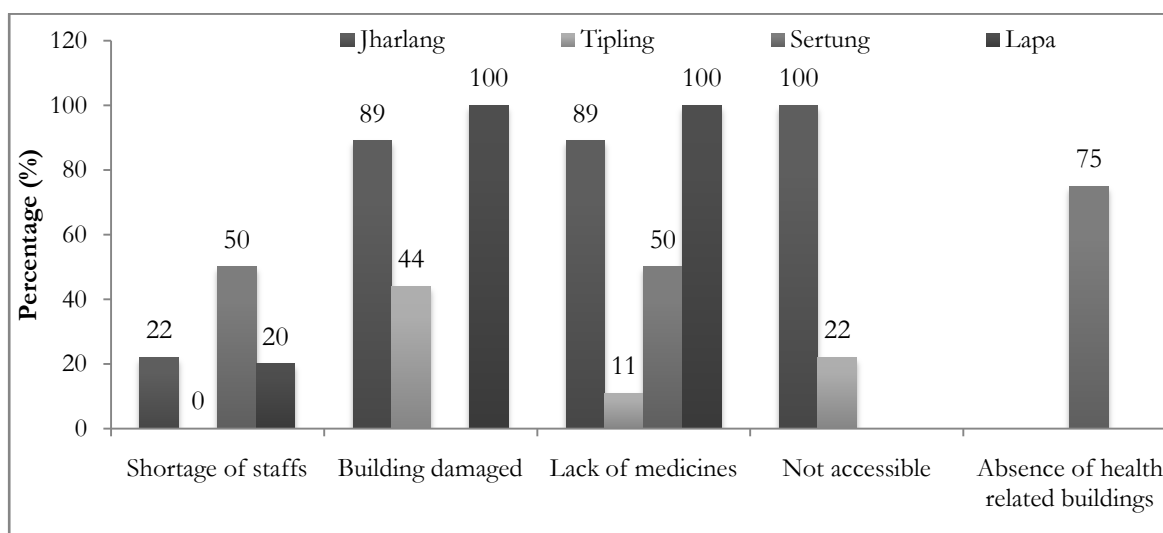
A total of 587 schools have been damaged in Dhading district (As of 22<sup>nd</sup> May 2015, DoE) and all 26 schools (16 primary, 4 lower secondary, 5 secondary and 1 higher secondary) in the 4 VDCs were damaged and structurally unsafe. The recurring reasons for schools not functioning were found to be mainly damage to school buildings and loss of educational materials of students. Drinking water and toilets in most of the schools were also found to be either completely or partially damaged or on the verge of damage which could create sanitation and hygiene issues among students in the schools.

**Table 6: TLCs constructed by different organizations in selected VDC**

VDCs	Materials used for TLCs	Organizations
Jharlang	Tarpaulins and tents	Himalayan Health Care and Nepal Red Cross Society
Tipling	Tarpaulins, tents and wood	Himalayan Health Care, Roman Project and Jesus Society
Sertung	CGI sheets, tarpaulins, tents and wood	Himalayan Health Care, DoE, EVNS, United Mission to Nepal (UMN) and community youths
Lapa	Tarpaulins, wood and bamboo	Himalayan Child, UMN, DoE

## G. Health

In the case of the health sector, ANMs and FCHVs were present in health posts, except in ward number 8 of Jharlang despite the damage on health related infrastructures. Limited services related to health post, ANMs and FCHVs were present in few wards of Tipling and Lapa. There was no any sub-health or health posts in Sertung VDC as shown in Figure 4.9.



**Figure 4.9: Major reasons for not functioning of health facilities in selected VDCs in Dhading, 2015**

Since foot trails to temporary health camps in these remote VDCs had been damaged by landslides, communities that had been deprived of health facilities were further at risk of a number of communicable diseases because of lack of waste management and safe drinking water as shown in Figure 4.10.

When communities were asked about their need for counseling and the counseling support available, they reported that school teachers and local intellectuals had been providing counseling to children and others in need in Sertung. Similarly, teachers, health post workers and different in Jharlang, social workers in Lapa and school teachers and Jesus Society in Tipling.

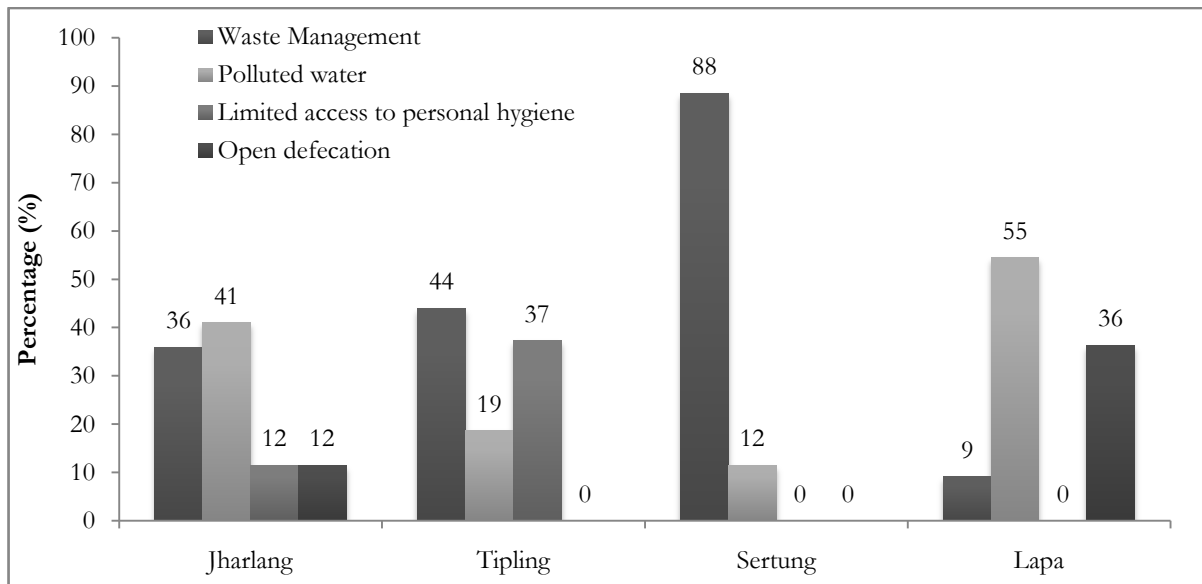


Figure 4.10: Major health concerns of communities in selected VDCs in Dhading, 2015

Nursing mothers and pregnant women are among the most affected by the earthquake and its impact. They have been deprived of health facilities and nutritious food both crucial to their health, clothes, adequate water, safe and warm shelter and care facilities for their children in addition to being exposed to rain and cold.

