Shelter assistance: gaps in the evidence

Discussion Paper

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Abstract

This discussion paper provides insights into the funding, reach and potential impact of Shelter Cluster-activated responses to rapid-onset disasters between 2007 and 2017. It highlights the information and knowledge gaps and challenges related to understanding impact faced by the Global Shelter Cluster (GSC) and suggests initial points for improvement in gathering and managing information about the sector's impact.

1. Introduction

There is little quantitative data demonstrating the impact of humanitarian shelter assistance as part of recovery. This study seeks to address this gap by presenting and discussing existing numerical evidence about the reach and impact of post-disaster programmes implemented by the international humanitarian shelter sector, including those that seek to support 'self-recovery'. This paper understands shelter self-recovery[1] as a process, whereby people meet their shelter needs using their own resources and knowledge with little or no external formal assistance (Twigg et al., 2017; Maynard et al., 2017; Maynard et al., 2016; Parrack et al., 2014). Self-recovery can also include using the local informal building sector and the use of salvaged materials (Parrack et al., 2014).

The sector's evidence on, and knowledge of, the self-recovery process is mainly anecdotal. Studying existing evidence on the impact of shelter responses should clarify what is known about the coverage of shelter assistance; the impact of the activities the sector is undertaking;

[1] Shelter represents only one aspect of recovery, alongside other elements, such as livelihood, psychosocial and health recovery. Measuring recovery as a whole needs to consider these other aspects.

and how its activities can complement local informal assistance and the recovery strategies of disaster-affected populations. The study provides insight into the gaps in evidence and understanding within the sector, so that further work can be done to improve the process of evidence collection. In doing so, the sector should be better able to avoid duplicating activities best undertaken by disaster-affected people themselves (see Schofield and Flinn, 2018; Davis, 1978), ensure the greatest impact of the assistance the sector provides and ensure that efforts and resources are directed appropriately.

2. Methodology

This paper draws on evidence gleaned through a desk review and research. The desk review gathered information about the impact of shelter assistance for disaster-affected populations (by 'disasters' we mean disasters triggered by natural hazards). Impact is understood here as a combination of coverage (the number of people who received shelter assistance) and quality (how timely, efficient, effective and appropriate the assistance was in meeting people's short-term shelter needs and contributing towards meeting medium- and long-term needs) (see Shelter Projects, 2017; Proudlock et al., 2009).

The EM-DAT[2] database was used as an initial platform to identify disasters to be considered in the review.[3] To keep the sample manageable, the research team decided to extract only disasters occurring between 2007 and 2017. This first filter **(F1)** produced 11,164 disasters. The scope was further limited to hydro-meteorological and geological disasters (earthquakes, landslides, landmass movements, floods, storms, typhoons). This excluded epidemics, droughts, extreme temperatures, insect infestations, volcanic eruptions and wildfires. This second filter **(F2)** resulted in 7,895 disasters. A third filter was used to identify disasters where

[2] EM-DAT: The Emergency Events Database (www.emdat.be).

[3] The UNISDR DesInventar database was also considered. EM-DAT and DesInventar are the most well-regarded international databases (Osuteye et al., 2017). This study uses EM-DAT because it draws on data from the UN, governmental and non-governmental agencies, insurance companies, research institutes and press agencies, while DesInventar draws more on national and local newspapers and police and public health reports (ibid.). The former was considered more relevant for a study on information and knowledge held by international humanitarian organisations. Not all countries and disasters are represented in the DesInventar consolidated GAR database (see DesInventar, 2018).

the Global Shelter Cluster (GSC)[4] co-ordination mechanism was formally activated.[5] This filter reduced the sample further, as well as providing a certain level of consistently accessible data. In theory, the GSC mechanism is activated when governments ask for it and/or when it is considered that existing national response capacities in affected countries are overwhelmed and cannot cope. Politics also plays a part in GSC activation, though further discussion of this was beyond the scope of the study. This third filter **(F3)** produced 48 disasters. Once the sample had been determined a desk review was carried out of 95[6] online documents containing statistical and qualitative information. The EM-DAT database, statistics from the Financial Tracking Service (FTS) and Post-Disaster Needs Assessments (PDNAs), reports, project or programme evaluations and case studies were reviewed, with the aim of establishing the main sources of information and ensuring that sufficient data was available on each disaster specific to shelter assistance and funding. The most prominent easily accessible sources were case studies, PDNAs, the GSC Shelter Projects[7] series and the FTS[8] database. This fourth filter **(F4)** left 22 disasters with sources of information considered consistent enough that calculations could be made with some confidence (see Table 1).

