

Defining ‘Better’ Better: Why Building Back Better Means More than Structural Safety

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Abstract

This paper explores the importance of house and home for survivors of natural disaster: it protects from hazards and contributes to health, well-being and economic security. It examines the reconstruction of homes after a disaster as an opportunity to Build Back Better, re-defining ‘better’ as an holistic and people-centred improvement in housing. It questions the humanitarian shelter sector’s emphasis on structural safety while poor sanitation, inadequate vector control and smoke inhalation are responsible for many more deaths worldwide than earthquakes and storms. The paper extends this discussion by arguing that promoting ‘safer’ for a substantial number of families is better than insisting on ‘safe’ for fewer. The overall benefit in terms of lives saved, injuries avoided and reduced economic loss is greater when safer is prioritised over safe, and it frees resources for wider consideration of a ‘good home’ and the pursuance of ‘self-recovery’. The paper is informed by field research conducted in 2017 and 2018. Finally, implications for humanitarian shelter practice are outlined, with particular reference to self-recovery. It highlights a need for adaptive programming, knowledge exchange and close accompaniment so that families and communities can make informed choices with respect to their own recovery pathways.

Keywords: structural safety, self-recovery, humanitarian shelter, house, home, recovery

Introduction

Best is the enemy of good

Italian proverb popularised in the French by Voltaire

Relief is the enemy of reconstruction

Attributed to Otto Koenigsberger by Ian Davis (Davis and Alexander, 2016: 32)

Is safe the enemy of safer?

The expressions ‘Build Back Better’ (BBB) and ‘Build Back Safer’ (BBS) are popular humanitarian shelter straplines. Championed by special envoy Bill Clinton, ‘Building Back Better’ was the ambition after the 2004 Indian Ocean tsunami (Clinton, 2006) – is also one of the Priorities for Action of the 2015 *Sendai Framework for Disaster Risk Reduction* (UNISDR, 2015). More recently Build Back Safer has been in favour (Kennedy *et al.*, 2008). At the time of the tsunami response there was a well-intentioned notion that Aceh, Sri Lanka and other affected regions should be built back better than before (Fan, 2013). The amount of money available after the tsunami – there has never been so much aid money

either before or since with US\$14 billion pledged or donated – allowed for such aspirations (TEC, 2006). However, the reality of most post-disaster responses, with low funding and limited capacity, has provoked a focus on structural safety and a rebranding to Build Back Safer.

The humanitarian shelter sector¹ hangs on to this notion that BBS is more appropriate than BBB. Although reference is made to the broader aspects of what might constitute a good house, structural safety remains dominant (Philippines Shelter Cluster, 2014). It is argued here that this is due to a misunderstanding of what we mean by ‘better’ or good. We need to define ‘better’ better.

Methodology and Sources

The discussion in this paper is informed by the qualitative findings of two recent research projects. The first, a pilot project, was funded through the Natural Environments Research Council and conducted field

research in rural communities recovering from the 2015 earthquake in Nepal and Typhoons Haiyan [local name: Yolanda] (2013) and Haima (2016) in the Philippines (Twigg *et al.*, 2017). This was followed by more substantial work on self-recovery in urban areas in Nepal and the Philippines supported by the British Academy. Both projects were funded by the Global Challenges Research Fund².

The author³ was one member of an interdisciplinary team that included structural engineers, geo-scientists, social scientists as well as the experience of practice from an international non-governmental organisation (INGO). The methods were mixed and comprised secondary information and literature review, semi-structured interviews with community members and key stakeholders, focus group discussions, building surveys and round table events in Kathmandu and Manila. Fourteen rural communities and three urban locations were visited in the Philippines and eleven rural and two urban communities in Nepal.

The initial rural study conducted time-line activities through focus group discussions. These explored both the understanding of disaster through historic memory and their definition of recovery. Disasters included drought, civil unrest, crop failure and much more; recovery meant different things to different people, from being better prepared to 'sleeping well at night'. Targeted and *ad hoc* interviews complemented the focus group discussions in each of the twenty-five rural communities in both Nepal and Philippines (Twigg *et al.*, 2017). The second urban study was closely focused on the recovery experiences of families in the five different city locations: over one hundred household interviews were conducted, and the data coded and analysed⁴.