### 4.3 Economic Sector

#### Agriculture

Paddy, wheat, maize, potato, barley, millet and buckwheat were found to be the staple food crops of these mountain communities and the available food stock in these 4 VDCs was enough for 1- 3 months. In the agriculture sector, seeds, livestock and agricultural tools which form the basis for people’s livelihood were found to have been damaged extensively in Jharlang, and partially damaged in the remaining 3 VDCs as shown in Figure 4.11. Less than 25% of the population in all of the 4 VDCs was able to buy essential materials from the market. With markets being partially operational – even people with money were unable to buy essential goods. In addition, communities in remote areas had to travel long distances up to 2 days to reach the nearest market.

**Lack of balanced and nutritious food was a major concern for pregnant, nursing mothers and infants.** However, the disabled and elderly people were not discriminated even in temporary shelters and were found to have received care from their family members.

## Forest Resources

Forest resources formed another major source of NTFPs, timber, fire-wood and fodder for the livelihood of these mountain communities. These resources were found to have been destroyed by the earthquake triggered landslides and earth fissures. As a result, people had been facing difficulties to access forest resources. In the post-earthquake period, despite the difficulties in accessing these forest resources, people from a few wards were seen to be utilizing timber, fuel wood, fodder, grass, and fruits from the forest for their livelihood sustenance.

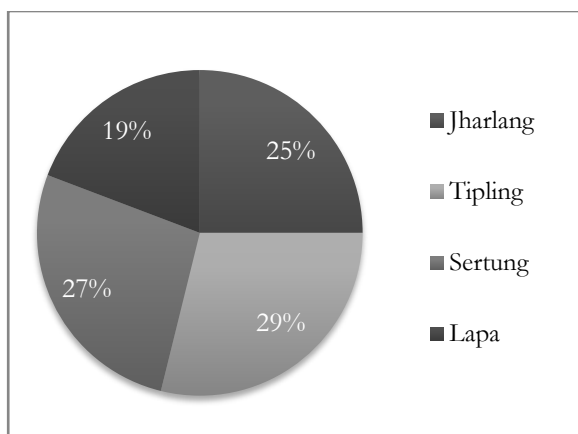


Figure 4.11: Severity of damage on crops in selected VDCs in Dhading, 2015

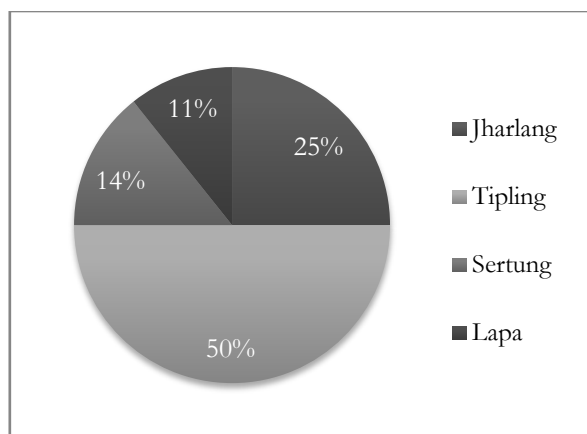


Figure 4.12: Approximate livestock affected in selected VDCs in Dhading, 2015

Livestock accounts for over 23 % of value added in agriculture (NPC 2015). **The approximate percentage of livestock affected was found to be high in Tipling** as shown in Figure 4.12. Communities of all 4 VDCs have requested for hybrid livestock for better income and production. Because seeds and agricultural tools had been damaged, communities had also requested for good quality seeds and agricultural tools for rebuilding the agriculture sector, fundamental for their livelihood.

## Medicinal and Aromatic Plants

MAPs and their seedlings in nurseries were found to be highly affected in all 4 VDCs. The various MAPs that were being cultivated were Chirayito Satuwa, Loth salla and cardamom etc. **The damage that was reported included lack of germination of MAPs seedlings, damage to nurseries of MAPs seedlings, scarcity of water, MAPs fields swept away by landslides and earth fissures and unavailability of MAPs seeds for the next cultivation season.**

## Tourism

Likewise, in the tourism sector, 25 hotels and 43 home stays were reported to have been highly damaged by the earthquake, with greater numbers in Jharlang and less in Lapa and Tipling. **The popular trekking routes to Ganesh Himal and Manaslu Conservation Area are the main tourist attractions of the district.** To revive tourism in these 4 VDCs; rebuilding materials, low interest loans provided by the government and re-establishment of blocked trekking routes and foot trails were reported as the common voice of the communities involved in tourism.

## 4.4 Physical Sector

### Infrastructure

Destruction of infrastructures resulted in further isolation of these remote VDCs in addition to the disruption of schools, health services, cultural and ritual activities and lack of water supplies etc. Electricity and communications were reported to have been disrupted for a long time period after the first earthquake and most of the infrastructures weakened by the major earthquake were further destroyed by the second earthquake. Roads and foot trails have been damaged and obstructed at a number of places in these remote VDCs by landslides which have been further intensified by the monsoon rain.

**Table 7: Infrastructure damage in selected VDCs in Dhading, 2015**

S.N.	Infrastructures	VDCs	Quantity
1	Water sources	Tipling, Sertung, Lapa, Jharlang	17
2	Health Post	Tipling, Sertung, Lapa, Jharlang	4
3	VDC office	Tipling, Sertung, Lapa, Jharlang	4
4	Community Buildings		
5	Schools	Tipling, Sertung, Lapa, Jharlang	26
6	Church/ Monastery/Temple		
7	Community Buildings		
8	Water Taps	Tipling, Sertung, Lapa, Jharlang	155
9	Irrigation		
10	Roads/Foot trails	Lapa	300 m
		Jharlang	400 m
		Tipling	250 m
		Sertung	100 m

