Assistance in reconstruction
after the Badakhshan earthquake.

Impacts on displacement and labour mobility in the Pakistani Hindu Kush Mountains.

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Introduction

"Though I live in a tent but I come here every day and sit on rubble of my house. I still feel it and am confident that my sons will rebuild this for me again."

Ms. Gul Nara, Phander, Ghizer District, Gilgit-Balistan, FOCUS, November 2015.

"Pakistan is home to some of the most resilient people I have met; people who have not lost courage and hope in the face of adversity despite having to overcome tragedy and rebuild their lives time and time again. My colleagues and I are confident that they will persevere on this occasion - and we stand ready to support them as they do."

Neil Buhne, Humanitarian Coordinator and UNDP Resident Representative in Pakistan, OCHA, October 2015.

In his statement on the 7.5 magnitude Badakhshan earthquake that struck Pakistan and Afghanistan on 26 October, the UN Resident and Humanitarian Coordinator in Pakistan paid tribute to the Pakistan people's historical resilience to tragedy. Echoing Neil Buhne's words, Ms. Gul Nara, whose house was one of the 500 that collapsed in the Ghizer District of Gilgit-Balistan, highlights the perseverance—even confidence, of Pakistani people in their capacity to recover from disasters.

Although this dialogue rightly suggested that Pakistani livelihoods are particularly prone to diverse tragic phenomena, such as the earthquake on 26 October, it appears to omit the migratory dimension of such phenomena, which often remains hidden behind the strong attachment of the Pakistani to their native area, as shown by rapid reconstruction and recovery in disaster-affected and disaster-prone sites.

Frequent natural hazards such as earthquakes, floods and debris flows, glacier lake outburst floods, and avalanches, are responsible for a large part of what Neil Buhne describes as "tragedy". Since 2010, floods in Pakistan have damaged about 3 million houses and displaced 17 million people. Today, 1.2 million internally displaced persons (IDP) remain in northwestern Pakistan, displaced by complex cumulative and overlapping emergencies (IOM, 2016). This migratory context contrasts with the immediate humanitarian assistance prioritizing the delivery of shelter (tents) and non-food items (NFIs) in the Chitral, Upper Dir and Swat Districts, where estimates of damaged houses reach 47,810 damaged houses, making Khyber- Pakhtunkhwa one of the most affected provinces in Pakistan (PDMA, 2016).

This paper seeks to study the relationship between humanitarian assistance (preparedness, emergency response and recovery programs) and post-disaster mobility: how have government and international humanitarian assistance affected access to mobility for the Pakistani Hindu Kush mountain populations affected by the October 2015 earthquake?

The paper focuses on the Hindu Kush mountain populations affected by the earthquake on 26 October living in the Pakistani Chitral, Upper Dir and Swat Districts, in the Khyber—Pakhtunkhwa province of Pakistan. It begins with a narrative of the events on 26 October, an assessment of the context of natural hazards and disasters in the year 2015 and a presentation of humanitarian challenges for government & international organizations. It then analyses the diverse migratory dimensions of the Pakistani Hindu Kush mountain areas to show that the population of Chitral, Dir Upper and Swat districts, situated at the junction of a diverse vulnerabilities, rely on temporary labour migration as a livelihood strategy A third section (a) analyses the impact of the need for immediate reconstruction on displacement and its temporal & spatial scales; it then (b) examines humanitarian assistance for on-site reconstruction as a promotion of both immediate immobility and access to further labour mobility. The section then (c) reviews the shortcomings of the response of the government and district authorities, in that it created inequalities in the access to reconstruction, the quality of reconstruction, and access to further labour migration. The final part draws general conclusions on the complex context of labour migration in the Pakistani Hindu Kush mountains.

The government and districts authorities' response appeared to mimic the earthquake's effects. By focusing on immediate reconstruction, humanitarian aid-delivery (i) favored immediate immobility and (ii) temporarily shortened the distances and duration of labour migration, in an area where livelihoods usually rely on temporary labour migration. The governments' inadequate compensation policy and aid-delivery created uneven access to reconstruction, hence restricting the prospects of further labour migration. In a risky disaster-prone region where populations rely on labour migration for livelihoods, immobility remains a reality.

The 26 October 2015 Badakhshan earthquake in the context of 2015 natural disasters: a heavy toll and humanitarian challenges

The year 2015 in Pakistan: the heavy toll of natural disasters, and the formation of complex humanitarian challenges.

The 26 October earthquake that struck the Badakhshan province of Afghanistan and affected the Pakistani populations living in the Hindu Kush mountainous region should be viewed in the context of recurrent natural hazards affecting the region, which is particularly prone to hazards such as earthquakes, avalanches, landslides, and other hazards directly related to the climate, such as monsoon floods and droughts.

In both mountainous Afghanistan and Pakistan, natural hazards in 2015 turned into real disasters since they affected vulnerable mountain populations.

On 26 April, a "mini-cyclone" struck Peshawar city and the Khyber—Pakhtunkhwa province, causing the death of 49 people. In July 2015, 100 events of floods and debris flows, and glacier lake outburst floods affected 90 villages in less than 20 days, damaging 80% of Chitral District's infrastructure, resulting in 10,000 new IDPs and leaving 300,00 people stranded, as access roads and bridges were eroded or destroyed. As suggested in reports, many houses in northwestern Pakistan were affected by both flash floods and the October earthquake. Among those houses damaged by the July floods, some collapsed due to the earthquake on 26 October. This made it difficult for humanitarian assistance to distinguish between those populations affected by flash floods and the earthquake (FOCUS Pakistan, 2015).

Between January 2015 and May 2015, a total of 50,000 persons were displaced in 21 Afghan provinces by diverse events, such as heavy snowfall, avalanches, floods and landslides. This exacerbated the natural disaster, with the affected total population in need reaching 235,000 as of September 2015, of which 80,000 were located in the northeastern province of Afghanistan, Badakhshan (IOM, 2015; OCHA, 2016). In Badakhshan, heavy rainfall and snowfall increased the risks of landslides during the three days before 26 October.