The discussion is also informed by the experience of many post-disaster shelter responses as well as the continuing debate on Build Back Better (or Safer) and an increasing interest in self-recovery as an innovative approach to support recovery (Schofield and Flinn, 2019).

What is a Good House?

An exercise, frequently used when teaching⁵, draws out all the aspects associated with a house and a home. Regularly the list tops twenty words, each one capturing a concept that describes what a home means to its occupants. Examples include: security; protection; a source of livelihood; their biggest asset; a social hub; a place in the community or settlement; dignity and pride; the place where children grow up; a repository of generations of memories. Children are born at home; old people die at home. Interestingly (and often in a room full of engineers), the structural strength of the

building is rarely seen as a priority; even keeping the rain out can be omitted (Barakat, 2003).

The late Paul Oliver sums this up well:

[A] community is made of people; a house is a structure but a home is much more. The distinctions are not trivial, nor are they sentimental or romantic: they are fundamental to the understanding of the difference between the provision of shelter which serves to protect and the creation of domestic environments that express the deep structures of society.

Paul Oliver (1978) *'The Cultural Context of Shelter Provision'* (Oliver, 1981: 41)

If a house – a home – is destroyed by storm, flood or earthquake, it is not just the bricks and mortar that are swept away. The family loses everything in the long list of attributes that make up a home: from protection from the elements, to their livelihoods, to their sense of dignity and place. The importance of 'place attachment' is well understood viscerally (we all know what it means to be homesick) and some academic work analyses the impact of losing one's home in the event of a disaster (Kamani-Fard *et al.*, 2013).

Rebuilding a family's home provides much more than shelter: it is an essential step on the pathway to recovery. Certainly, structural safety is one aspect of this journey, but health, livelihood and general well-being are of equal and day-to-day importance. While the emotional, conscious and unconscious attachment to a home are of undeniable importance, the fabric of the house itself will also contribute directly to the recovery and well-being of a family and, by extension, a community. As well as being warm or cool and ventilated, a well-built and well-finished house will provide a barrier to vector-borne diseases through the control of rats, cockroaches and mosquitoes. The inclusion of a simple chimney will remove the smoke from a kitchen. If the new house has a corrugated iron roof, then guttering and a tank can provide a supply of clean water. A toilet or a latrine can dramatically decrease the incidence of diarrhoea and water-borne disease.

More mundanely, a new house can be an opportunity to increase size, comfort and privacy. This is particularly relevant for women and children who spend a considerable amount of time at home. For women, as well as men, it can also be the location of their livelihood – a convenience store, a location for sewing or weaving, backyard agriculture and a host of other home-based activities.

These diverse factors that constitute a 'good' house cannot be ranked or ordered. As the field research of the Promoting Safer Building project demonstrates, the relative importance of each factor will vary from place to place and from family to family. For some it is safety from the prevailing hazards; for others a source of

livelihood; for others it means being able to sleep well at night (Twigg *et al.*, 2017).

However unfortunate the circumstances, a disaster can offer an opportunity to encourage improvements in domestic building. Structural safety is just one of several aspects of 'better'. Nonetheless, it is an undeniably important one in the context of communities threatened by repeated and devastating hazards. In countries where building codes are enforced, a determined level of structural safety is, or should be, guaranteed. However, in most of the localities where humanitarian agencies work, codes are not enforced as construction is largely unregulated and vernacular. In the poorest and most marginalised locations housing is often informal, illegal and can be highly dangerous. While improving the level of safety in these places is imperative, achieving a level of safety that would satisfy any building inspector could only happen if a 'whole house' solution were to be adopted, whereby the agency is responsible for the provision of the house, from its design to execution. Apart from this being a very expensive option, there is a history of failed post-disaster housing projects, some unoccupied or abandoned, that have gone down this route (Sanderson *et al.*, 2014).

Self-recovery

It has been argued that post-disaster shelter assistance rarely reaches more than 30 per cent of the need, and is frequently in single figures (Parrack *et al.*, 2014). A majority rebuild their houses using their own resources, often incorporating the same pre-disaster vulnerabilities. They self-recover. In recent years supporting self-recovery has gained acceptance within the shelter sector and is one of the strategic approaches of the Global Shelter Cluster strategy (Global Shelter Cluster, 2018).

