

# Lessons from Nepal

## Donor Perspectives on Reconstruction after the 2015 Earthquakes

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### Abstract

The 2015 earthquakes in Nepal led to a large-scale international response at the invitation of the Nepal Government. Some elements: the post-disaster needs assessment, a large donor conference, and fully mobilised humanitarian structures, have been considered to be a text-book response, yet three years after the earthquakes important findings emerge.

This paper reviews progress and offers a number of initial lessons. It draws on the experience of three innovative approaches to gaining feedback from affected populations: the UN Common Feedback Programme, an embedded field office, and a cohort study.

The response has taken place in a time of considerable political change in Nepal. The earthquake created the political space for the passing of the Nepal Constitution. This, after elections in 2017, has led to new local governments in urban and rural *palikas* (municipalities) led by directly elected representatives. In many ways this long-awaited political earthquake was more profound than the physical shake.

The main lessons covered include: limitations of the popular “Owner-Driven” approach to post earthquake reconstruction; failures in settlement reconstruction planning; the need for ongoing sectoral coordination; and opportunities for reconstruction processes to make progress on long standing mechanisms of exclusion, for example landlessness.

The paper particularly focuses on issues related to vulnerable households, noting that proactive measures are needed to avoid leaving the poorest till last. Different categories of marginalised households are covered including those affected by new geo-hazard (landslide) risk since the earthquakes, poverty, land marginalisation, and those less able to engage with the formal procedures of the state, including the grievance mechanism.

## Section 1 - Introduction

At 11:56 Nepal time on 25 April 2015, an earthquake of magnitude 7.8 hit approximately 80km northwest of Kathmandu at 15km depth. There were hundreds of aftershocks. The earthquake was a traumatic event that directly led to the deaths of over 8,500 people. The immediate impact was profound; houses were damaged and destroyed over an arc that stretched from Baglung in the west to Dhankuta in the east. Over 800,000 families lost their main structural asset – their house. Dwellings for over four million people have been assessed by engineers as needing to be rebuilt.

Yet this was not the big one. The same forces that create the Himalayan mountains mean that large earthquakes in Nepal and elsewhere in the region are inevitable. The west of Nepal has not had a large earthquake since 1505<sup>1</sup>, but is exposed to the pressures of the South Asian plate forcing under Tibet. Had the fracture from the 2015 earthquake propagated westwards rather than eastwards a much larger earthquake could have resulted.

Earthquake damage is layered over pre-existing vulnerability in communities in affected districts. This includes marginalisation of indigenous populations, remoteness, poverty, weak interfaces between citizens and the state and poor maintenance of infrastructure, and compounded the earthquake effects.

Homes had not been constructed in line with building codes. Many showed fatal weaknesses under earthquake ground accelerations. Particularly problematic was the use of mud mortar and round river-stones in heavy poorly bonded walls. Evidence of this is visible across the post earthquake landscape where houses can be seen with wall complete failures, or delamination where one face has collapsed. Weak structures represent a failure of previous reconstruction as buildings built in the aftermath of the 1934 earthquake seemed particularly affected.

The human cost to Nepal could have been much worse. Kathmandu valley silts didn't liquefy – a process where water-saturated soils transform from solid to liquid due to increased pressure in an earthquake. This is despite a third of the valley area being at high risk of liquefaction (Subedi, 2018). Conversely local geological effects caused earthquake shaking in the Kathmandu valley with lower frequencies than expected. This caused damage to high buildings, for example the collapse of the Dharahara tower (Avouac, 2015), but the three to five storey buildings, common in the Kathmandu valley suffered less damage.

As the earthquake happened during the day there were fewer people indoors than there would have been at night. Importantly schools were not in session. By comparison, the 2005 earthquake in Pakistan which happened on a school day led to the deaths of over 19,000 children. Other factors fortuitously did not hinder the initial response: the earthquake happened outside of the monsoon when Nepal's roads are much less passable, the airport reopened quickly, and mobile phone networks remained intact. In March 2015, the UK Government working with the UN World Food Programme had opened a Humanitarian Staging Area at Tribhuvan Airport in

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<sup>11</sup> On 6<sup>th</sup> June 1505 an earthquake of estimated 8.7 magnitude (ie. 10 times bigger than the 2015 earthquake) struck Nepal, centred on the Dolpo region. It killed an estimated 30% of Nepal's population.