Although it occurred soon after the anniversary of the terrible Kashmir earthquake that killed thousands of Pakistanis in October 2005, the 26 October 2015 earthquake occurred in close proximity to the 5.9 magnitude earthquake that struck Badakhshan province on 23 November 2015 and damaged houses in Zebak and Shignan districts, as well as with the 6.2 magnitude earthquake that affected the Afghan Hindu Kush region on 25 December 2015, damaging 16 houses (OCHA, 2015).

The year 2015 was thus particularly notable in terms of natural hazards striking the vulnerable Afghan and Pakistani communities living in the Hindu Kush mountain range. These disasters are expected to increase in intensity and frequency as a result of climate change (PDMA, 2016). The 26 October earthquake must be viewed in the context of complex cumulative emergencies induced by frequent disasters, both sudden- and slow-onset.

A narrative of the 26 October Badakhshan earthquake in Pakistan

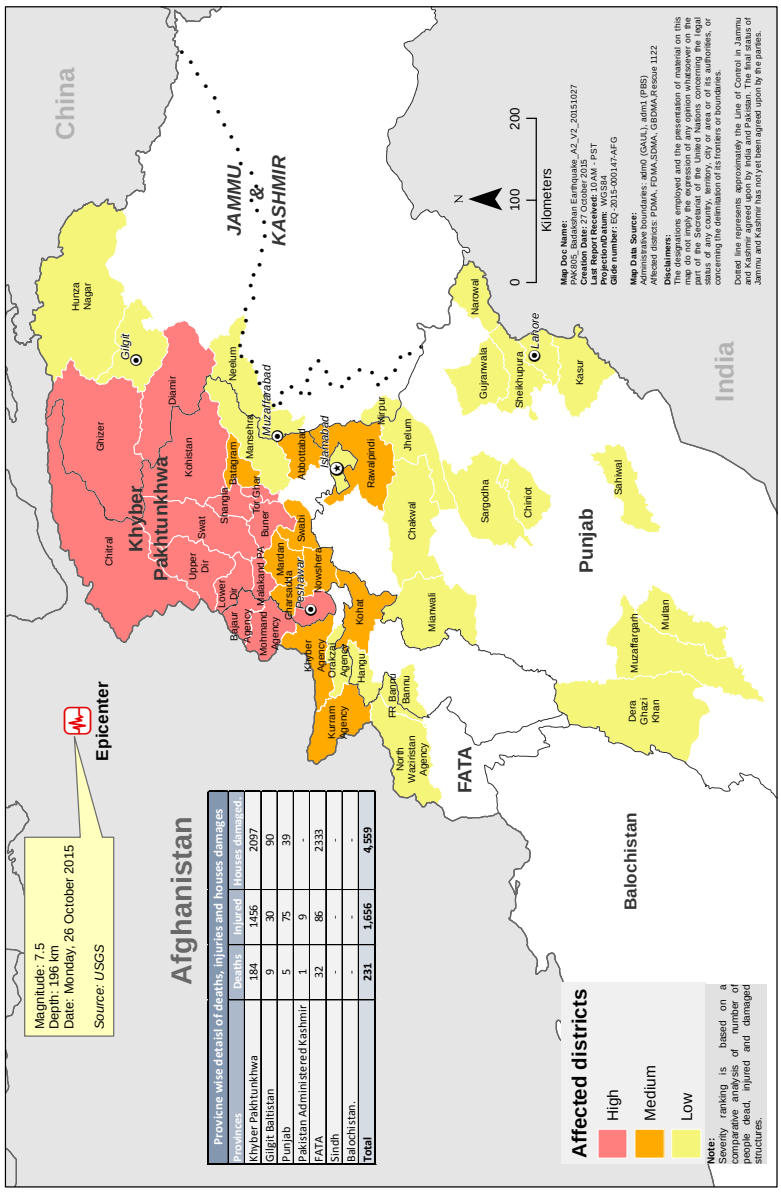
On 26 October 2015, at 9:09 UTC, while cattle were out grazing in the beginning of the afternoon in the northwestern Hindu Kush mountains of Pakistan, an earthquake of magnitude 7.5 on the Richter scale occurred, centred about 200km under the surface of Jurm District in Badakhshan province, in northeastern Afghanistan. The depth of the epicentre, more precisely situated 82km away from Fayzabad, capital of Badakhshan, limited damage since it allowed for the diffusion of the tremors before reaching the surface. The earthquake was felt in all Afghan provinces, but brutally affected the Badakhshan and Khyber-Pakhtunkhwa populations living in the Hindu Kush mountain range. Tremors were felt as far away as India, killing 4 people in Srinagar, triggering panicked scenes and created cracks in buildings in north Kashmir, and leading the New Delhi authorities to evacuate public offices and schools.

Deaths, injuries, and damage to private and public infrastructure in Chitral, Dir Upper & Swat Districts

The toll was much heavier in Pakistan than Afghanistan, particularly for populations living in the Hindu Kush Mountains of Badakhshan and Khyber—Pakhtunkhwa. The national government, district authorities and representatives, working in close cooperation with international humanitarian agencies, launched initial assessment missions as early as the evening of 26 October, in order to assess the damage, humanitarian needs and gaps to be addressed. Although assessment teams met with difficulties when trying to reach remote mountainous areas, against the backdrop of conflict insecurity and the coming harsh winter conditions, they progressively collected precise data on death, injuries, and damage to infrastructure and livestock, covering most of the areas affected by the earthquake in the Hindu Kush mountains.

The 26 October earthquake affected 16 of Afghanistan's provinces (OCHA, 2016). Although local authorities initially reported 5,700 affected families, 105 deaths and 405 injuries, the International Organization for Migrations (IOM) in Afghanistan, had assessed 14 provinces and 17,288

Map 1. Affected districts in Pakistan (as of 27 October 2015).



