

Langtang Valley Assessment, Nepal

Langtang Valley, May 2015

REACH An initiative of
IMPACT Initiatives
ACTED and UNOSAT

SITUATION OVERVIEW

INTRODUCTION

The Langtang Mountain Valley was severely affected by the two major earthquakes that struck Nepal on 25 April and 12 May 2015. Despite significant media coverage regarding the damage, loss of life and large scale evacuations of the affected populations in such areas,¹ little comprehensive information exists about current access to the valley and nor the priority interventions required to restore access and community life within these areas.

With monsoon season imminently approaching, the humanitarian community has a two week window for intervention before the area is cut off for several months. REACH conducted a rapid assessment to understand current access constraints, needs and intentions, in order to inform priority interventions. Primary data was collected through an observational transit walk in the Langtang Valley, and complemented by community group discussions with displaced households from communities throughout the valley. This situation overview presents key findings from the assessment, providing contextual

information on the situation in the Langtang Valley prior to the earthquakes, evaluating the impact of the disaster on communities across the assessed area, and describing priority reported needs in the coming weeks and months.

With small numbers of individuals reportedly planning to return to the valley before the start of the monsoon, this report is intended to provide an operational guide to inform the provision of humanitarian assistance in the short and medium term and to provide an indication of challenges in other affected high-mountain areas.

SITUATION PRIOR TO THE EARTHQUAKES

GEOGRAPHIC LOCATION AND ACCESS

The Langtang Valley is situated in Rasuwa District, north of Kathmandu. As a popular tourist trekking area, no roads existed within the valley. Primary access to and within the valley was provided through trails, normally used by porters and mules.



Map 1: Location map of Langtang Valley

1. See for example, *The Guardian*, "Nepal earthquake: the village wiped off the map in a few terrifying seconds", 17 May, 2015 available at: <http://www.theguardian.com/world/2015/may/17/nepal-earthquake-langtang-village-everyone-was-dead>; *BBC News*, "Destruction of Langtang, Nepal" 4 May 2015, available at: <https://www.youtube.com/watch?v=9BEDRfImD8>

METHODOLOGY

The Langtang Valley was selected for assessment based on reports of severe damage and due to the lack of comprehensive information about access, damage and needs. Like other high-mountain valleys in the earthquakes affected districts of Gorkha, Dhading, Rasuwa, Sindulpochock and Doloahka, the Langtang Valley presents high relief and very difficult to access terrain.

This situation overview builds on primary data collected in two main ways. To provide an overview of the situation of the Langtang Valley, an observational transit walk was conducted by a trained team of assessment specialists between 22-24 May 2015. It focused on gaining an understanding of this complex terrain, and verifying reports of damage to shelters and services. Where possible, indicators were aligned with those used for an ongoing Shelter Cluster assessment of 14 affected districts, also conducted by REACH, in order to produce comparable data.

To complement the observation data, community group discussions and Key Informant (KI) interviews were conducted with households who had been displaced from the Langtang valley. This data was collected on 27 May in displacement sites in Kathmandu, where many households evacuated from the Langtang valley are currently staying.

By combining observation data with reported needs from KIs, the aim of this assessment was to inform a better understanding of access and needs in the Langtang Valley, as well as to produce an operational valley guide to be used in other similar earthquakes affected areas.

POPULATION AND COMMUNITIES

Prior to the earthquakes, an estimated population of 668 individuals lived in the Langtang valley, stretching from Shyaphrubesi in the west, to Kyangjing Gumba, in the east. Langtang Village was the largest settlement in the valley, with a pre-crisis population of approximately 400 individuals, mostly from the Tamang caste of Tibetan origin, according to key informants from the valley.²

It was reported that over the past three decades, populations had migrated further east to the Kyanjin Gumba, and west towards Shyaphrubesi due to the area's popularity as a tourist destination. Therefore, the higher altitude areas around Langtang and Kyanjin Gumba villages (approximately 3400-3800 metres in altitude) were the most heavily populated parts of the valley.