Kathmandu which was instrumental in managing the logistics of large volumes of humanitarian goods arrival at the airport.

Within 24 hours of the first quake the Government of Nepal formally requested humanitarian assistance from the international community. The United Nations cluster mechanism initiated and humanitarian aid flooded in. The UK government had a surge team of 27 extra humanitarian staff at peak. Subsidised helicopters buzzed around the mid hills delivering relief items and moving agency staff around. The UK Disasters and Emergency Committee raised £85m for the response, evidence of solidarity between the UK public and affected people in Nepal.

Some of the lessons from the humanitarian phase included the success of cash based programming, where instead of traditional distribution of food and non-food relief items, agencies moved to distribute a larger share of their programme delivery via cash transfers to beneficiaries. Though overall a progressive step, future programmes will need to consider how cash programming can be better coordinated, as one issue that affected the response was the range of cash programming with different agencies offering different relief provisions (Sanderson et al, 2015). However the use of cash, which stimulated market delivery mechanisms, was a major and successful part of the response and demonstrated that cash distribution works.

One lesson that has had lasting impact into the recovery phase was the distribution of materials to support shelter. Transitional shelter covers the period after the emergency shelter response (tents/plastic sheeting distributions) and the reconstruction of permanent homes (supported, in turn, by the main housing grant mechanism). The need for transitional shelter support cannot be underestimated as 31% of households have still not returned to their homes in the fourth winter after the earthquakes. The particular intervention that had long-term benefit was the distribution of bundles of high-grade corrugated roofing sheets to affected households, with distributions often involving helicopter sling loads for remote areas. These durable transitional shelter materials were an important aspect of the early recovery phase.

## **Section 2 - Evidence, Methodology and Sources**

This paper draws on several processes that have been initiated to support and understand the earthquake humanitarian and reconstruction response. Firstly the United Nations Common Feedback Project<sup>2</sup> is a community engagement initiative, launched during the response to the 2015 Nepal Earthquake designed to ensure that there is a mechanism for affected people's voices to be fed into the humanitarian response and recovery process. It has the objective of contributing to a more effective and responsive recovery effort, understand the perceptions of affected people relating to services, people's sense of agency, outcomes and the quality of relations between aid providers and the affected population. The Common Feedback Project has published a series of thematic reports which provide insights, from the perspectives of earthquake affected people into the progress of the reconstruction process. As the programme has been hosted by the United Nations the project has been able to transfer the evidence from surveys into advocacy points relayed to government.

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<sup>2</sup> United Nations Common Feedback Project reports can be accessed here <http://cfp.org.np/reports/>

Secondly, for the two years following the earthquake The Asia Foundation undertook four rounds of Impacts and Recovery Monitoring<sup>3</sup>. This used a mixed methods research approach, involving both in-depth qualitative field monitoring and large-scale quantitative surveys. The same locations were revisited for each research round to give a longitudinal perspective on how families were recovering. The process gave valuable perspectives around vulnerability in post-earthquake contexts and insights into particular issues such as debt. One challenge was that there was a lag of typically over five months between the data gathering and publication stages which risked some of the findings being perceived as being out of date.

The Housing Reconstruction and Recovery Platform<sup>4</sup> (HRRP) is a housing sector coordination mechanism which had its origins in the shelter cluster. It comprises teams based in the main earthquake affected districts which liaise between implementing partners and government and communities. The platform has produced a number of studies which have been important contributions to understanding the progress of housing reconstruction in Nepal. Although HRRP is a network of non-governmental organisations it has been able to relay its findings to government at central and district levels.

Finally reconstruction projects supported by the UK Government's Department for International Development (DFID) in Nepal benefit from a dedicated feedback project, the DFID Field Office, which provides on the-ground intelligence of the progress of projects, and provides liaison support with local authorities. This "ground truthing" approach is popular in the humanitarian stages of a response and is making a valuable contribution in the recovery phase, both detail that helps the practical work of delivering projects and also on strategy, for example on issues related to vulnerable households.

### **Section 3 – Changes in the Governance Context**

The Constitution of Nepal was approved on the 26 September 2015. The delineation of the country into provinces and the provisions for local and provincial elected representation were fought for during the conflict and the promulgation has profound implications for the governance landscape in Nepal. For over twenty years citizens (and development partners) have been waiting for elected local government representation. The previous structure involved district officials, sent from central Kathmandu ministries, who oversaw development and security in districts. These were frequently not from districts that they were tasked with administering. Some problematic practices were common, including social service payments being transferred in suitcases of cash held by local government officials.