Source: OCHA, 2015.

families as of 5 November 2015, with 102 deaths, 487 injuries, 10,165 houses destroyed and 6,547 partially damaged houses (IOM, 2015). By the end of December, the UN Office for the Coordination of Humanitarian Affairs (OCHA) reported that the earthquake had completely or partially damaged 18,600 houses, leaving 130,100 people required humanitarian assistance in Afghanistan (OCHA, 201).

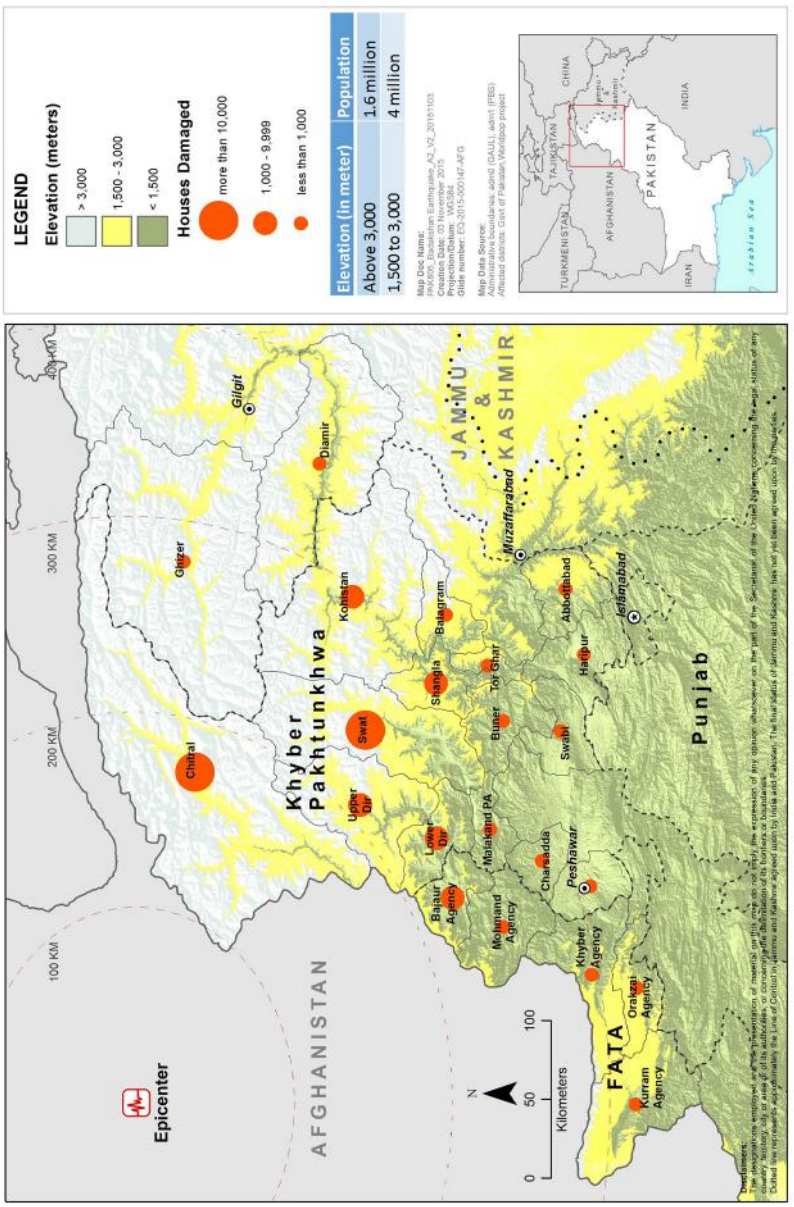
In Pakistan, the Federally Administrated Tribal Areas (FATA), Gilgit—Balistan and Khyber—Pakhtunkhwa provinces were the most affected. As of 4 November, the estimated number of damaged houses reached 94,548, while 30% of Khyber—Pakhtunkhwa populations were reported to be affected by the earthquake (NDMA, 2015). Damage in Chitral district was significant, and 34 people died due to rock falls (FOCUS Pakistan, 2015) and 18,000 houses were reported to be damaged (NDMA, 2015). 8 valley roads and bridges were destroyed or eroded, while many schools buildings, health facilities, shops and irrigation water systems collapsed or sustained significant damage. In both Chitral District and Giglit-Balistan province, 1,200 cattle sheds collapsed, burying winter stocks of fodder for livestock. Cattle loss was limited since the earthquake occurred when they were out for grazing (FOCUS Pakistan, 2015). The earthquake affected the Dir Upper and Swat Districts in a similar fashion, with 16 and 36 deaths, and 16,352 and 12,159 damaged houses, respectively.

Northwestern Pakistan and Hindu Kush mountain populations at the junction of vulnerabilities.

Geography, climate and population distribution in Chitral, Upper Dir and Swat Districts.

Chitral, Upper Dir and Swat Districts, which constitute the geographical scope of the present study, all show specific common geographical features: they are districts touched by the Hindu Kush Mountain range which plays a great role in the region's population distribution. The districts affected by the 26 October earthquake are located in northern and central Khyber—Pakhtunkhwa and in eastern Gilgit—Balistan. They are together home to 4 million people living at an altitude ranging between 1,500 and 3,000 meters. 1.5 million people live at and above an altitude of 3000 meters (OCHA, 2015). The land in these three districts is covered by rocks, forest and in much greater proportion by glaciers. The winters are especially harsh and long in northwest mountainous Pakistan: negative temperatures, heavy snowfall and the increasing risk of avalanches and land-slides cause the closure of

Map 2. Population by elevation in affected areas.



Source: OCHA, 2015

the main roads connecting Chitral Districts to the rest of the country, such as the Lowari Pass.

Populations living in the Hindu Kush range in Chitral, Upper Dir and Swat Districts hence also share common vulnerabilities. They all experienced the direct impact of the earthquake, which was particularly damaging in northwestern mountainous areas, and the humanitarian assistance delivered. As shown by the OCHA map below depicting the elevation and the number of houses damaged per district, the vulnerability of buildings to the earthquake seems to go hand in hand with elevation and remoteness.