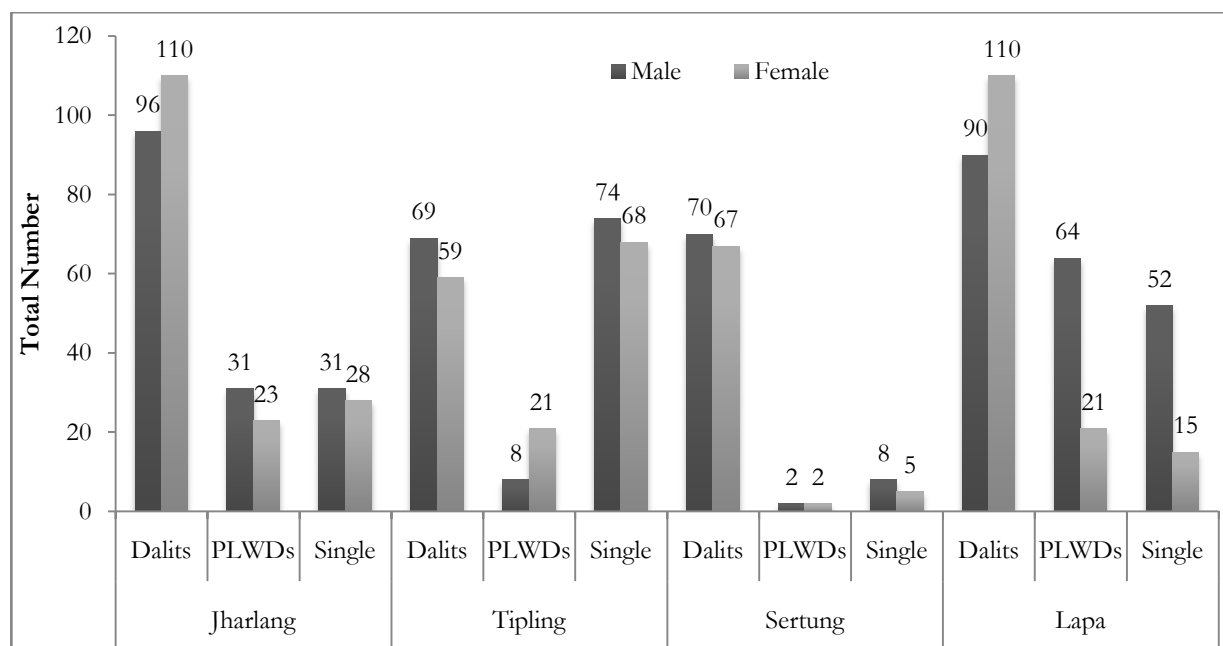
### 4.5 Cross-cutting Sectors

In the post-earthquake scenario, issues related to families that were separated were found in the community displaced camps in Jharlang, Sertung and Lapa. Similarly, violence amongst displaced families/communities was reported in Tipling. Accounts of people who had lost their legal documents in the rubble of their houses were also reported in Lapa and Tipling, which could create problems and prevent them from receiving rehabilitation assistance in the near future.

**Risk of landslides was reported to be high in almost all 4 VDCs.** Discrimination against people with AIDs and untouchables were not reported. Security and health related problems was reported in temporary shelters as these shelters did not provide protection to women from sexual abuse and violence or ensure necessary sanitation and hygiene conditions.

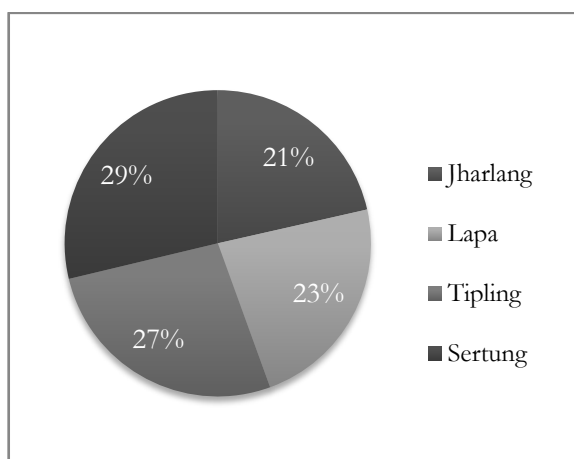
## Gender Equity and Social Inclusion

Disadvantaged and vulnerable groups such as *Dalits*, PLWDs, and single men/women suffered the most from the impacts of the earthquake. As a result, women in temporary shelters not only face lack of nutritious food, security and health problems, they have had to face increased domestic chores in and outside the house, not able to cook food and take care of children.

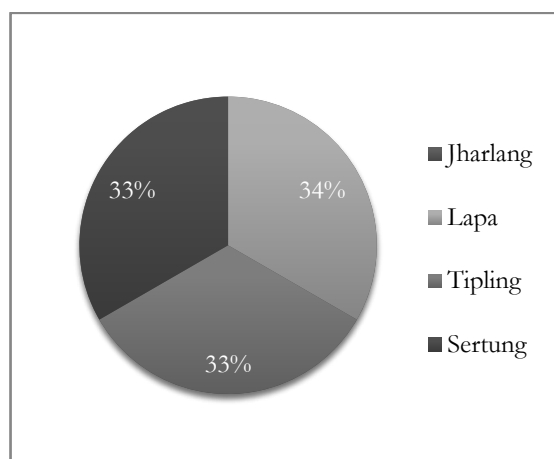


**Figure 4.13: Total number of *Dalits*, PLWDs and Single men/women in selected VDCs in Dhading, 2015**

PLWDs had access to safe drinking water as shown in Figure 4.14. However; the overall data was quite low. Having to live in temporary shelters was found to be a common challenge for all, especially for women and children because of risks related with rain, cold, darkness and wild animals. Women find it difficult to cook food in the temporary shelters because of indoor smoke and occasional windy weather. **Additionally, in Jharlang, temporary shelters were also found to be unfriendly to PLWDs** as shown in Figure 4.13.



**Figure 4.14: PLWDs access to safe drinking water in selected VDCs in Dhading, 2015**



**Figure 4.15: PLWDs friendly temporary shelter in selected VDCs in Dhading, 2015**

**Women's involvement in the tourism sector was found to be only 25% in all 4 VDCs.** Women have also been facing effects of damage to infrastructure such as increase in work chores in and around the house as well as in time and distance required to reach forest and water sources, mental trauma and fear of landslides, problems related to health and sanitation facilities, difficulty in carrying out household works etc. Although discrimination on gender is prevalent, gender equality was seen in the case of humanitarian response in all 4 VDCs.

#### **4.6 Recovery Needs**

Based on the findings of the post earthquake needs assessment, the fundamental needs of the communities were identified for the recovery phase. Recovery needs prioritized and recommended by the affected communities' of selected VDCs of Dhading on different sectors have been determined for each VDC as shown in Table 8.

**Table 8: Recovery needs identified by the communities of selected VDCs in Dhading, 2015**

<b>VDCs</b>	<b>Social</b>	<b>Economic</b>	<b>Physical</b>	<b>Cross-Cutting</b>
Jharlang	<ol style="list-style-type: none"> <li>1. Training and awareness raising programs on importance of WASH maintenance; earthquake, its impacts and precautions to be taken</li> <li>2. Construction of school buildings with educational and recreational materials, furniture, school uniforms</li> <li>3. Availability of sanitation and hygiene kits</li> </ol>	<ol style="list-style-type: none"> <li>1. Trainings on MAPs cultivation and nursery preparation</li> <li>2. Rehabilitation of religious and cultural sites</li> </ol>	<ol style="list-style-type: none"> <li>1. Earthquake resilient structures- shelters, schools, bridges, health-post, roads, electricity etc. and maintenance of the damaged roads and foot trails</li> <li>2. Examination of land surfaces by engineers to check whether they are suitable for habitat</li> </ol>	<ol style="list-style-type: none"> <li>1. Support for single men/women, PLWDs and elderly people for shelters and food</li> <li>2. Nutritious food for elderly, nursing mothers and children</li> </ol>
<b>Tipling</b>	<ol style="list-style-type: none"> <li>1. Awareness program on health and sanitation and first aid treatment</li> <li>2. Identity cards to apply for support from helping organizations</li> </ol>	<ol style="list-style-type: none"> <li>1. Income generation programs for livelihood support</li> <li>2. Support for modern techniques for livestock farming</li> <li>3. Promotion of tourism</li> <li>4. Seed varieties of crops, vegetables and MAPs</li> </ol>	<ol style="list-style-type: none"> <li>1. Skilled human resources for re-construction of infrastructures</li> <li>2. Construction of wooden bridge, maintenance of damaged infrastructure, CGI sheets for the construction of temporary shelters, skilled manpower for the reconstruction process</li> <li>3. Identification of places at risk of landslides</li> </ol>	<ol style="list-style-type: none"> <li>1. Nutritious food for the nursing and pregnant women, PLWDs, children and the elderly people</li> </ol>