The 2015 and 2016 elections returned newly elected local governments which replaced the preceding structures. The three-tier structure of government outlined in the constitution provided for new levels of government: *Gaun-* and *Nagar- Palika* being rural and urban municipalities respectively, each with elected representatives. In addition, and with considerable opposition, seven provinces are created with their own provincial governments. These are designed to devolve power from central authorities in Kathmandu. One constraint, at least for development partners, is that the

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<sup>3</sup> <https://asiafoundation.org/tag/independent-impacts-and-recovery-monitoring-nepal/>

<sup>4</sup> <http://www.hrrpnepal.org/>

financial management structures are still weak at the local government level, leading to a paradox whereby donor organisations would like to support devolved government but find it difficult to do so with financial aid, because local governments do not yet have robust systems or processes to manage aid funds. Consequently organisations look to provide capacity support to local bodies, often through separate consultancy or projectised channels.

One dramatic effect of the implementation of the constitution has been that, following the 2016 elections, new local bodies have been allocated significant capital budgets from the central treasury, far larger than under the previous structure and with more (local) pressure to spend. One example of the consequence of this has been large-scale cutting of basic earth roads throughout the mid-hills. While these have helped with access, particularly useful for housing reconstruction, the roads are typically not engineered, have caused landslides and loss of forest and agricultural land and are often impassable after one monsoon as costly structures to manage run-off water are often not included.

The National Reconstruction Authority (NRA), established in the Reconstruction Act (Nepali calendar 2072), provides the legislative basis for the authority to operate independently of the new local governments. It is a federal entity, centrally mandated to oversee reconstruction delivery. The NRA has been affected by five changes in chief executive, but has overseen the main housing reconstruction programme and has engaged in sector reconstruction via various line ministries.

Finally the early reconstruction period coincided with an economic blockade of Nepal by protesters on the India Border. Parties were not able to resolve the impasse for a critical six month period comprising what would have been the first construction season after the 2015 earthquake. The blockade was an economic and humanitarian crisis for Nepal compounding earthquake effects.

#### **Section 4 - Reconstruction delivery**

Housing reconstruction has represented the largest share of post-earthquake reconstruction delivery; in cost terms, more than all other sectors put together. The Government of Nepal through the National Reconstruction Authority, began planning the housing reconstruction programme in June 2015. The approach drew heavily on the experience of reconstruction in Pakistan following the 2005 Kashmir earthquake and earlier responses to the 2004 Tsunami. In particular the approach of Owner Driven Reconstruction was applied. This places responsibility for housing reconstruction with the earthquake affected home owner where conditional financial assistance is given, accompanied by technical support and inspections with the objective of ensuring that houses are built back better. Owner driver reconstruction is in contrast with earlier approaches where relief agencies built homes for people.

The housing programme in Nepal includes a reconstruction grant of 300,000 Nepal Rupees (NRs), approximately \$2700, provided by the Government in three tranches linked to compliant construction; 50,000 NRs following the signing of a partnership agreement with the government, a further 150,000 NRs after completing the foundation up to the plinth level, and a final 100,000 NRs after completing the walls and roof ring (an important element for seismic strength). Compliance is assessed by