Temporary labour migration as a lifestyle: the diversity of migratory patterns.

The particular geographical and climate conditions of the Hindu Kush Mountain range in Pakistan, which lead to the degradation of resources and food insecurity, offer limited livelihood options and encourage diverse labour migratory patterns.

If labour migration from the Hindu Kush highlands appears to be an old phenomenon, the context and drivers of temporary labour migration have significantly evolved over time. The dynamic demographic growth of mountain populations, the resulting pressures on arable lands, the highlands' lack of employment and limited agricultural productivity, and the lowlands' significant employment opportunities have long driven the inhabitants of the highlands to look for temporary employment in lowland urban areas, or to permanently settle elsewhere. Seasonal cattle grazing has also been a historical driver of temporary labour migration (Olimova and Olimov, 2007). Today's widespread internal and international mobility is a phenomenon that also applies to the Hindu Kush mountain populations in northwestern Pakistan: the development of roads, bridges, electricity grids and resulting advances in communication technologies have connected mountain villages to lowland urban areas. In this light, mountain workers' temporary migrations should be seen as an output of both historical trends and the globalization of migratory schemes.

Temporary labour migration should also be seen as part of mountain livelihoods. As highlanders have traditionally relied on livestock and agriculture for livelihoods, labour migration has become a critical input for local mountain development, through financial and social remittances. Labour migrants from mid-altitude regions such as the Pakistani Northern Punjab tend to have a medium level of professional skills, with some of them employed in trade activities. On the contrary, migrant workers from higher altitudes, such as the lands of the Hindu Kush region, tend to have lower

levels of education and professional skills, and thus occupy manual professions. Although they receive a fraction of local workers' wages, workers from the highlands still appear to play a significant role in the mountains' livelihoods, reducing poverty and promoting socio-economic development. In the Afghan and Pakistani Hindu Kush mountains, labour migration allows mountain households to acquire new knowledge, skills and technologies. "Social remittances" are evident in improved gender equality, and in the higher prioritization of education and healthcare observed in migrant households (UNAMA, 2008; IOM, 2005). "Financial remittances" appear to be one of the most important income contributions to mountain livelihoods, and are often directly used by migrant households to provide themselves with basic food, water, clothing and houshold needs. Half of households in Khyber—Pakhtunkhwa rely on financial remittances to survive, while remittances constitute the exclusive source of income for some (Steinman, 2005; ICIMOD, 2009). Historically, social and financial remittances have appeared to be less volatile than development aid, and to reach local communities more directly than foreign aid and as such plays a key role in improving mountain people's resilience to prepare to and recover from frequent natural disasters. In Khyber—Pakhtunkhwa province, households receiving remittances were able to invest in safer housing (cement instead of mud) that made their houses more resilient to the Kashmir earthquake in October 2005. Migrant households' livelihoods were also less affected than other households (Steinman, 2005; ICIMOD, 2009).

Temporary migration from Pakistani Hindu Kush mountain areas comprise a significant diversity of patterns. The literature on labour migration in the Hindu Kush tends to emphasize the cyclicality and seasonality of migrations. However, expertise provided by the IOM Shelter Coordinator in North Pakistan, Badel Awan,[1] showed that labour migration is diverse, occurs throughout the whole year, and corresponds to both short and long-term strategies: while many migrant workers leave their homelands for several weeks, some migrate daily to relatively close work places, and others migrate for much longer periods. The duration of migratory patterns not only depends on the distance to the closer main city, but also on the employment opportunities encountered by workers once they arrive, as Badel Awan explains "if they got a good job, then they will prefer to live in the city but without their family". However, these diverse patterns share certain common trends: (1) Migration is firstly urban, with people from Chitralese and Dir Upper/Swat mostly going to the Peshawar urban area. (2) Cultural attachment to the native area very often prevents

[1] Interview with Badel Awan, IOM Shelter Coordinator for North Pakistan, conducted on 30 March 2016, Skype.

workers from settling permanently in urban areas, making labour migration often temporary. (3) As Badel Awan notes, labour migration is strongly gender oriented: "only men migrate, due to cultural constraint", as "the decision is mostly taken by men, the head of the family". (4) Last but not least, migrant workers tend to send most of their savings to their families, after their daily life expenditures (Ali et al., 2014).

Conflict affected mountainous areas.

The diverse migratory patterns described above should be considered in the context of significant internal and transnational conflict-induced flows of people, especially between Afghanistan and Pakistan. The term AfPak, introduced by the American diplomat Richard Holbrooke to provide the Obama administration with a theoretical framework for military strategy, could be helpful in thinking about conflict-associated migration in north-western Pakistan. Conflict displacement has long generated migratory flows across the Durand line, making it necessary for government and humanitarian strategies to consider the region as one single migratory system. Conflict-induced displacement was particularly significant in 2015, both in terms of people fleeing violence and returns of Afghan refugees from Pakistan to their native country. As of July 2015, 1,800,000 were estimated to be internally displaced by conflict in Pakistan (IDMC, 2015). From January to September 2015, 197,000 Afghans left their homes fearing violence and insecurity, which constituted an increase of 64% compared to 2014. At the end of 2015, 225,000 Pakistani and Afghan people fleeing North Waziristan had congregated in southeastern Afghanistan (OCHA, 2016). The number of Afghan returnees from Pakistan was particularly high in 2015: as of November 2015, 83,128 undocumented Afghans had returned voluntarily from Pakistan to Afghanistan while 11,914 had been deported from Pakistan (IOM Afghanistan, 2015). In November 2015, IOM was able to assist 46% of returnees and deportees crossing the Torkham border from Pakistan. As of January 2016, 235,000 people were displaced by natural disasters, while refugees and vulnerable returnees from neighbouring countries, such as Pakistan, numbered 362,000. Conflict and natural disasters hence together explain the situation of food insecurity and poor healthcare, resulting in 82% of the Afghan population being in need of humanitarian assistance (OCHA, 2016).