<b>Sertung</b>	<ol style="list-style-type: none"> <li>1. Reconstruction and maintenance of damaged water resources</li> <li>2. Health camps for emergency treatment or disease outbreak</li> <li>3. Regular health check-up for nursing and pregnant women</li> <li>4. Provision of volunteer health workers</li> <li>5. First aid training for community</li> <li>6. Establishment of school in ward no. 6</li> <li>7. Educational materials and reconstruction of school building</li> <li>8. Drinking water purification techniques</li> </ol>	<ol style="list-style-type: none"> <li>1. Trainings on MAPs (no MAPs cultivation yet)</li> <li>2. Reconstruction of damaged religious sites and structures</li> </ol>	<ol style="list-style-type: none"> <li>1. Earthquake resistant building materials and skilled human resource for rebuilding permanent residence</li> <li>2. Technical consultant to assess and identify places vulnerable to landslides and identify solutions to control further disasters</li> </ol>	<ol style="list-style-type: none"> <li>1. Income generation activities for PLWDs</li> </ol>
<b>Lapa</b>	<ol style="list-style-type: none"> <li>1. Construction of pipelines for safe drinking water</li> <li>2. Awareness programme on importance of health and sanitation</li> </ol>		<ol style="list-style-type: none"> <li>1. Maintenance and rebuilding of infrastructures</li> </ol>	<ol style="list-style-type: none"> <li>1. Nutritious foods for children, nursing and pregnant women</li> </ol>

**Glimpses of the impact of the earthquake, relief support and Needs Assessment in Dhading, 2015**



**Photo 7: Destroyed conventional house in Jharlang, Dhading, 2015**



**Photo 8: Earthquake induced landslides in Dhading, 2015**



Photo 9: Displaced people of selected VDCs in Arughat, Dhading, 2015



Photo 10: Relief assistance to people in displaced camps, Dhading, 2015



Photo 11: TMI's community consultation at Jharlang, Dhading, 2015



Photo 12: Army men helping communities to rebuild TLC, Dhading, 2015

## 5. FINDINGS FROM GORKHA

Gorkha with an area of 3,610 square kilometers and a total of 66 VDCs is one of the northern most districts of the Central Development Region. Hinduism is the major religion in the district. Both of TMI's working VDCs- Manbu and Kashigaun were selected for Phase 1 i.e. short-term relief and needs assessment based on identified gaps and priorities. The findings of needs assessment in Gorkha district comprise of the damage and losses followed by sectoral impacts and recovery needs as follows:

### 5.1 Damage and Losses

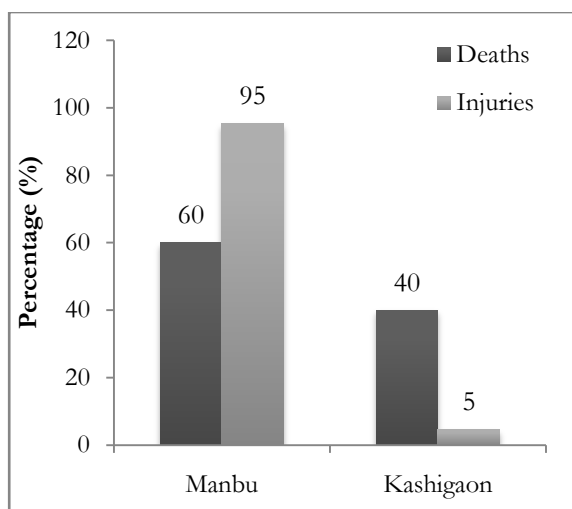


Figure 5.1: Human casualties in selected VDCs in Gorkha, 2015

The overall percentage of the population affected either directly or indirectly was estimated to be 100% because all the houses were completely destroyed, their belongings buried in the rubble, agricultural lands affected by earth fissures or loss by landslides and their livelihoods affected. **The highest number of human casualties was reported in Manbu as compared to in Kashigaun.**

Due to the earthquake triggered landslides, more than 300 households of Manbu had been displaced although no human casualties were reported as shown in Figure 5.2. Moreover, **area affected by landslides was estimated to be high in Manbu** as shown in Figure 5.3.

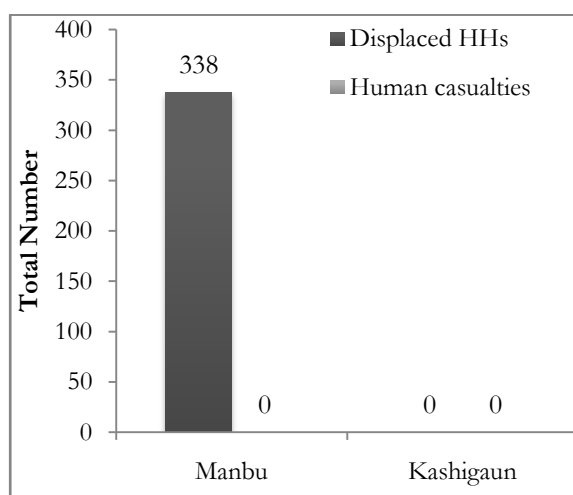


Figure 5.2: ID HHs due to landslides in selected VDCs in Gorkha, 2015

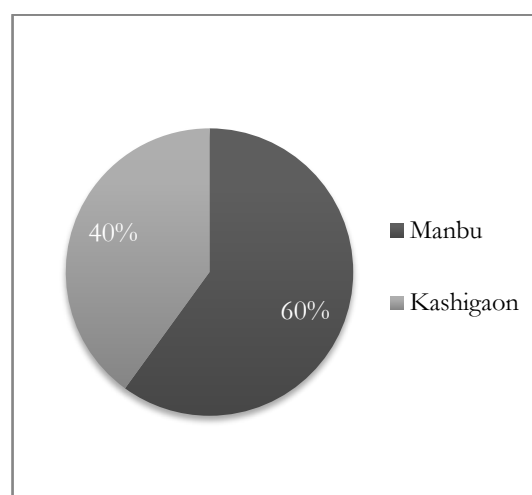


Figure 5.3: Estimated area affected by landslides in selected VDCs in Gorkha, 2015