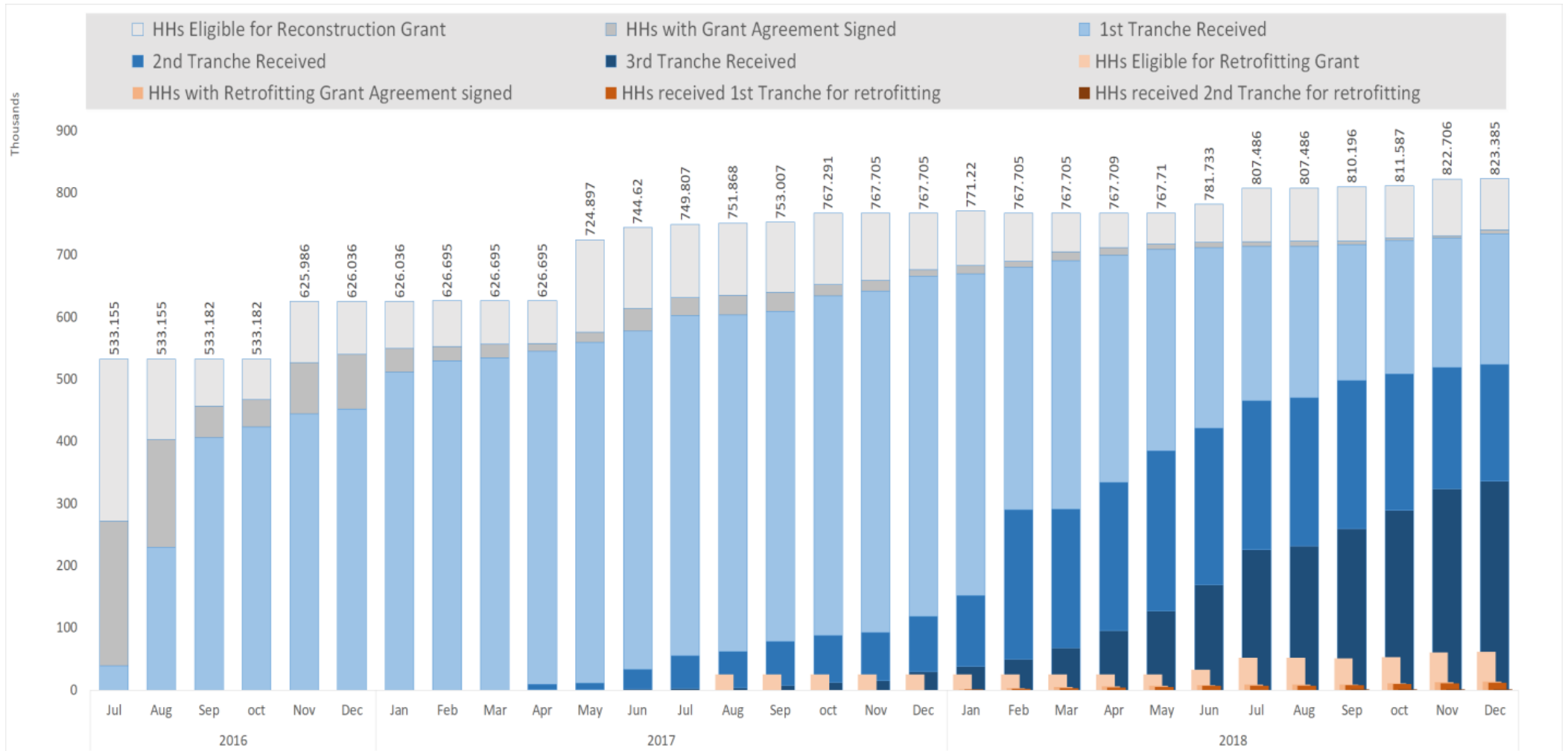
government engineers and 96% of tranche applications have been approved for payment. While the Government did publish a catalogue of approved designs it stated that it is not mandatory for households to select a design from this catalogue, and they are free to prepare house designs outside of the catalogue but these designs must comply with the National Building Code.

Underpinning the housing grant programme was an engineering survey which physically visited and assessed over 996,000 houses for damage and grant eligibility. A grievance mechanism ran alongside the grant process for households. By late 2018 approximately half of the affected families had rebuilt or were rebuilding their homes. In many ways this is impressive, not least because of the early difficulties related to the 2015-2016 economic blockade and multiple changes in the head of the reconstruction authority. Seasonal characteristics in Nepal also hinder year-round progress. There is limited time when construction is possible as a result of snow/cold in winter and most roads are not passable during the monsoon.

Figure 1 shows that housing reconstruction is following an S-curve characteristic. Progress is initially slow – it was two years before any households received the second tranche indicating that their house building had met the first, foundation, stage. In the middle portion, which for Nepal can be described as the period from Jan 2018 through to mid-2019, many households are making rapid progress<sup>5</sup>. In the outer years, the remainder group become increasing harder to complete. This can be for various reasons including household vulnerability (remoteness, poverty, lack of available labour) and situation-complexity such as in urban areas where households face complex planning and financial barriers to reconstruction. The challenge for the remainder of the reconstruction period will be to understand and practically support the groups yet to progress into the dark blue shaded bars in Figure 1 to do so over the next few years.

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<sup>5</sup> Rapid progress also resulted from deadlines initiated by the National Reconstruction Authority. Arguably some of this process was too quick, as approximately 10% of families built homes which were small to meet grant deadlines and cost constraints.