In 2017, a post-Typhoon Haiyan shelter project, overseen by CARE Philippines, won the Global South World Habitat Award. This was explicitly for its self-recovery approach. 16,000 houses were built, each one designed and constructed by the family, each one tailored to their priorities, needs and resources (World Habitat Award; Flinn and Echeagaray, 2016).

The argument in favour of supporting self-recovery has been covered in recent articles and papers (Schofield and Flinn, 2019; Maynard *et al.*, 2017) and is now well established as an appropriate and cost-effective approach. Here, it is sufficient to say that if self-recovery is seen as an inevitable process in many or most recovery processes, then families will rebuild using their own resources and according to their own priorities. The majority will not comply with any code. They will exercise their own agency and make choices in line with their perceived priorities. Building a house that

is 'safe' may not be high on their list of priorities. More to the point, the family may really have little to no choice: the pressures of everyday life – feeding the kids, sending them to school, reinvigorating a livelihood – all are likely to make immediate and pressing demands on a poor family's budget. A self-recovery approach to post-disaster shelter reconstruction recognises not only the right of families to the exercise of agency, but also the inevitability of the process for the majority of the population. A self-recovery approach seeks to work with the family and the community to facilitate informed choice and technical assistance (Parrack *et al.*, 2014).

The definition of a good house will vary from family to family. It will also change over time. For a family of six children, size may be a priority. For a widow living on her own it may be security and protection. For a Pakistani family it may be privacy; for a Filipino household it could be ventilation and an attractive street frontage. For people living through the trauma of an earthquake and its aftershocks, it may be structural safety – but this concern may reduce as normality resumes. In each of these examples the need for a family to be able to exercise agency and choice, based on sound information, is paramount to their recovery.

The example of families recovering from Typhoon Haiyan (2013) is an illustration of how their concept of safety did not necessarily equate with a structurally sound house (Box 1).

It is evident from the Philippines example that an approach that prioritised Build Back Safer over other aspects of a good house would not have been at all appropriate in these Tacloban *barangays*. A superficial assessment by a recently arrived team of shelter practitioners might understandably see safety as the main priority; however, it is clear that the perception of the residents is quite different.

A reflection of the humanitarian shelter sector's somewhat myopic insistence on 'safety' being the single most important issue can be seen in the conditionality of cash transfer programming. Recent shelter responses (for example, post-Typhoon Haiyan in the Philippines and post-earthquake in Nepal) have insisted on compliance with construction guidelines or codes as a prerequisite for the release of tranches of cash. However, studies have shown that satisfaction rates are likely to be much higher if the householder is allowed to choose the housing option that best suits their needs and preferences (Davidson *et al.*, 2006; Duyne Barenstein, 2008). The conditions placed on cash transfer programmes rarely allow for choice, despite there being a number of very legitimate options that would all fit within the definition of a 'better' house: a bigger house for a large family; a concrete floor for a cleaner and healthier house; a latrine; tank and guttering for rainwater collection.

Box 1. The Notion of Day-to-Day Safety in Tacloban⁶

Ask any resident of the poor and marginalised *barangays* (neighbourhoods) of San José, Tacloban City, where he or she rates safety, and more than likely it will be top of the list. Everyone knows that they live in precarious circumstances on a site that is exceptionally dangerous. After all, only a few years ago in 2013, Typhoon Haiyan caused a storm surge in the neighbourhood that was several metres high, topping the roofs of their timber and *nipa* (thatch) homes. The resulting damage is not counted in terms of houses destroyed or damaged: it is described by the residents as a 'washout'. Just the concrete floor slab was left, with debris scattered far and wide. Many died, and everyone else has a graphic survival story⁷.

The residents of the *barangays* have lived there for decades. They are the city's poorest population relying on fishing, pedicab (rickshaw) driving and informal buying and selling. A daily income of 200 pesos (£2.90) is the norm, less than the national minimum wage. None of them owns the land, occasionally renting, more normally describing themselves as squatters, living informally on private or government property. Due to their lack of secure land tenure, most are reluctant to invest in durable houses and so timber, plywood and corrugated iron sheeting are the commonest building materials. Nevertheless, the fear of eviction – until recently – was not an immediate concern.