## 5.2 Social Sector

### A. Water, Sanitation and Hygiene

According to post-earthquake needs assessment in 2 VDCs, water sources was reported to have been damaged completely or partially as a result of drying up, cracks in the water reserve tanks or pipes and sources destroyed by the earthquake triggered landslides. Consequently, only 50 % of the population had access to drinking water. Similarly, people's access to temporary toilets was found to be high in Manbu compared to Kashigaon as shown in Figure 5.5. Likewise, **open defecation was found to be practiced in both VDCs** as shown in Figure 5.5. Sanitation condition was comparatively better in Manbu where pit toilets were available. Direct use of water without using any water purification techniques was found to be practiced in both VDCs. Water containers i.e. community water tanks were available in 7 wards of Manbu whereas in only 1 ward in Kashigaon.

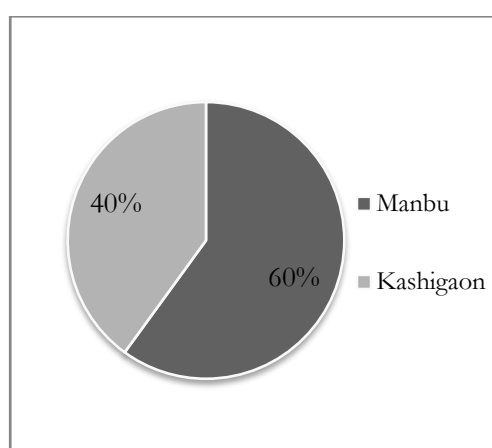


Figure 5.4: Population with access to temporary toilets in selected VDCs in Gorkha, 2015

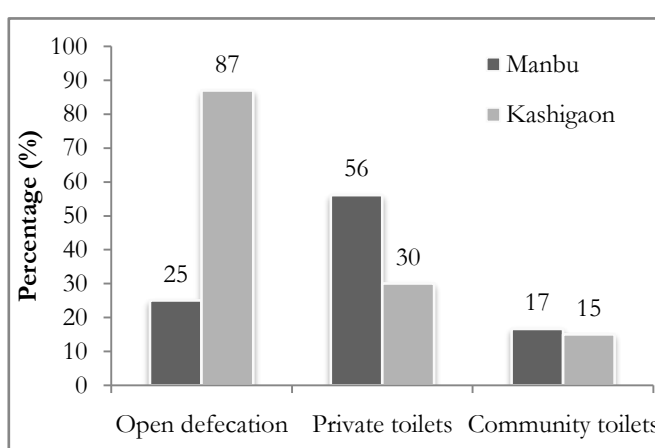


Figure 5.5: Population practicing alternative of toilets in selected VDCs in Gorkha, 2015

**Polluted water was found to be the major threat to the health and well-being of the people followed by lack of waste management in both VDCs.** Another major issue was that related to the menstrual health of women. Almost all the women used clothes during their menstrual cycle and availability of cloth was limited in the post-earthquake period. Thus, menstrual hygiene of women is an important issue because of inadequate water and availability of cloth.

### B. Shelter

A total of 1,856 houses in Manbu and 498 houses in Kashigaon have been destroyed and were uninhabitable irrespective of whether they are destroyed completely or partially. People were found to be living in temporary shelters in their fields or open spaces assumed to be safe from landslides and rain and they are likely to remain there for months if not years. **About 50% of the population lacked safe and better temporary shelter.** Household belongings were also lost in the rubble of their houses, although a majority of the population was able to pull out some utensils or blankets in Kashigaon while only blankets in Manbu.

Temporary shelters in these mountain areas will not be able to stand up to extreme heavy rains and storms and are found to be unsuitable in the long term. Rain, cold, darkness and wild animals were reported to be common threats in both VDCs with women, children, elderly and disadvantaged groups facing greater difficulty. Wood, stone and mud were the local resources found in both VDCs with about 20 skilled human resources available.

### C. Education

A total of 495 schools were damaged in Gorkha district (As of 22<sup>nd</sup> May 2015, Department of Education) and all 12 schools (8 primary, 3 lower secondary and 1 secondary) of both Manbu and Kashigaon were damaged and structurally unsafe. The recurring reasons for schools not functioning were found to be mainly damage to school buildings and loss of educational materials of students. TLCs were established in almost all the schools of both the VDCs using CGI sheets and wood provided by DEO in Kashigaon and Good Neighbours, an international non-government organization. Drinking water and toilets in most of the schools were also found to be damaged which could create a major sanitation and hygiene issue among the students.

### D. Health

In case of the health sector, the damage in existing health posts and primary health care centres in Manbu and sub-health posts in Kashigaon along with the shortage of ANMs and FCHVs were found to have affected the health situation in the community as shown in Figures 5.6 and 5.7. This was further intensified by the lack of medicines and access to these remote VDCs due to infrastructure damage i.e. damage by landslides. **Communities have been deprived of adequate WASH, medicines, medical facilities, waste management and safe drinking water and thus are susceptible to a number of communicable diseases.**

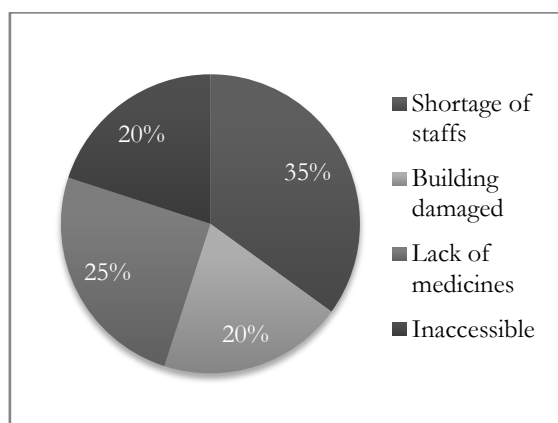


Figure 5.6: Major reasons for not functioning of schools in Manbu, Gorkha, 2015

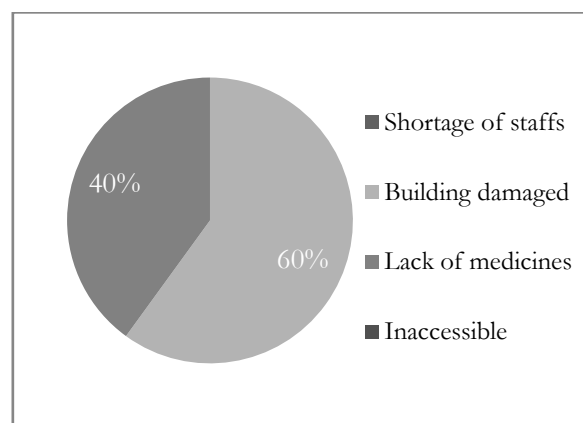


Figure 5.7: Major reasons for not functioning of schools in Kashigaun, Gorkha, 2015

Communities when asked about their need and availability of counseling and support reported that, INGOs like Good Neighbour and Phase Nepal have been providing counseling to children and other needy groups in Manbu and Kashigaon respectively. Nursing mothers and pregnant women are amongst the most affected by the earthquake and its consequences have been deprived of health facilities crucial for their maternal health as well as nutritious food, sanitation and hygiene facilities and safe and warm shelter.