**Figure 1. Progress on Housing Reconstruction**  
 Graphic prepared by the Housing Reconstruction and Recovery Platform. The data is from the National Reconstruction Authority in Nepal

## **Section 5 - Are people being left behind?**

The main barriers for poorer families to reconstruct their homes include the inability to provide inputs for reconstruction, inadequate technical support, and lack of access to affordable financial services.

There are particular risks in reconstruction processes that families resort to negative coping mechanisms particularly heavy debt but also unsafe migration, early marriage or human trafficking. Data on trafficking is hard to gather but for debt, the Common Feedback Programme found that over half of beneficiaries have taken loans for housing reconstruction. As the announced formal mechanism for subsidised loans did not materialise at scale loans are all informal, from local lenders, and are at high rates of interest.

Remote communities face particular challenges. They are furthest from market centres, have lower population density and lack infrastructure for transportation of reconstruction materials. The housing grant has been flat, not accounting for remoteness. The current government<sup>6</sup> set of definitions for categorising vulnerable households do not include remoteness as a measure.

The application of stringent deadlines on housing reconstruction has had particular effects for vulnerable households. Families looking to rebuild, but facing hard deadlines have in some instances experienced threats of having social service provisions withdrawn. Pressure to rebuild can have negative consequences including debt (emergency loans taken to meet reconstruction needs) or the construction of unliveably small houses – the single room structures which are the least cost and least time pathway to housing grant completion.

As the reconstruction process has required land title, there has been an opportunity for reconstruction processes to make progress on landlessness, a long standing cause of exclusion in Nepal. This has been a relatively successful element of the reconstruction response where local government has been able to issue papers which confirm title even where the formal land registry documents are not present.

A final particular category of vulnerable households are those that live in communities where there is increased risk of landslides and other geohazards. Many of these risks have increased since the earthquake, whereby monsoon rain loads slopes made unstable by the earthquake, thus increasing the landslide risk for a few years after the earthquake. Government engineers and geologists have assessed families living on these slopes and have divided settlements into three categories, not at risk, at high risk unless intervention measures are taken and at high risk and need support to relocate. A process of relocation is underway, but there remain a number of vulnerabilities including suitability of new integrated settlement sites, families being moved away from locations whether they have previously had livelihood, and those who do not move remaining vulnerable to geohazard risk.

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<sup>6</sup> The Nepal Reconstruction Authority has a definition of vulnerable households that includes elderly, unaccompanied children, disability, and female headed households.



There have been limited tailored response to the needs of vulnerable households. Some donor projects funded by the UK, the USA and Japan and also private donors have piloted approaches in the areas where they work but an overall response to the needs of vulnerable groups across the whole response remains elusive. Sector practitioners under the coordination platform HRRP propose that enhanced social mobilisation and tailored out-reach technical assistance to families themselves is the important intervention that will support more vulnerable households through the reconstruction process.

## **Section 6 - Some initial lessons**

Drawing on the experience of reconstruction in the first three years of the response a number of initial lessons can be drawn. It's clear that owner driven reconstruction is an important principle in empowering affected people and not seeing permanent housing as some non-food item to be distributed to affected people. Housing and land use, involve decisions contingent on many factors and owner-driven reconstruction places the family affected at the centre of those decisions. The Government of Nepal and its development partners has designed a large owner-driven reconstruction programme, which is transferring cash directly into the bank accounts of affected populations. However three key elements have been missing which is undermining the effectiveness of the programme. Firstly there has been inadequate technical assistance – advice to people around their choices, how to access grant provisions, and how to rebuild a safe home. This has been particularly the case for vulnerable households who are likely to need more support to progress through the reconstruction phases. Gaps in technical assistance have been comprehensively mapped by the Housing Reconstruction and Recovery Platform. Secondly the grant is not envisaged as covering the full cost of housing, as families need additional funds to reconstruction cash-poor families find it difficult to progress. There is a particular trap whereby hard deadlines cause families to need to borrow, often at high rates, to rebuild. Finally an owner-driven approach risks being an individualistic route to rebuilding damaged communities. Without support for settlement planning in the reconstruction phase then communities can be affected long-term consequences of poor planning including housing congestion and difficulty in delivering or improving services.

There is an important lesson on lasting distortionary effects of early geographic prioritisation. There have been whole districts at risk of being left behind. While it may have made sense to initially prioritise districts based on need (ie the 14 most affected districts) this has tended to lead to the de-emphasis of other districts and this has led to perverse outcomes, such as less-affected areas of priority districts receiving more support than heavily-affected areas in outer districts. One recommendation would be to remove the initial prioritisation early in the recovery phase and move to consider the needs of the affected population as a whole.