Since Typhoon Haiyan, this feeling of fragile security of tenure has changed. These poor neighbourhoods can be found all along the coastal strip that runs from San José to the south of the city near the airport, to Anibong north of downtown. Much of this zone was declared a 'no build zone', although some areas are reclassified as 'no dwelling zone', and eviction and relocation now loom real.

Although most *barangay* residents will list safety as their top priority, observation and conversation with the residents suggest a more complicated picture. The basic Build Back Safer messages (promoted by INGOs and the Shelter Cluster) of bracing and cyclone strapping are seen in very few homes. By comparison, all homes evidence a pride in their appearance, the interiors decorated with posters, pictures and calendars, the outsides with painted walls and countless pot plants. When this question is probed, it becomes apparent that the families feel 'safe' because they know where to go if there is a storm or flood warning. On a day-to-day basis they feel quite safe. Indeed, in some locations, where half a metre of flooding is a regular occurrence, there are mechanisms for simply living with the problem.

Today the main concern is a fear of eviction and no knowledge of what relocation will mean for livelihoods. Typhoons are a regular hazard, and they have evacuated on more than one occasion since Typhoon Haiyan, returning to find their homes largely intact. It is understandable that the day-to-day need of feeding and educating their families trumps that of safety. It is also understandable that the immediate, affordable and accessible process of turning the house and garden into a home is given greater priority.

These two last examples – a latrine and rainwater harvesting – emphasise the need for integrated sectoral responses. A house is not a house without a toilet. Similarly, the parallel integration of livelihoods programming can enhance recovery. This is well illustrated by the CARE Philippines post-Haiyan project where many families incorporated tiny convenience stores (known as *sari-sari* stores) into the front facade of their homes. Others included backyard gardening and live-stock (Flinn and Echegaray, 2016).

Adequate and appropriate bathrooms, toilets and kitchens improve health through better sanitation and the removal of smoke. According to the World Health Organisation (WHO), 3.4 million people die each year from waterborne disease, the single most deadly cause of death by disease. 1.3 million die prematurely from acute lower respiratory infections caused by indoor smoke inhalation, and half a million are children under five (WHO; Langbein, 2017). By comparison, the average worldwide number of deaths by earthquakes from 2007 to 2016 was 35,173 each year (EM-DAT).

The provision of adequate quality and quantity of safe water accessibly close to the house and the requirement for good sanitation are unavoidably linked to good housing provision. The toilet and washing facilities may be attached to or even inside the house; water may be piped to the house; rainwater may be collected off the roof; mosquito mesh is installed in windows.

Saving lives is certainly of paramount concern, but injuries and economic loss are also important factors.

Table 1, with information from the EM-DAT disaster database, shows, interestingly, an inverse relationship between the number of fatalities and the numbers affected (EM-DAT).

Although the overall figures provide a persuasive argument for questioning the dominance of structural safety as the central focus of post-disaster reconstruction, closer examination suggests that a contextual nuance is needed. The figures show that rebuilding houses that are strong and safe in an earthquake-prone region is more important than storm-proof housing in the Philippines or the Caribbean. This should come as no surprise: earthquakes happen without warning and with catastrophic consequences; by comparison there should be warning of an impending storm and most people seek the safety of a storm shelter. The building typology also has important implications: a multi-storey masonry house can be fatal in an earthquake; timber or bamboo buildings are inherently much safer.

A further contextual refinement is also important: structural safety is not just about saving lives. The house represents an emotional and economic importance to the

Table 1 Average per annum figures from 2007 to 2016

	Occurrences/year	Fatalities/year	Affected/year*
Earthquakes	26	35,173	8 million
Storms	98	4,122	34 million
Flooding	161	5,553	85 million

*The affected number from the EM-DAT database includes injured and homeless

family. Although saving lives is quite correctly the humanitarian priority, this should not mask the importance of a home – and a home that survives intact – to the overall recovery.