### 5.3 Economic Sectors

#### Agriculture

Paddy, wheat, maize, potato, barley, millet and buckwheat were found to be the staple food crops of these mountain communities and the available food stock in these 4 VDCs was enough for 2-3 months. In case of the agriculture sector, seeds, livestock and agricultural tools which form the basis for people's livelihood were found to have been damaged as shown in Figure 5.8. Less than 50% of the population was able to buy essential materials from the market in Manbu and about 50% in Kashigaon as shown in Figure 5.9. With markets being partially operational, even people with money were unable to buy essential goods. In addition, communities in remote areas had to travel long distances up to 1-2 days to reach the nearest market.

#### Forest Resources

Forest resources formed the major sources of NTFPs, timber, fire-wood and fodder for the communities. These resources were found to be destroyed by the earthquake triggered landslides and earth fissures. As a result, people have had to spend more time and cover longer distances in search of fodder and wood, especially for women in Manbu and male in Kashigaon, responsible for collecting forest resources. In post-earthquake period, despite the difficulties in accessing these forest resources, people from some of the wards were seen to be utilizing timber, fuel wood, fodder, grass, fruits from forest for their livelihood sustenance while others do not have any access to forest resources due to the landslides.

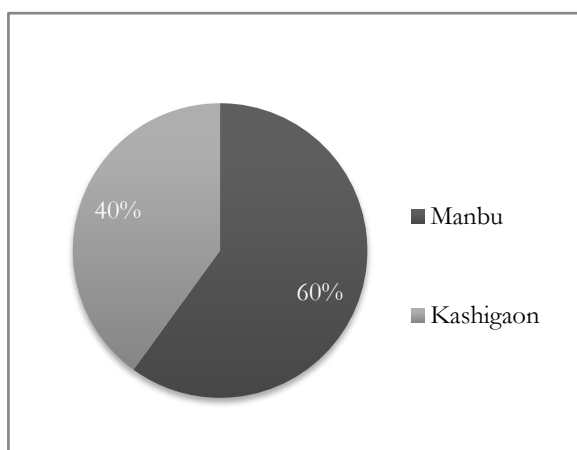


Figure 5.8: Severity of damage on crops in selected VDCs in Gorkha, 2015

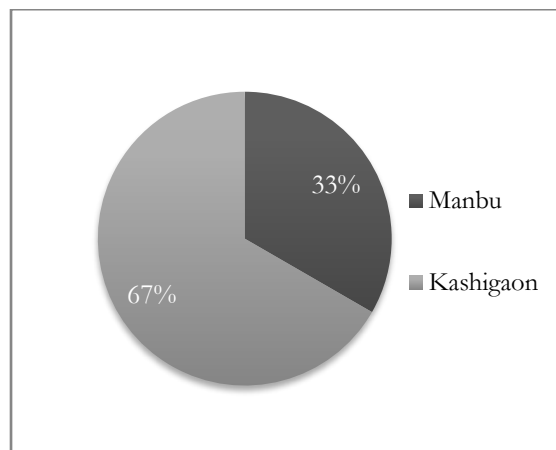


Figure 5.9: Approximate livestock affected in selected VDCs in Gorkha, 2015

As the approximate livestock affected was high in Kashigaon, communities have appealed for the provision of hybrid livestock for better income and production. With seeds and agricultural tools have been affected, communities have also requested for quality seeds and agricultural tools for rebuilding agriculture, which is fundamental to their livelihood.

#### Medicinal and Aromatic Plants

MAPs cultivation which was initiated by TMI to support sustainable livelihood of the communities, had also been partially damaged especially in Manbu and completely damaged in Kashigaon due to the landslides. Chirayito with some Lokhta was the only MAPs being cultivated in ward number 3, 6, 7 and 8 in Manbu and all nine wards in Kashigaon. The damage

to the MAPs sector that was reported included MAPs fields being swept away by landslides and damage to nurseries of MAPs and unavailability of MAPs seeds for the next cultivation season.

### **Tourism**

Likewise, in the tourism sector, the only hotel in Manbu with an estimated annual income of Rs. 100,000 was damaged in the earthquake. **A popular trekking route to *Ganesh Himal* could be rebuilt for reviving tourism on a greater scale in Manbu.** Hotels, home stays and lodges are not available in Kashigaon so tourism sector can be developed to support the livelihood of the communities. To revive the tourism sector in Manbu, rebuilding support and reconstruction of damaged foot trails need to be carried out.

## **5.4 Physical Sectors**

### **Infrastructure**

Infrastructure includes electricity, communications, community buildings, roads, bridges, cultural monuments, water sources, foot trails etc. Roads, at times 3 m - 5 km at certain sections in each ward of the VDCs, schools, temples, monastery, church, bridges, and health post. Sub-health post, gabion walls, water sources, foot trails, community buildings, electricity and communications was damaged completely or partially and disrupted. Regardless of the geographical complexities in these remote VDCs, the destruction of infrastructures coupled with poor weather, hampered the relief activities and further marginalized the communities with no access to socio-economic and other development services. Destruction of infrastructures resulted in the isolation of these remote VDCs along with the disruption of schools, health services, cultural and ritual activities, lack of adequate water supplies and many more. The probability of landslides accounted over 50% in Manbu whereas about 25% in Kashigaon.

## **5.5 Cross-cutting Sectors**

### **Social Protection**

Although none of the households or individuals had been internally displaced, living in temporary shelters certainly has issues of social protection. However, issues such as sexual abuse, rape, domestic violence, and harmful traditional practices, breakdown of law/order, violence, child abuse and exploitation, abandoned children were found in the communities of both the VDCs.

Thirty-six people of ward no. 6 of Manbu were reported to have lost their legal documents during the earthquake which could create problems and prevent them from receiving assistance. Even though, there have been heightened risks of landslides across the weakened slopes of the mountainous areas, communities of both Manbu and Kashigaon were found to be living in vulnerable areas.