In this light, the 26 October earthquake occurred in a context of diverse overlapping and intertwined vulnerabilities, comprising both the background of temporary labour migration and specific displacement in 2015. The challenge for government and humanitarian organizations appeared to

be two-fold: to recognize migration in the Hindu Kush as a complex multi-causal phenomenon, and not to attempt to settle down populations that would usually migrate temporarily for labour purposes, as such mobility is critical to mountain livelihoods and disaster recovery.

Earthquake and humanitarian assistance: direct and humanitarian-induced shifts in temporary labour migrations.

The Pakistani government, supported by the army, national and provincial agencies, international organization humanitarian coordinator offices, and both local and international NGOs took many steps to provide the affected populations of Chitral, Upper Dir and Swat districts with humanitarian assistance. The shift in the temporal and geographical patterns of labour migration is the result of both (1) the need for immediate reconstruction before the advent of harsh winter conditions and (2) governmental compensation strategies to promote reconstruction. This third section assesses both the immediate and indirect impacts of the October earthquake on labour migration, through humanitarian response strategies.

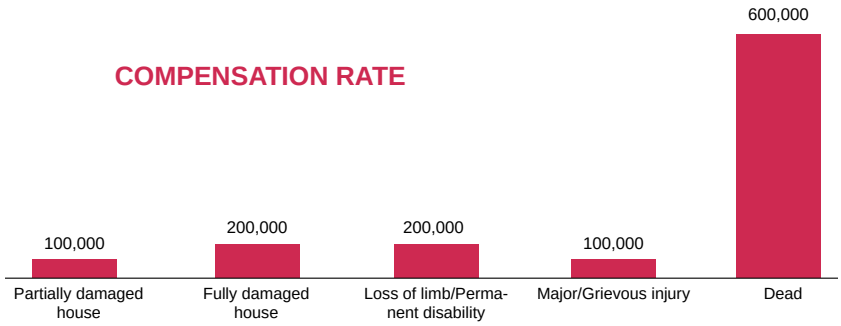
Humanitarian assistance: actors and difficulties of aid-delivery.

Early response to the 26 October earthquake involved a wide range of different actors, especially in Chitral, Upper Dir and Swat districts, where the number of governmental, non-governmental and international organizations was relatively high, varying slightly according to the severity of the damage and the number of deaths and injuries. In Chitral and Upper Dir, 7 NGOs were involved in aid delivery. In Swat district, between 5 and 6 NGOs were involved in earthquake response. Among the main NGOs involved in field assessment and assistance delivery were Aga Khan Development Network (AKDN), Muslim AID, Care International, Human Concern International, Custom health Care and Relief International (OCHA, 2015).

At the national level, the government mobilized the Pakistani Army as well as the National Disaster Management Authority (NDMA) and the Khyber-Pakhtunkhwa Provincial Disaster Management Authority (PDMA KP). While the Pakistani Army provided technical and material support to the relief operations, the NDMA played an important role in coordinating the assessment of damage and the delivery of humanitarian assistance. At the Provincial level, the Khyber-Pakhtunkhwa PDMA's Operation Centre authorized Districts Disaster Management Units (DDMAs) to mobilize relief funds, assess damage and estimate needs for financial compensation. This allowed the government of Pakistan to announce, on 28 October, at

the Governor House of Peshawar, the details of a compensation package for households affected by deaths, injuries and structural damage (PDMA KP, 2016). Provided on a 50/50 basis by national and provincial authorities, compensation for death and injuries, of 600,000 and 200,000 rupees respectively, was announced, to be distributed before 31 October. Compensation for partially or fully damaged houses was supposed to be distributed once Districts and Pakistani Army representatives had verified compensation needs case by case.

Table 1. The government's compensation package in detail



Source: PDMA Khyber—Pakhtunkhwa, 2016.

Although the government did not make any official requests for international assistance in relief efforts, international relief agencies such as the Office for the Coordination of Humanitarian Affairs in Pakistan (OCHA) and the International Organization for Migration Pakistan (IOM) quickly launched assessment and aid-delivery teams. OCHA teams were sent to Upper Dir and Swat districts to assess damage and gaps in response, conduct interviews with those affected and meet local officials. In Chitral district, FOCUS Humanitarian assistance (an affiliate of the AKDN) deployed Disaster Assessment Response Teams (DARTs) and supported the Community Emergency Response Teams (CERTs) who had been trained to provide first aid in remote areas, by distributing tents and blankets (FOCUS Pakistan, 2015).

The main obstacle to assessment and relief efforts came from the remoteness of scattered affected villages of Chitral, Upper Dir and Swat districts, with damaged roads and bridges making it more difficult to access these areas. Extreme weather conditions both constituted an additional obstacle to humanitarian assistance and added to the risks for affected populations: hygiene, health risks and food insecurity (PDMA KPM, 2016).

The impact of the earthquake on labour migration: returning, staying or working closer to home.

As the Humanitarian Operations Manager at the IOM in Islamabad Ammarah Mubarak, stated "significant displacements were not reported following the 2015 EQ in Pakistan".[2] This statement is fully coherent with the study of the literature on the 26 October earthquake, from which very little can be found on mobility associated with the earthquake, as of March 2016. However, this may be the result of both a lack of hindsight due to the temporal proximity of the earthquake, and incomplete situation assessment due to the difficult nature of the terrain for relief operations.

Local & temporary displacements: the need for reconstruction

A study of situation reports from relief operations and discussion with humanitarian operation professionals helped to identify two trends in migratory patterns associated with the earthquake: displacement from damaged houses was local and temporary (FOCUS Pakistan, 2015; PDMA KP, 2016). Ammarah Mubarak explained that "critical needs highlighted by data collection exercises and needs assessment indicated damage to housing and other infrastructure with families continuing to reside within their community or locality in most instances".[3] November 2015 assessments from FOCUS' DARTs in Chitral district reported that "many not directly affected families warmly welcome the affected families to host them in their houses for weeks to months".[4] While people were physically displaced by the loss of their house and the need to find new, at least temporary, accomodation, most of them seemed to remain in the same village. The local scale of displacement is confirmed by Badel Awan, who explained that most of affected people "stayed in the same village with their relatives or nearby villages".[5] Hence displacement induced by the earthquake's damages was mostly internal to villages, and have to be studied through a very local approach.