The flatter glaciated valley bottom supported the higher concentration of dwellings in Langtang village. Further west along the valley towards Shyaphrubesi, the valley sides become increasingly steep, with access to flatter ground for building or even helicopter landing becoming increasingly difficult.

SERVICES

Langtang Village was reported to serve as the major community hub in the valley, hosting a primary school up to grade 5 level, some medical facilities and also bases for army and police posts.

Mundu Village was also reported to host a small school with only 3 classes.

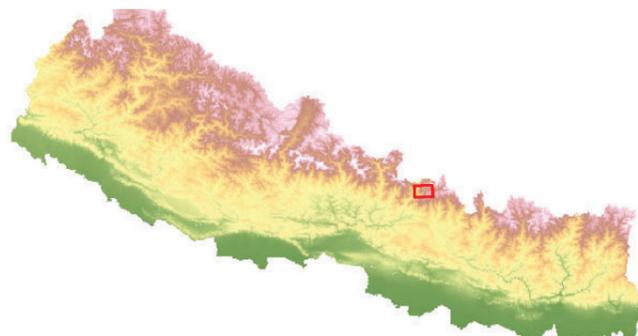
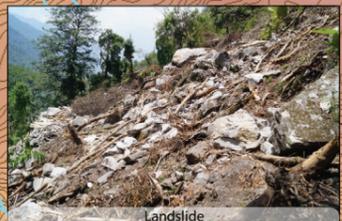
Prior to the earthquakes, supplies entered the valley from the west through Shyaphrubesi. From here, goods were transported along the valley using porters and mules, with footpaths the only means of transporting goods into the valley.

LIVELIHOODS

According to KI interviews and community group discussions, the main source of income within the valley was related to tourism, which prior to the earthquake was estimated to account for 90% of the valley's income prior to the earthquakes. The remaining 10% of income included animal husbandry, cheese production, and informal work.

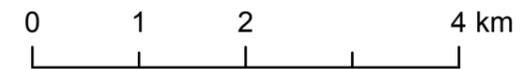
Different livelihood activities were reported to provide different levels of income. Richer families were more likely to be working in tourism, which also required higher levels of education. While some wealthier families were reported to engage in animal husbandry, this was more common among poorer households. Other commonly reported livelihood activities for these households included daily labour, the collection of firewood, and cleaning.

2. Reported figures are significantly higher than the latest available census data for Langtang Valley VDC, which gave a total population of 415 individuals in 2011. This is likely to be due to natural population increase, and due to the fact that not all of the perceived area of the valley falls within the VDC.



- Observation Trail
- 🏠 Observed Village
- 🚧 Damaged Bridge
- 🟢 Functional Bridge
- 🚁 Helicopter Pads

- Area of required debris removal
- Areas of Rockfall / Landslide
- Altitude (m)
 - High : 8791
 - Low : 1500



Data sources:
Field Data: REACH Field Teams
Administrative Boundaries: OCHA
Population: Central Bureau of Statistics (Govt of Nepal)
Coordinate System: GCS WGS 1984
File: REACH_NPL_Map_LangangValley_27May2015_A3
Contact: reach.mapping@impact-initiatives.org

Note: Data, designations and boundaries contained on this map are not warranted to be error-free and do not imply acceptance by the REACH partners, associated, donors mentioned on this map.

IMPACT OF THE EARTHQUAKES

The Langtang Mountain Valley area was severely affected by the earthquakes and tremors occurring from 25 April to 12 May 2015, which caused large scale destruction, landslides and avalanches, resulting in heavy damaged or the complete destruction of the majority of structures.

DISPLACEMENT

Out of the 668 people reportedly living in the valley area before 25 May, 180 individuals (around 30% of the total valley population) were reported to have been either killed or missing.

The surviving population was evacuated by the Nepal Army, Armed Police Force and Nepal Police, who carried out extensive rescues of stranded tourists and villages within the area after the two events. At the time of the assessment, all of the surviving 488 people had left the valley, most residing in Kathmandu in displacement sites.