The challenge for humanitarian shelter practice is to understand the definition, for any given context, of a house that is 'fit for purpose'. What is 'good enough'? If a self-recovery approach is followed, then this decision lies in the hands of the affected families and communities. The responsibility of the assisting agencies is to work with communities to make sure that they have the best information and knowledge that will allow them to make an informed choice. A disaster that has caused widespread damage to housing is certainly an opportunity to rebuild better and to reduce the risks associated with poor and inadequate housing. But these risks are many, and not confined to structural safety.

The current trend in multi-purpose cash transfer programming is likely to increase the obligation to provide the best possible information to assist families to make decisions on the basis of informed choice (ODI, 2015). As unconditional cash becomes more commonplace, then humanitarian agencies have an increased responsibility to complement the distribution of materials with the provision of reliable information that allows families to make an informed decision and, once the decision is made on the basis of the family's priorities, to encourage the best possible outcome (BBC World Service Trust, 2008).

This is a discussion that argues for a better understanding of what constitutes a 'good' house, considering both the priorities of the family and the probable environment of inadequate resources. It is imperative that it is never used as an argument, or a pretext, for shoddy building. It is also an argument that can only ever be used for private domestic houses, where the cash-strapped family has difficult choices to make. Moreover, there is a difficult balance to be met between responding to the priorities of the family within their means, their duty of care to their neighbours, wider family and future generations and the important consideration of not undermining national building codes. Again, the need for good information is paramount, to ensure that families are aware of the consequences of the choices they make and don't compromise the safety and welfare of neighbours and family. Needless to say, all public building should be properly designed and constructed to the standards of national codes.

Why Safer is Better than Safe

If it is accepted that structural safety is just one possible constituent of a good house, then an important question remains: what level of safety should be promoted, what

constitutes 'good enough'? This is an issue that both donors and engineers find challenging: the former because of a reluctance to finance anything that cannot be classed as 'safe'; the latter because nothing in their training prepares them for approving anything that is less than code-compliant, or safe. It is argued here that, in an approach that encourages self-recovery and recognises the multiplicity of factors that makes for a good house, 'safer' is more appropriate than 'safe'. This not only recognises the inevitability of less-than-perfect, but also demonstrates that it has wider overall benefits in terms of protecting lives and economic assets.

Safety is only ever relative. The totally safe house is a myth: tsunamis and landslides will sweep away all but the most bunker-like buildings. Engineers work to accepted levels of safety informed by a probabilistic analysis of risk. However, in the context of this discussion and the normal everyday vocabulary of the sector, 'safe' is understood to mean engineered to withstand most of the hazards that nature will throw at it, and built to an acceptable quality. It might also imply that it has been built to comply with codes, standards or guidelines.

In a humanitarian response, need always outstrips limited resources. Inevitably, hard decisions must be made that hinge on a balance between quality and quantity: a few well-built 'safe' houses for the most vulnerable families, or lower quality houses for more people. Frequently we opt for the former, targeting the most vulnerable with a product that has been pre-designed and engineered. However, we have seen that this approach can leave up to 90 per cent of the population rebuilding with the same pre-disaster poor construction practice that caused so much destruction in the first place (Parrack *et al.*, 2014).

Lifting a standard of safety from very low to a slightly higher level is a relatively low cost. By comparison, going from that slightly higher level to a code-compliant level of safety is expensive. Light-weight buildings made of timber or bamboo can be made stronger and more resistant to storms by following some very simple messages. The addition of some diagonal timbers (bracing) or strengthening the connections with hurricane strapping is relatively cheap and makes a considerable difference to the strength and stability of the house. However, it will not make it storm-proof, nor even engineered to a known wind speed. The recommendation will still be for the family to evacuate, but when they return, once the storm has passed, there will be an increased likelihood that their home and belongings will still be intact. Similarly, if improvements are made to a traditional stone and mud mortar wall by including through-stones and risers (stones that help to bind the wall together) and a small amount of cement in the mortar, then the house will be better able to resist an earthquake. There is no guarantee that it won't

collapse and cause serious injury and even death. However the risk is reduced, the cost is manageable, and the family more able to invest meagre resources into all aspects of their recovery.