A specific lesson from Nepal relates to the factors which have led to a negative unintended consequence of the grant in the form of one-room houses which are small. These often include an internal area which is less than a total of 3.5m<sup>2</sup>, which is not liveable (and not compliant with floor area requirements of the Nepal building code) for households with more than two family members. One-room houses represent the easiest (cheapest, quickest) route through the grant approval process. These *rahat ghar* (aid houses) are often not intended for habitation but are used as secure storage

for grain or other valuables. Meanwhile families are often living in the building previously assessed by survey as being damaged, or in the temporary shelter built after the earthquake. Any policy or subsidy can lead to unintended consequences, the lesson being that feedback channels need to work well and quickly to inform mechanisms for effective course correction. In this case, limited action is possible because the beneficiary family is not in breach of the participation agreement and the government will have already transferred the grant/tranche funds. Remedial action could include guidance for safe area-extension of a one-room house, use of one room housing to inform future building practices – seeking to ensure that families value seismic elements in new construction, and guidance on retrofitting for damaged properties that are still being used.

One strength of the response in Nepal has been data, as shown in Figure 1, where a large management information system exists which brings the data from the initial surveys, which included a full set of census questions in earthquake affected districts, and inspections done by the engineers that approve tranche progress. However this rich data set has been under-utilised in terms of informing where slow progress is taking place or helping to identify pockets where issues such as one-room housing is occurring. The lesson would be to better use data to prioritise programming.

There are many lessons, both engineering-technical and policy/programming around retrofitting approaches to strengthening damaged houses. It is estimated that up to 40% of the housing stock damaged by the 2015 earthquakes remain intact and could be retrofitted. The economics of retrofitting are important: it costs around the same price to retrofit a traditional family house as it does to build a new two-room reconstruction-grant house which will typically not be sufficient for a family and their agricultural produce. The literature on safe strengthening of stone and mud-mortar buildings will be enhanced from the experience in Nepal. In practice, it has been hard to work with homeowners to value retrofitting as an intervention at scale, yet it is incredibly important in the context of weak houses remaining in earthquake affected districts and more broadly across Nepal as risks of future large earthquakes remain, and weak mud-mortar buildings are common.

There are some initial signs that reconstruction may have a positive effect on women's empowerment in Nepal. In a survey done by HRRP almost 50% of women respondents with a reconstruction Partnership Agreement with government have signed the agreement in their own name. Gains have also been made in women's economic empowerment. The challenge for the remainder of the reconstruction period will be to avoid reversals against social progress made during the crisis and recovery phases.

## **Section 7 - Conclusions**

Owner driven reconstruction implies affected people are empowered to take control of their reconstruction and are provided with adequate technical support and financial assistance to enable their recovery. There has been good progress in Nepal which has followed and stayed-true to owner driven principles. Gaps have occurred where the technical assistance to affected households has been limited and recovery has been constrained by the lack of affordable finance for reconstruction. This is evidenced by unliveably small one-room houses observable in many earthquake affected communities.

There is a need to capture lessons thoroughly such that the experiences from the policies and programmes related to the 2015 earthquake can inform future responses. This paper is intended as not more than some initial notes on lessons from Nepal. To adequately capture the rich set of experiences from the recovery process from the 2015 earthquakes a thorough exercise is needed to sit with and hear from people who have been involved in the recovery process leading to a document which can inform the responses to future earthquakes in Nepal and elsewhere.

One final remark, in conclusion is that in 1977 Kates and Pijawka wrote a seminal work on the pace post disaster recovery, drawing on 50 years of reconstruction from earthquakes and other disasters in North America and elsewhere (Kates and Pijawka, 1977). Transitions from humanitarian to recovery (relief to development) are well discussed in humanitarian practitioner literature, but Kates and Pijawla propose a transition that takes place around the 4<sup>th</sup> year after a disaster outwards to a longer 8-10 year period of reconstruction, and that these two phases have different characteristics. In Nepal the Reconstruction 1 phase would be dominated by the housing grant administration process and the buildings that the grant is linked to. The current opportunity in Nepal is to consider the next, longer, phase of reconstruction de-linked from housing grant administration, with more of a focus on economic recovery and longer term resilience.

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