IMPACT ON VALLEY COMMUNITIES

LANGTANG VILLAGE

Langtang village, constructed predominantly of stone masonry with no mortar bonding and either corrugated galvanized iron (CGI) or straw/thatch roofing, was largely buried by a landslide approximately 1km wide, that originated from the

glacier and snowfields on the northwestern slopes above the village.

Structures within the village had been completely destroyed, with almost all shelters exhibiting visible damage from shaking, or covered by landslide debris. The assessment team estimated that around 20-30% of the debris from the village may be salvageable.



Picture 1: Debris from damaged houses in Langtang Village

Large pools of water were observed within areas of the village, indicating either broken or blocked water infrastructure. There was no sign of any rebuilding, nor of the construction of temporary or makeshift shelters. The entire population of the village had left by the time of assessment, with few signs that construction materials had been stored for use at a later date.

While no people were present at the time of assessment, some livestock were observed in the immediate surroundings of Langtang village, although others had visibly perished in the earthquake. Major damage to hotels was also evident.

GUMBA VILLAGE

Gumba Village, located to the west of the Langtang mudslide, consisted of approximately 15-20 houses/structures that had been totally destroyed by the earthquakes and resulting mudslides. At the time of assessment, no households remained, with no visible potential to salvage materials.

Despite the massive devastation, there were small signs that members of the population had remained at the site in the immediate aftermath of the earthquake, living in the open. It was assumed



Picture 2: Large scale mudslides in Gumba Village

that this was a temporary coping mechanism prior to evacuations, which took place between 26 April and 13 May.

CHYAMKI VILLAGE

Chyamki, a small village of approximately 15-20 structures, was less affected by landslides than Gumba and Langtang villages, but showed major damage from shaking from the earthquakes.

As a result, it was observed that 50% of the debris may be salvageable for reuse. Non-food items, such as cooking pots, had been placed in the shelter of boulders, indicating a desire to protect items for future return.

GHODATABELA VILLAGE

This village had clear damage from the earthquake, with approximately 50% of the structures damaged. Ghodatabela served the community in terms of having functional helicopter landing zones and army base.

DAMAGE TO SERVICES

The mudslides, landslides, earthquake impacts have completely destroyed all services in the valley, such as the schools, medical centers, communication networks and power network.



Picture 3: Helicopter landing strip in Ghodatabela Village

ACCESS CONSTRAINTS

The major obstacles inhibiting access to the valley are mudslides, rock fall, and landslides. Debris, caused directly by the earthquakes as well as by landslides and mudslides, has damaged or blocked access routes and brought down communications systems.

The nature of obstructions is dictated by the geography of the valley, with large scale glacial mud or landslides more common in the upper alpine areas, and rock fall, path collapse and forest debris more common in the steeper, forested parts of the valley. Any strategy for the clearance of debris and repair of paths will therefore need to take into account these differences.

In the higher altitude parts of the valley, large scale mudslides have completely covered the area, depositing fragmented unstable sediment, with the largest mudslide covering approximately 1km wide between the villages of Gumba and Langtang.

With glacial streams flowing into the debris covered area, and no signs of pooling, it can be assumed that the river continues to flow beneath the debris. In addition to the loose fragmented ground from the mud cover, this makes the land increasingly susceptible to collapse and dangerous to cross.

As the valley becomes steeper, more frequent rock fall and smaller landslides create the largest access problems, at points fully removing the footpath from the side of the valley and leaving a sheer drop to the valley floor over 30 metres below. Crossing and clearance of the valley in these areas will therefore be extremely difficult and dangerous in such places.

The severe loss of access due to footpath collapse, obstruction by landslides, mudslides, rock fall and forest debris currently makes any form of overland assistance impossible. Thus, helicopter support would be the only possible modality for provision support for community recovery until footpaths are repaired or rebuilt.



Picture 4: Damaged footpaths

HUMANITARIAN NEEDS

CURRENT SITUATION

Areas affected by landslides and mudslides were observed to have suffered serious damage with large scale excavation required to clear land, and rebuild structures. In the most hard hit areas, the damage and debris cover were so extensive that almost all shelters and household were observed to have been buried or completely destroyed.