Responding to the question "Why did the Chitral flash floods of July 2015 displace 10,000 people while the 26 October earthquake did not cause

[2] Discussion with Ammarah Mubarak, IOM Humanitarian Operations Manager in Islamabad, 31 August 2016, email.

[3] Discussion with Ammarah Mubarak, IOM Humanitarian Operations Manager in Islamabad, on 31 August 2016, email.

[4] Focus Humanitarian Assistance Pakistan, Earthquake Rapid Damage and Need Assessment Report, District Chitral in KP and Gilgit-Balistan, November 2015.

[5] Interview with Badel Awan, IOM Shelter Coordinator for North Pakistan, conducted on 30 March 2016, Skype.

significant displacement?", Badel Awan answered: "during the floods (*of July*), they lost their home places (*building ground)*, they shifted to nearby villages and came back after a few weeks. With the earthquake, they haven't lost their place". This last sentence could also relate to the cultural attachment of people to their land. Damage or the loss of homes, described by the government's binary compensation system as "partially/fully damaged", did not prevent affected families from staying in their homeland. As long as the land had not been destroyed, and as long as new houses could be built on the ground, people in North Pakistan seemed to chose to stay. This is precisely the perspective of reconstruction that seems to make displacement temporary, ranging "from two to four weeks" according to Badel Awan. It appears that mountain people's long term perspective of a sedentary lifestyle led to temporary and local migratory patterns.

Reconstruction and impacts on labour migration

The perspective of reconstruction, all the more critical for mountain people as it needed to be done before the coming of the harsh winter conditions, did not only induce short term and short distance displacements; reconstruction itself also triggered a shift in labour migration in the region.

As stated in Khyber-Pakhtunkhwa PDMA's Earthquake Recovery Plan 2015, "Most of the migrant workers have returned home to take care of their family members and rebuild houses" (PDMA KP, 2016). This assessment of migration associated with the 26 October earthquake raises awareness regarding migration that needs to be distinguished from local (internal to village) temporary displacement: the need for reconstruction appears to have affected labour migratory schemes, out of affected villages.

On the poorly documented subject of post-disaster labour migration, Badel Awan's observations provided a greater degree of clarity on the shifts in labour migration directly associated with the earthquake. The need for post-disaster reconstruction had multiple effects on labour migration: (1) it led migrant workers to come back from urban areas to help in reconstruction. (2) Reconstruction also induced temporary immobility among migrant workers: although they would usually move to find employment opportunities in urban areas, labour migrants had to help with reconstruction before leaving their village. (3) Migratory patterns, for those who continued to migrate for work, shifted to shorter distances and shorter periods. Following his visits to Chitral and Swat districts to assess and coordinate IOM Pakistan' shelter assistance program, Badel Awan

explained, "As they (*migrant workers*) lost their house, they preferred to work nearby".[6]

Although these shifts were empirically observed in the context of the IOM Shelter Coordinator's visits to Chitral and Swat districts, there is still no clear estimation of the number of post-disaster labour migrants returning to mountain villages, staying to support reconstruction efforts and moving to urban areas. There is also great uncertainty regarding the middle to long-term effects on labour migration. On the grey area surrounding long term migration, Badel Awan contends that patterns will depend on employment opportunities encountered by workers: "if they get a good job then they will prefer to live in city", which could reflect the return of employment opportunities as the dominant driver of labour migration. In this respect, the 26 October earthquake's main impact on migrant workers would be to deviate migratory patterns from their main drivers; as long as damaged houses were being reconstructed and affected populations were adapting to post-disaster environment, it appears that labour mobility was driven by the need to help with their homeland's reconstruction efforts.

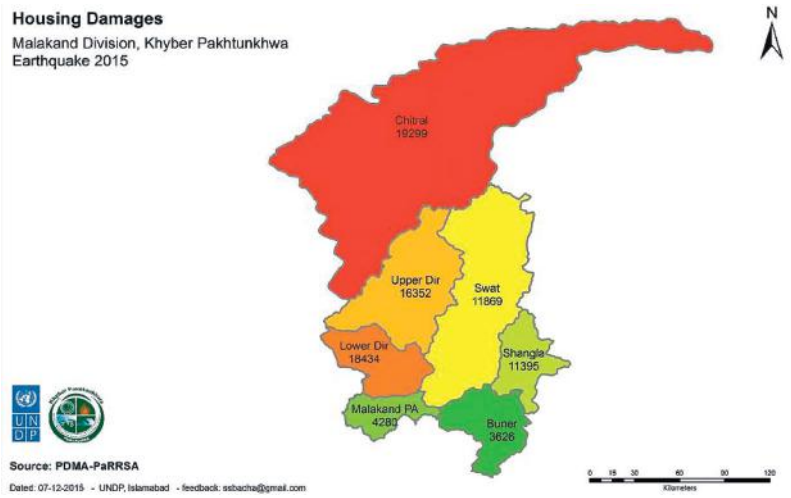
Housing conditions and challenges around reconstruction.

Different housing conditions were reported by humanitarian assessment teams in Chitral, Upper Dir and Swat districts: OCHA assessment teams reported that almost all the buildings visited in Swat districts were poorly resilient structures, with walls entirely made of mud, and roofs made of wood frames covered with mud. In the villages in Dir district visited by assessment teams, a much greater proportion of houses had been built using bricks and concrete, although the majority of buildings were made of mud. Differences in construction methods impacted the way houses were affected by the earthquake: as observed by assessment units in Dir districts, "all the collapsed houses (...) observed in the village are mud houses".[7] Hence poorly resilient mud structure vs. concrete/bricks buildings was a critical criterion when explaining the differences in damage to house between districts mapped below (OCHA, 2015).