Hypothetically, the argument can be expressed like this: if 1,000 houses are made slightly stronger, then the overall reduction in damage, economic loss, death and injury is greater than if 200 houses are built to a code-compliant level of safety, and 800 left extremely unsafe and vulnerable. Of course this will vary from place to place. It varies particularly with the nature of the hazard and the possible impact of building failure. It is much easier to make this argument if the collapsing building is not likely to harm anyone; it is not so easy if a low-quality concrete building might precipitously collapse in an earthquake potentially causing serious injury or even death to the inhabitants⁸.

Two considerations help to take the agony out of the decision. The first is the recognition that safety is just one of the many factors that defines a good house. It may really be the case that a healthy house is more important than a safe house especially if the prevailing hazard is not that likely to threaten life. The second is the probable lack of funds, both from aid agencies or government, or from the families themselves.

With limited resources, how best can the level of safety be improved at scale? With insufficient funds, there has to be a compromise: either not reach significant numbers, or accept safer as an adequate answer. For families with meagre resources, 'safer' is the default position. The role of local and international agencies is to optimise the degree of safety (and comfort, healthiness, etc.) through the provision of technical advice and information that allows the families to make the best possible choice.

The Nepalese government responded to the widespread destruction of the 2015 earthquake by insisting on seismically resilient house construction as a condition of the grant. Shelter was certainly a high priority for the affected families. Without doubt, much could, and can, be done to improve the level of safety of the rebuilt houses. However, the consequences of this policy were long delays causing families to put off reconstruction for up to two years, little flexibility in the design and limits on the number of storeys, disruption of traditional economic activities such as shops that require larger openings than those permitted in the designs, insufficient funds forcing families to increase their debt burden, and those without title, often the poorest, were excluded (*see Box 2*).

Further field studies in Nepal in 2018 showed some other slightly perverse unintended consequences of the government policy. In order to meet the deadline for the second cash instalment many families built the foundations and floor slab of a simple one-room building

simply to take advantage of the grant. In the city of Bhaktapur, many decided to risk not being eligible for the third instalment so that they could avoid compliance and build a taller building.

Without doubting that this policy was set with the best of intentions, in retrospect it is a very real question whether the promotion of safer might not have been a better solution than the insistence on safe. Technical training and supervision would still be of vital importance to help families to rebuild as safely as affordably possible, but the freedom to choose priorities would allow a diversity of recovery options.

While the Nepalese experience is clearly complex with the need to make difficult compromises between safety and other priorities, the Philippines illustration is much more straightforward. The 'Build Back Messages' promoted by the Shelter Cluster and most agencies were never intended to produce a storm-proof house (*Philippines Shelter Cluster, 2014*). 'Safer' was implicit; and, as can be seen from the example (*Box 1*), in some cases not seen as a priority at all.

Conclusion: Implications for Practice

Defining 'better' better has implications for the way in which the international community designs and executes humanitarian shelter responses. If that definition encompasses a holistic concept of house and home then this has to include much more than structural safety, embracing the concept of a home being healthy, spacious, a place to relax and to work, and conducive to the general well-being of the family and community.

Supporting self-recovery, now a well-accepted approach within the sector, takes the agency of the affected families as its point of departure; it also recognises that people are never passive and the self-recovery process is inevitable and starts immediately after a disaster. The improved, holistic, definition of a good house must be implicit in a self-recovery approach. The freedom to choose cannot be curbed by the agency or donor's preconceived notion of what is good or safe; however, it can be informed by good information and supported through good technical advice.

Other current trends in development and humanitarian practice also encourage a more bottom-up and participatory, flexible approach. The Grand Bargain agreement that emerged from the 2016 World Humanitarian Summit endorses the wider use of cash, an increase commitment to 'localisation', or an increase in direct channelling of funds to local actors, and encourages a 'participation revolution' (IASC). All point to the need for more flexibility and this is reflected in the increasing interest in 'adaptive management', a recognition that it is hard to get it right at the outset and that

Box 2. Why 'Safe' Is Not Appropriate, Nepal 2015

The government of Nepal gave NPR300,000 (US\$3,000) to each household with a fully damaged house. This was allocated in three tranches. The first, which did not appear until one year after the earthquake, was for NPR50,000 (US\$500). The remaining two instalments were to be released midway and on completion, but at the time of writing (December 2018) only 50% have received the final tranche and 41% have completed (HRRPa). The release of funds is conditional on an engineer's approval of the construction that had to follow government guidelines; the house design also had to conform with a catalogue of designs (NRA). The following observations refer to the appropriateness and effectiveness of this very substantial grant to the households for reconstruction of severely damaged houses in urban and rural areas of Nepal. The findings are based on field research conducted in May 2017 and July 2018.