All of the remaining population had been evacuated from the valley at the time of assessment, leaving no immediate humanitarian needs in the area.

Based on key informant interviews and community group discussions conducted in the Kathmandu displacement sites, 100% of the displaced

population were reported to intended to return to the Langtang valley.

Despite this, representatives of the displaced communities reported that they would not all return at once, with the per-conditions for return and time frame closely linked to livelihoods.

EARLY RETURN

It was reported that the residents involved with keeping livestock (Yak farmers) intended to return to the valley within the next two weeks, prior to the upcoming monsoon season.

Yak farmers, accounting for approximately 10% of the displaced population, intended to return to look after their animals. With usual supply routes to Shyaphrubesi likely to be blocked until at least after the upcoming monsoon season, these farmers will need temporary shelter and food supplies until September, in order to last the monsoon season.

LATER RETURN

The remaining population (90% of the total valley's population) would reportedly return after the monsoon season, from September 2015 onwards. While medium term needs relate to the return of these individuals, longer term ones envision reconstruction.

Debris clearance and food provision constitute

necessary conditions for return. Through interviews conducted with KIs, it was reported that the greatest need for the rehabilitation of the valley was the restoration of the footpaths/roads, shelters and electricity networks.

Full reconstruction of buildings, hotels and grazing demarcations will be required in hard hit areas.

It was reported that the residents would build back their homes using the same methods as before, as they associate the loss of life and damage more with the mudslide from the glacial out wash than the direct impact of the earthquakes. Therefore, appropriate site location to rebuild the community appeared to be of greater concern than the building materials used for their houses.

PRIORITY INTERVENTIONS TO FACILITATE ACCESS

Clearance of trails between Ghodatabela and Chymaki would be relatively straight forward procedure since the pathway was only peppered with small rock fall, forest debris and some minor wall collapse. This trail rehabilitation would re-open the eastern part of the valley until the eastern mudslide of Thyangsyap.

West from Ghodatabela towards Thomma and eventually Shyaphrubesi, access becomes very difficult to almost impassable with the steep sided

valley and large segments of the path missing due to landslides and rock fall. The only possible way to clear the land was reported through manual labor and most likely will start after the monsoon season according to local interviews conducted in Shyaphrubesi.

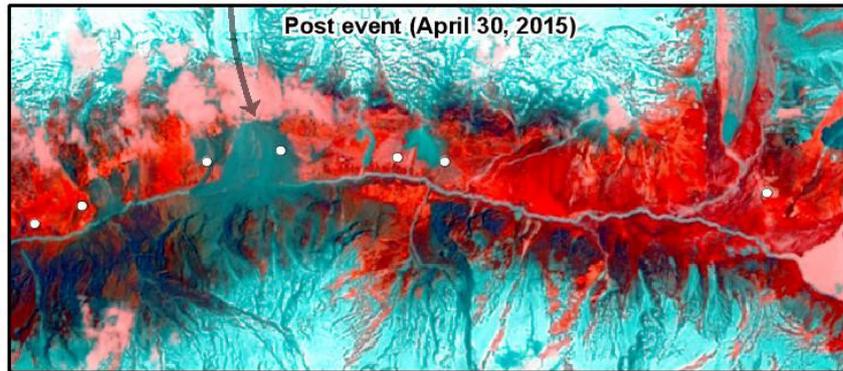
Once the monsoon season is over, priority interventions to restore and repair footpaths would have wide-reaching impacts. Such interventions would allow the transport of materials and labour support reconstruction in the valley, as well as facilitating the reconstruction of the tourism industry, which is the primary income source in the valley.

About REACH Initiative

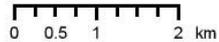
REACH facilitates the development of information tools and products that enhance the capacity of aid actors to make evidence-based decisions in emergency, recovery and development contexts. All REACH activities are conducted through inter-agency aid coordination mechanisms. For more information, you can write to our in-country office: iraq@reach-initiative.org or to our global office: geneva@reach-initiative.org.

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Annex: Satellite analysis of landslides in the community areas of Langtang Valley



Landsat 8
RGB=643



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