[6] Interview with Badel Awan, IOM Shelter Coordinator for North Pakistan, conducted on 30 March 2016, Skype.

[7] OCHA, November 2015, OCHA Mission Report to earthquake affected areas of Dir (Lower & Upper) and SWAT, 11-13 November 2015.

Map 3. Housing damage across affected districts



Source: PDMA KP, 2016.

While the vulnerability of housing to tremors depends on construction methods, the materials and methods used for construction must themselves be seen in the context of financial and social conditions: knowledge, awareness and financial means are critical determinants of housing structures. Socio-economic conditions are all the more important when it comes to reconstruction, as reconstruction of a mud-made room is less expensive than using brick/concrete, and requires ten days of labour only. Lack of financial means and low awareness combined with the advent of harsh winter conditions explains why 60% of the houses spontaneously reconstructed by Dir inhabitants in early November were made with mud (OCHA, 2015).

In light of building conditions in the mountains, the objective of humanitarian assistance in reconstruction was to (1) provide affected populations with adequate compensation packages along with education campaigns that promote safe reconstruction methods, and (2) to create an environment favouring labour temporary migration that was shown to increase populations' resilience to disasters. These objectives seemed difficult to achieve when OCHA teams observed in November 2015 that Swat villages as Akhoun Baba showed almost exclusive mud-reconstruction as compensation was assessed as being low and ineffectively distributed (OCHA, 2015).

Humanitarian assistance in reconstruction and mixed consequences on temporary labour mobility.

"Many of the villagers with capability in terms of available work force and finance do initiate repairing or constructing their houses within days of aftermath of the disaster". Although this observation from FOCUS DARTs is fully consistent with what Badel Awan calls a "very high self-recovery rate", it appears that many villagers benefited from humanitarian assistance in Chitral, Swat and Upper Dir districts, although "just didn't wait in these areas for external help" (FOCUS Pakistan, 2015). The relationship between humanitarian assistance, affected mountain populations and labour migration was not uniform, but made up of complex interactions between the "usual" determinants of migratory phenomena (geography, employment opportunities) and new conditions disrupted by damage. In this respect, it appeared that the government response, through material and financial support for reconstruction, created uneven access to recovery and to further labour migration, a critical part of mountain livelihoods.

One natural hazard, a two-fold disaster?

Different geographical conditions induced varying degrees of access to reconstruction and to assistance in reconstruction. As observed by OCHA teams when visiting Upper Dir district, damage suffered by inhabitants of the high altitude Koti Bastu village were more significant "because there was no 'neighbor' to provide shelter, and at the same time bringing construction material and food items was very difficult and in most cases only possible using mules and donkeys."

As a consequence of the difficult access to mountainous terrain, OCHA team reports noted, as of November 2015: "the level of assistance from the government to Upper Dir has been very limited so far".[8] An interview with IOM's Shelter coordinator for North Pakistan highlighted that the expectation of humanitarian assistance was playing a role in determining both migration and migratory perspectives, and expectations seemed to depend on the geographical location: "the villages down (*in the valley*), they think they will get assistance and mostly they shifted their families with their relatives".[9] As they assumed there was going be quick and effective humanitarian assistance in reconstruction, some migrant workers in low-lying

[8] OCHA, OCHA Mission Report to earthquake affected areas of Dir (Lower and Upper) and SWAT, 11-13 November 2015.

[9] Interview with Badel Awan, IOM Shelter Coordinator for North Pakistan, conducted on 30 March 2016, by Skype.

mountain areas appeared to pursue temporary migration as usual, while the rest of the family was "unusually displaced" from their damaged house.

Differing degrees of remoteness and accompanying means of communications created uneven humanitarian assistance delivery, and led to different perspectives on labour migration and the actual ability to move; in remote and damaged mountainous terrain, reconstruction would require more time and material/financial means. However, the impact on temporary labour migration appeared to be unclear. As explained by the interviewee, families living in remote areas with scattered houses, having no place to shelter "preferred to migrate towards main cities", where men—"the head of the family"— "shifted their families to rental houses". The lack of access to shelter and reconstruction hence seemed to induce a shift from exclusively male labour temporary mobility to long-term displacement of the whole family. Analyzing such impacts on migration requires more data, which is currently being collected by IOM and the Food and Agriculture Organization (FAO) in Chitral and Swat districts.

All things considered, the 26 October earthquake—one single natural hazard—caused several different disasters, since it affected mountain populations in many different ways. This suggests that material and social vulnerabilities are critical determinants of a natural hazard's scope of damage.

Inadequate government compensation packages

In addition to the vulnerability of mountain populations, the government's inadequate response provided uneven assistance in reconstruction. It also set the scene for unequal access to further labour mobility.

This firstly had to do with the difficulty in accessing remote rugged terrain; affected families in remote high altitudes with no social support from neighbours or geographically close relatives could not rely on humanitarian assistance, which, as a result of harsh weather conditions and rocky and icy terrain, stuggled to reach scattered, sometimes not clearly located populations. As seen above, reliance on humanitarian assistance could be a critical determinant of labour mobility.

However, the mixed effects of humanitarian assistance on labour mobility mainly came from the inadequate compensation package proposed by the government. Announced in Peshawar on 28 October, the compensation package showed shortcomings in its attempt to compensate every household, and in its distribution. The "one-door" compensation policy allocated one compensation package per house. Whether the houses were fully or partially damaged, resulting in a level of compensation of 200,000

and 100,000 rupees respectively, compensation did not take into account the number of families or houses found behind one single common door. In Swat district, the house in the village of Akhoun Baba are often gathered into family compounds of between two and four houses, thus, as a result of the single shared entry door, several families received one single compensation cheque. The "one-door" policy was also an issue in that it ignored the size of the room. As reported by OCHA assessment teams in November 2015, this created conflicts and disputes, sometimes internal to families, for instance between married brothers living in separate houses of the family-compound (OCHA, 2015).