### **Gender Equity and Social Inclusion (GESI)**

Women have limited assets and land ownership as well as limited livelihood options compared to men; they carry a proportionately larger burden of domestic chores and are more vulnerable to any disaster and its consequences. If we review the human casualties of earthquake across Nepal or in TMP's working areas, the number of casualties among women was higher as compared to men, which might be due to various social and cultural boundaries. Similarly, *Dalits* and other

marginalized ethnic groups such as PLWDs who were already deprived of access to socio-economic services will face further challenges post-earthquake as many of them do not have any means to rebuild their lives.

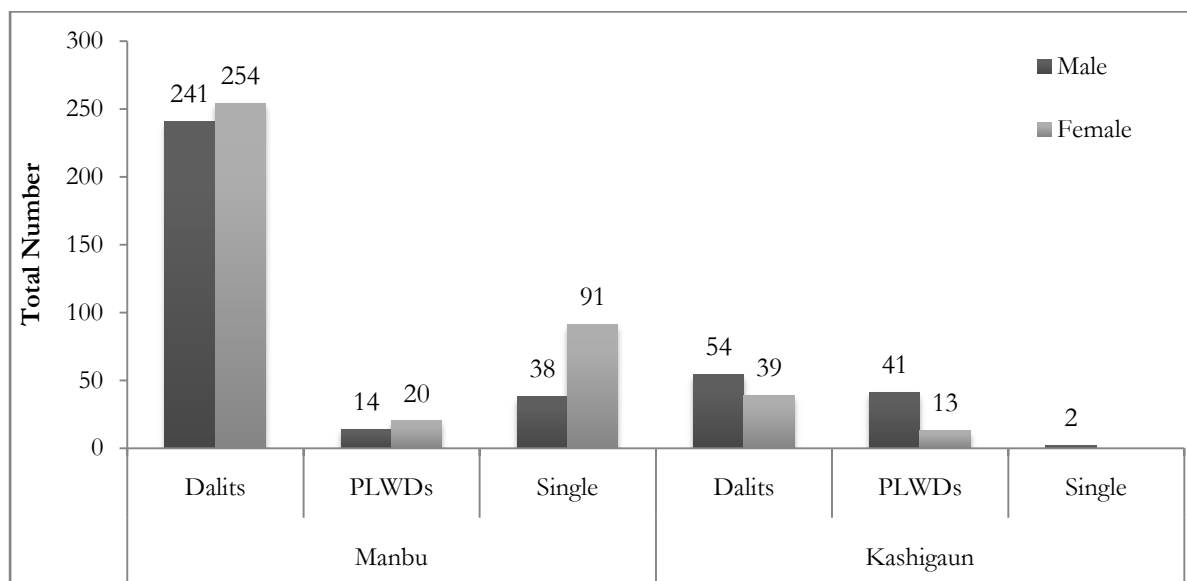


Figure 5.10: Total number of *Dalits*, PLWDs and Single men/women in selected VDCs in Gorkha, 2015

In the case of the WASH sector, PLWDs had high access to safe drinking water in Manbu compared to that in Kashigaon as shown in Figure 5.11. Similarly, there were more PLWDs friendly temporary shelters in Kashigaon as compared to in Manbu as shown in Figure 5.12. Living in temporary shelters was found to be challenging especially for PLWDs, women and children because of the various difficulties related to safety, security and comfort. Women have had difficulty in cooking food in the temporary shelters due to indoor smokes and occasional

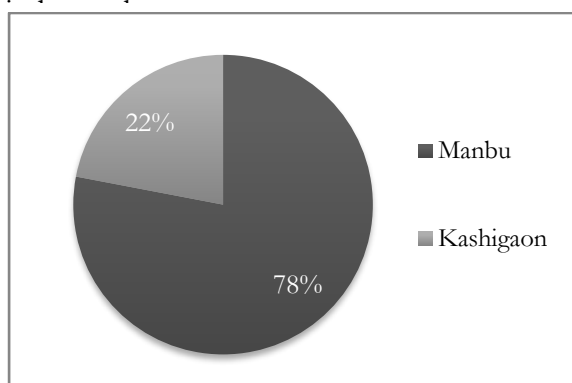


Figure 5.11: PLWDs access to safe drinking water in selected VDCs in Gorkha, 2015

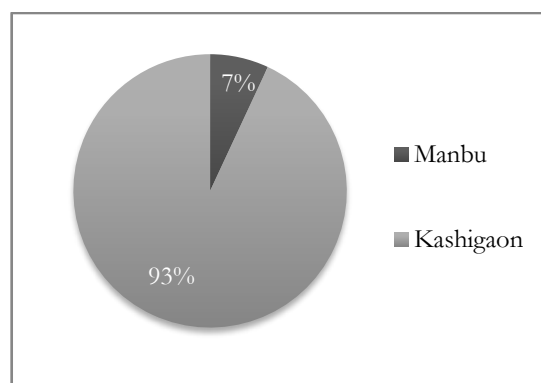


Figure 5.12: PLWDs friendly temporary shelter in selected VDCs in Gorkha, 2015

Nursing mothers and pregnant women and children lacked balanced and nutritious food, safe drinking water, warm shelter, as well as lack of delivery services which had serious concerns relating to maternal health. Apart from lack of nutritious food, women and children were facing various health and security related problems in the temporary shelters in both Manbu and

Kashigaon. Women's access to food as compared to men was not limited. Discrimination based on gender was not seen in relation to relief distribution in both VDCs.

Women's involvement in the tourism sector was absent in both the VDCs, which revealed that women did not possess any alternate livelihood options other than domestic chores. Women were found to have been given emphasis for humanitarian response in both Manbu and Kashigaun. They have also been facing effects of damage to infrastructure such as increase in work load as well as in the time and distance required to reach forest and water sources, socio-economic insecurity, psychological trauma, problems related to sanitation and care of children etc.

## **5.6 Recovery Needs**

Based on the findings of the post earthquake needs assessment, the fundamental needs of the communities were identified for the recovery phase. Recovery needs prioritized and recommended by the affected communities' of selected VDCs of Gorkha on different sectors have been determined for each VDC as shown in Table 9.