A double penalty. Many households whose houses were destroyed or damaged by the earthquake in April 2015 were not eligible because they lack land title. These include families living on religious guthi land, families that have been living for years on government land or marginal land, grown-up offspring that have built houses on their parents' property but do not have separate title. Most of these are very vulnerable poor families. The inability to avail themselves of the grant affects them negatively in two ways: firstly, their houses, if they have managed to rebuild at all with their own resources or with loans from banks, credit cooperatives or money lenders, are not earthquake resilient or safer; secondly, their recovery is compromised through lack of financial support.

Varying building typologies. The houses in the earthquake affected areas are built of stone, brick, timber-frame, wattle and daub (mud plastered onto a lattice of timber or bamboo) as well as some more recent technologies such as confined masonry and reinforced concrete frame. This diversity of building typologies reflects the traditions and relative wealth of families. It also creates a vernacular architecture that attracts thousands of tourists to Nepal each year. The policy of only providing training for, and technically supporting, the rebuilding of stone, brick and reinforced concrete structures, excludes many other traditional and vernacular building typologies. Timber-frame and light-weight structures are inherently safer in an earthquake than masonry – excluding these traditional and vernacular building typologies is a missed opportunity to improve non-masonry houses and reduces overall safety.

Disrupting livelihoods. Houses are homes; and they are also the location of livelihood activities. Shops and tea-houses have living spaces above. A typical mountain house can have a stable for livestock on the ground floor, living space above and food storage in the roof space. However, three-storey buildings and the wide openings of the traditional shops are outside the provisions of the existing Mandatory Rules of Thumb and housing design catalogues, which are broadly guiding new building construction under the housing reconstruction grant conditions (NRA). Deviation from these would require additional engineering design, which is largely unattainable for the affected households. This has the potential to disrupt restoration of family livelihoods and rural economy. This has very serious implications in a country where many able-bodied youth and men have migrated abroad in search of jobs or are employed as migrant workers, leaving the burden on women-headed households to sustain themselves and their families with home-based income generation activities.

Repair and retrofit. The first and second floors of a great many three-storey rural stone houses were badly damaged beyond repair. Families have reduced such houses down to single storey, or sometimes just a low wall, and constructed light-weight walling and a roof on top of these existing masonry walls. Thus they have constructed a relatively safe low-cost house. With technical support on effective bracing of the timber structure, this safety could be significantly enhanced. However, in order to receive the grant, they are required to entirely destroy their recently rebuilt home and borrow extra resources to meet the high cost.

A good house. The current policy only promotes the improvement of seismic safety of masonry or reinforced concrete buildings. However, a 'good' house – or the principle of building back better – must take a broader and more holistic approach, promoting, among other things, improved comfort and health conditions. There is no way of knowing when the next earthquake will strike, however it is widely recognised that smoke from internal open fires damages the lungs of both young and old and causes numerous deaths from acute respiratory diseases. Similarly, no house is complete without a toilet. Reconstruction is an opportunity to improve housing on many fronts.

Indebtedness. It is generally recognised that the housing reconstruction grant of NPR300,000 (US\$3,000) is not enough to rebuild a home to the required safety standards. The Housing Recovery and Reconstruction Platform estimates that the average cost of a new home is US\$6,750 (HRRPb). In order to avail themselves of the money, families are becoming indebted – or increasing their already existing debt burden. In this respect, families have little control over their own priorities as there is no recognition of the concept of 'safer' as an appropriate way of improving safety at a cost commensurate to the family's means. According to one survey the rate of indebtedness rose from 1 per cent in January 2017 to 66 per cent in December 2017 (*Inter-Agency Common Feedback Project, 2017*).

needs and priorities have a temporal aspect, changing as time and circumstances move on (ODI, 2016). Although there is no one Sustainable Development Goal (SDG) that directly addresses the worldwide housing crisis, there are several that directly align with the need for a broad and holistic approach to post-disaster reconstruction of housing. These include, among others, good health and well-being (SDG 3), clean water and sanitation (SDG 6) and affordable and clean energy (SDG 7).