Even for one family, the compensation of 200,000 rupees for fully damaged houses, and of 100,000 rupees for partially damaged houses, was observed to be insufficient. This triggered the development of negative coping strategies, such as the reduction of food consumption to be able to buy construction material, or re-building of houses with cheap and unreliable material (using mud instead of bricks).

The binary system of compensation distinguishing between *fully* and *partially* damaged houses did not account for the reality of damages and further risks for affected households.

Among the non-collapsed houses, considered as partially damaged, some were heavily damaged, and needed to be fully reconstructed, as they were no longer safe for habitation. The level of compensation of 100,000 rupees appeared largely insufficient in these cases.

Finally, a lack of coordination between the government and district authorities constituted a significant shortcoming in the implementation of a package that was supposed to be supported on a 50/50 basis by both national and provincial governments. As explained in reports by OCHA teams on 13 November 2015, "district authorities informed that they *were* not aware of any written guidelines/ rules / policy governing (...) the compensation process." (OCHA, 2015).

By providing unequal, inadequate and insufficient access to reconstruction, humanitarian assistance may have promoted unequal access to further labour mobility. More data on post-disaster labour migration needs to be collected in order to assess the way post-disaster reconstruction affected long-term labour migration.

Labour migration and natural hazards in Pakistani Hindu Kush: conclusions.

The humanitarian response to the earthquake, from both government and relief agencies, focused on the distribution of winterized shelters, clothes,

blankets and tents (non-food items, or NFIs), as well as food items, to compensate for the loss of food stock that had been buried under the debris by the earthquake. The humanitarian response addressed the challenge of urgent reconstruction before the onset of the harsh winter weather conditions in quite a mixed way. An analysis of the humanitarian response, along with its identified shortcomings, allows us to make several conclusions, in particular in the Hindu Kush context of overlapping vulnerabilities and reliance on temporary labour mobility.

Migration as a multi-causal phenomenon, requiring inclusive response to natural disasters

An analysis of aid delivery following the earthquake suggests that migration seemed to be considered as being beyond the scope of the humanitarian mission to assist victims. Mobility did not appear to be a phenomenon to take into account nor to accompany, promote or inhibit. The 26 October earthquake indeed induced limited immediate displacement, often internal to villages.

In the context of the overlapping vulnerabilities of Pakistani Hindu Kush areas, migration is often more associated with populations fleeing violence and insecurity. As an illustration, OCHA Afghanistan's Humanitarian Needs Overview 2016 begins with the case of the "September (2015) battle for the provincial capital Kunduz".[10] The introduction made no mention of natural disasters, although 235,000 Afghans were affected by natural hazards at the time (OCHA, 2016). Mobility in northwestern Pakistan is the result of diverse intertwined factors ranging from the Taliban insurrection to sudden damaging natural hazards, including climate-related slow onset phenomena as well as regional conjunctures, leading 1.5 million Afghan to take refuge in Pakistan. As a consequence, humanitarian emergencies including malnutrition, health and public health risks are built on interrelated factors, including migratory flows, which are themselves already multi-causal. Humanitarian assistance strategies must thus also address risks, needs and migration as multi-causal. Efforts to identify drivers of migrations and factors of crisis are critical to construction an effective humanitarian response.

Migration covers diverse patterns, some being critical to mountain livelihoods

Migration in Hindu Kush mountain areas covers different spatial and temporal scales, including some which are micro-local and daily. Families

[10] OCHA Afghanistan, Humanitarian Needs Overview 2016, January 2016.

whose house collapsed after the earthquake were either hosted by their neighbours in the same village or moved to rented houses, can be considered as internally displaced persons, since they met the criterion of "people who have been made homeless by natural disasters", "considered as IDPs" by the UN High Commissioner for Refugees.[11]

Temporary labour migration plays a key role in supporting mountain livelihoods. Although the losses induced by people's departure can negatively impact local living standards, labour migration has been shown to be a critical contributor to economic and social development in mountain regions, which also improves communities' resilience to natural disasters. Labour migration can thus be seen as a disaster adaptation and recovery strategy.

Interlinked migratory and sedentary perspectives: labour migration and immobility as response strategies

If migration should be promoted as an adaptation strategy, so should immobility, here understood as the temporary interruption of a migratory lifestyle. By staying, moving closer and for shorter periods to help in reconstruction, populations usually moving for work appeared to temporarily change their migratory lifestyle in order to secure a long-term sedentary lifestyle while ensuring their future ability to move. Such responsiveness of immobility and migration strategies calls into question the binary representation of sedentary vs. mobile lifestyles.

Preparedness and education are particularly beneficial to vulnerable remote areas.

High altitude areas appeared to be more severely impacted by the earthquake, since remoteness made it more difficult to shelter and re-build. Humanitarian delivery of food and NFIs took a great deal of time and remained difficult for most relief operations, in the context of the onset of winter. Preparedness hence appears critical in helping communities to react quickly, and reduce their reliance on uncertain aid-delivery. The pre-positioning of stockpiles of relief items (blankets, tents, clothes, and winter equipment) is a first step that has already been shown to critically improve mountain communities' recovery capacity. Education also provides mountain communities with the ability to identify risks, and safe and unsafe sites for sheltering and re-building. Both two DDR measures implemented by relief-agencies and authorities, after the 26 October earthquake, are especially critical to recovery in high altitude areas.

[11] UNHCR Internally Displaced People website: http://www.unhcr.org/pages/49c3646c146.html

Migration is a widespread phenomenon covering a wide range of diverse events. Of all the drivers and realities it encompasses (displacement, evacuation, relocation or sheltering in neighbours' houses), governments and international agencies working on migration governance have long largely restricted their focus to displacement across borders induced by persecution, only recently extending its scope to the internally displaced people. This paper's analysis of the 26 October earthquake in Badakhshan highlights the need for a better understanding of micro and local displacements, and of the impact of reconstruction assistance on labour mobility. Further research on labour mobility in the Pakistani Hindu Kush Mountain will be critical in order to provide adequate and effective humanitarian response to hazards magnified by climate change.

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