**Table 9: Recovery needs identified by the communities of selected VDCs in Gorkha, 2015**

<b>VDCs</b>	<b>Social</b>	<b>Economic</b>	<b>Physical</b>	<b>Cross-Cutting</b>
Manbu	<ol style="list-style-type: none"> <li>1. Reconstruction of health-posts and sub-health posts for immediate treatment in case of any emergency</li> <li>2. Awareness programs on WASH</li> <li>3. Health volunteers and first aid kit in each ward</li> <li>4. Provision of dustbins and temporary toilets</li> <li>5. Displacement of population to a safer place</li> <li>6. Water purification techniques</li> </ol>	<ol style="list-style-type: none"> <li>1. Provision of fast growing vegetables to fulfill demand of foods</li> <li>2. Trainings on new crops varieties that grows fast</li> <li>3. New and scientific way of farming and livestock rearing for increasing their production</li> </ol>	<ol style="list-style-type: none"> <li>1. CGI sheets for construction of temporary shelter</li> <li>2. Clearance and maintenance of damaged and blocked foot trails and roads</li> <li>3. Maintenance of damaged irrigation canals and wooden bridge above Dodare Khola for students to commute</li> <li>4. Community buildings in each community</li> </ol>	<ol style="list-style-type: none"> <li>1. Nutritious food, proper care and security for children, women, PLWDs and elderly</li> </ol>
<b>Kashigaun</b>	<ol style="list-style-type: none"> <li>1. Maintenance of damaged water sources</li> <li>2. Educational and other necessary materials for running the schools</li> <li>3. First-aid training and first-aid kits</li> </ol>		<ol style="list-style-type: none"> <li>1. Construction of earthquake resistant shelters, school buildings, and sub-health posts</li> <li>2. Clearance of the blocked roads and maintenance of the foot trails</li> </ol>	

**Glimpses of the impact of the earthquake, relief support and Needs Assessment in Gorkha, 2015**



**Figure 13: Earthquake induced landslides in Kashigaun, Gorkha, 2015**



**Figure 14: People carrying relief materials provided by TMI, Manbu, Gorkha, 2015**



Figure 15: People rebuilding their houses in Manbu, Gorkha, 2015



Figure 16: On-ground needs assessment by Social Mobilizers in Gorkha, 2015

## 6. Conclusions

This needs assessment report is an attempt to provide an overview of the extent of the impacts on various sectors that in any ways affect the livelihood of the people and the needs prioritized by the community themselves to recover from the impacts. The findings from the needs assessment revealed that the communities are in a terrible need for livelihood alternatives to restore their lives. It was found that disadvantaged groups representing poor, nursing mothers and pregnant women, infants, children, elderly, PLWDs, single men and single women, *Dalits* and other marginalized ethnic groups required extensive support in recovering from the impact of the devastating earthquake. Some of the broad concluding thoughts from this Needs Assessment carried out by TMI with support from the local NGO Partners are presented below.

**Priority concerns - reconstruction of shelter:** For the recovery and reconstruction needs, the key concern of the communities in all three districts was permanent housing reconstruction with structural resilience and the clustering of displaced and dispersed communities in safe locations either within their own VDCs or elsewhere. The reconstruction of shelter/housing needs to take into consideration resilient rebuilding of settlements and the vulnerability of the location.

The reconstruction policies and guidelines related to rebuilding shelter such as new building codes, loans provided by the government, support being provided by I/NGOs needs to incorporate the issues related to geographical difficulties, availability of local resources, disadvantaged groups such as senior citizens, single men and single women, PLWDs, women headed households, *Dalits* and other marginalized ethnic groups in the communities that have been hit hard. Also, the information on recovery and rebuilding policies, eligibility criteria, means of accessing the subsidies, should be disseminated; specially support should be provided to vulnerable households to access this information. Moreover the partially damaged houses also need to be equally prioritized as these houses would be more vulnerable to aftershocks and future earthquakes. GoN has also proposed to facilitate the reconstruction process through materials, technical, financial rather than taking control over the reconstruction process (GoN, 2015).

**Diversified and resilient livelihood options:** The agriculture sector was found to be the most severely affected followed by the tourism sector. Damage to agricultural land, stored seeds, agricultural tools, irrigation infrastructures, lack of fodder, livestock mortality was accounted in agriculture sector while, destruction of, and damage to cultural heritages, tourism infrastructure and services affected the tourism sector. The damage in livelihoods sector might be considered as an opportunity to create new jobs and employment. Productive and income generating activities of the earthquake survivors need to be recovered and new dimensions could be introduced so as to support the rebuilding of livelihoods that are resilient to future disasters and shocks. Out-migration might increase dramatically if the survivors suffer from lack of livelihood options.

For the recovery of the livelihood sector, diversified and sustainable livelihood options was prioritized by the communities of three districts - vocational trainings, skill development, employment opportunities, provision of quality seeds and live stock breeds, low interest financial support for microenterprises, rehabilitation of damaged cultural heritages, infrastructure reconstruction and maintenance, were some of the ideas they presented. Focus should be given to the poor, female headed households, single men/women and PLWDs.

**Infrastructure – tool for development:** The damage to local infrastructures caused by the earthquake has isolated these remote mountain communities even more, affecting their socio-economic development and their quality of life. Roads, electricity, communication, water sources, toilets, schools, markets, bridges, government buildings, health posts, micro-enterprises, foot trails, age old cultural monuments etc. were heavily affected by the earthquake in all these communities. The damages have further worsened in the post-earthquake scenario through disrupted mobility and livelihood activities, lack of access to education and health related services, sanitation and hygiene maintenance, cultural activities, governmental services and much more. The reconstruction and maintenance of destroyed infrastructure based on the risk assessments and situation analysis was prioritized for the recovery phase. This reconstruction of infrastructures such as houses, government buildings, schools, toilets should also be PLWDs friendly. Small-scale rural infrastructures such as buildings for crop storage, community buildings were also the priority needs of communities.

**Gender equality and social inclusion:** In many respects the earthquake affected all – men, women, children, rich and poor. Yet, as in many other disasters, women and children were affected more; except in Kathmandu valley, more women were killed during this disaster compared to men. The pre existing poverty, exclusion, discrimination and inequality – factors that made specific groups vulnerable in the first place – also had a great affect on their ability to respond to the disaster and to recover from it. These groups – poor and single women, people from historically, socially discriminated caste and ethnic groups, PLWDs, the elderly, and young children– continued to be affected by their inability to take up opportunities that are dependent upon ownership and access to economic resources. Their inability to influence community and public decision making processes will also have an effect on how well they are able to influence the recovery processes and the resources that will be distributed.

In post-earthquake period, the time required for productive, reproductive and community work for women have greatly increased especially for female-headed households. Destruction of infrastructures such as trails and drinking water systems have increased time required to collect water for household needs. For single women and the elderly, construction of temporary shelters has been problematic since they are not able to do it themselves and everyone in the community was busy with their own recovery burdens.

Thus the principles of gender equality and social inclusion needs to be taken into serious consideration in the recovery and reconstruction of in each and every sector - social, productive and infrastructure as well as in the decision making and recovery processes. Women were found to have been involved in reproductive works such as households work chores and low involvement in productive works compared to men from this study. Access to information, monitoring and surveillance, community awareness, provisioning of livelihood options, psycho-social support and counseling are some of the needs to be addressed. Women, *Dalits* and other marginalized ethnic communities must be given priority for cash-for-work and/or food for work programmes such as debris clearance, infrastructure rebuilding etc. The recovery phase must be directed in a way which could strengthen such discriminated and disadvantaged groups so that they are not further marginalized and deprived from opportunities to improve their lives and livelihoods.

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