In conclusion, some of the implications for practice are:

A relaxation of conditions, or 'smart conditions'.

With cash transfer programming now becoming the norm, the conditions set can no longer be confined to

structural safety. If a family's right to choose is accepted, then improving their house through sanitation, vector control and smoke removal should be equally important. Increasing privacy and space should also be seen as valid, as is the use of the house as a location for livelihood activity. While unusual in the sector, this idea of allowing affected families to choose their own conditions, or allowing an array of 'smart conditions', is not entirely new. One example is a successful recovery project in a coffee-growing area of Colombia after an earthquake in 1999. The families were allowed to choose from a wide range of services that they could direct towards the options that best aligned with their own needs and priorities (Davidson *et al.*, 2006).

Knowledge exchange for informed choice. The role of assisting organisations has to shift from the provision of products and materials to the delivery of information that allows families and communities to make informed choices. There should be an emphasis on exchange, learning from one another and from indigenous knowledge, and understanding the likely self-recovery pathways.

Training and accompaniment. As humanitarianism moves from product to process, the responsibility of the aid agency shifts towards information and training. For the shelter professional this now goes beyond technical training in construction practice to include health, protection, the provision of livelihoods and so on. However, we know that just leaflets and trainings are not enough (van Wijk and Murre, 1995). There needs to be a much closer accompaniment and supervision with the community. This has been done successfully with ‘roving teams’ that comprise skilled members of the community along with community social mobilisers. These teams are charged with supporting the households in their neighbourhood as they take difficult initial decisions and providing them with technical know-how as they rebuild. They also serve as shelter ambassadors and the voice of the community, a first line of feedback that allows for more flexible programming.

The humanitarian-development nexus and disaster risk reduction. Previously referred to as the humanitarian-development continuum or humanitarian pluralism, this recognises that all humanitarian aid should have an eye to medium to long term development and preparedness for the next event (IASC). The shelter sector, and in particular the proponents of self-recovery, see everything, except perhaps the immediate emergency distribution of tarpaulins, as a step towards eventual permanent recovery.

Beyond the immediate imperatives of saving lives, supporting the injured and bereaved and preventing hunger and disease, much of the humanitarian effort is directed towards sustainable recovery. Shelter, or the provision of house and home, is perceived as one important measure of community recovery. The 2011 Humanitarian Emergency Response Review described shelter as ‘critical to health, employment, family and safety’ but also referred to it as ‘one of the most intractable problems in international humanitarian response’ (Ashdown, 2011). Supporting families in the exercise of their own agency while simultaneously improving the safety and healthiness of housing, is a challenge that will, at best, deliver recovery as well as long-term developmental impact.

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Notes

- 1 The recovery of housing after rapid-onset disasters as well as protracted conflict and displacement is referred to as ‘shelter’. The shelter sector is coordinated by the Global Shelter Cluster, jointly led by the IFRC and UNHCR.
- 2 The Promoting Safer Building team is a research collaboration with the Overseas Development Institute, CARE International UK, University College London, the British Geological Survey and Loughborough University.
- 3 The author, who is a qualified architect and a builder, draws on fourteen years of experience working as a practitioner in the shelter sector. While the views expressed here are his own, they are informed by the field work, a continuing debate on the definition of Build Back Better and the increasing interest in self-recovery.
- 4 A much fuller analysis of the urban data will be published shortly in the *Journal of the British Academy*.
- 5 The author uses this exercise during the Shelter after Disaster module of the Development and Emergency Practice MA, Oxford Brookes University.
- 6 The analysis in this section is from the findings of the Promoting Safer Building urban study in Tacloban, Philippines.
- 7 Estimates vary, but around 6,300 are known to have died, the majority in Tacloban (IFRC).
- 8 The author is indebted to Professor Anastasios Sextos, Bristol University, for inspiring conversations that helped inform this debate. There is quantitative engineering analysis that shows that improving the margin of safety is more cost effective than insisting on safe. Sadly, it is beyond the scope of this paper.

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