[4] The GSC is part of the Cluster Approach, which was adopted in order to improve the effectiveness of humanitarian response through greater predictability, accountability, responsibility and partnership. By clearly defining organisations' roles and responsibilities, the Cluster Approach helps to ensure predictability and accountability, and to build a more structured and professional humanitarian aid system (GSC, 2017).

[5] Informal cluster-like structures can sometimes be formed in the aftermath of a disaster, but these are not recognised as a GSC shelter cluster unless they are set up formally with a Shelter Cluster Co-ordinator, following GSC guidelines.

[6]Documents were categorised into five types: Needs Assessments (11), Evaluation/Assessment Reports (26), Advocacy/Policy Documents (6), Summary Documents (36) and Response Plans (16). For detail on what types of documents fell into these categories, see Annex 1.

[7] *Shelter Projects* is a compilation of case studies illustrating some of the project options available to agencies and institutions working in the humanitarian shelter sector. Shelter Projects Working Group, (GSC, 2018).

[8] The FTS is a centralised source of data and information on humanitarian funding flows. Government donors, UN-administered funds, UN agencies, NGOs and other humanitarian actors and partners all exchange data and information with FTS.

Table 1: Disasters reviewed

Case #	Year	Disaster	Country	Number of houses badly damaged or destroyed
1	2007	Storm Sidr	Bangladesh	2,471,155
2	2008	Storm Nargis	Myanmar	800,000
3	2009	Earthquake	Indonesia	250,000
4	2010	Flood	Pakistan	1,894,530
5	2010	Earthquake	Haiti	313,533
6	2011	Flood	Pakistan	1,125,555
7	2011	Flood	Lesotho	2,500
8	2012	Storm Pablo	Philippines	4,6831
9	2012	Flood	Bangladesh	36,0862
10	2013	Typhoon Haiyan	Philippines	101,2790
11	2013	Earthquake	Philippines	7,9217
12	2013	Flood	Mozambique	3,658
13	2014	Flood	Bangladesh	62,6009
14	2015	Earthquake	Nepal	89,3509
15	2015	Flood from Cyclone Komen	Bangladesh	17,4478
16	2015	Cyclone Pam	Vanuatu	16,256
17	2016	Flood	Bangladesh	25,0000
18	2016	Earthquake	Ecuador	35,198
19	2016	Cyclone Winston	Fiji	31,211
20	2017	Flood	Bangladesh	6,775,352
21	2017	Flood	Nepal	65,000
22	2017	Storm Enawo	Madagascar	39,253

2.1. Limitations

The complexity of a rapidly changing humanitarian environment and potentially biased, inaccurate, inconsistent and/or incomplete information pose significant challenges for

monitoring and quantifying the impact of shelter assistance (Altay and Labonte, 2014). These issues are further complicated by differences in agency mandates, objectives, programmes, terminologies and working language, all of which lead to diverse forms of information that can be difficult to exchange and merge between agencies (Warner and Obrecht, 2016). Although the quantity of shelter response documentation has increased in recent years, shelter interventions have typically been an under-researched aspect of humanitarian response (Maynard et al., 2016; Peacock et al., 2007). Furthermore, publicly available information about shelter interventions is programme-focused and tends not to consider the long-term impact of programmes (Maynard et al., 2016; Maynard et al., 2017).

These limitations in the evidence base were reflected in this desk review. The EM-DAT database does not capture all those affected by disasters (GHA, 2017) or record processes or changes that take place post-disaster. The data available in humanitarian response documentation (e.g. reports, appeals, evaluations) has already been processed by the organisations concerned, and may therefore not be entirely objective. Organisations that document this information usually focus on the people they are assisting directly, not the contributions they are making to the disaster response as a whole.

It was rare for all the necessary information to be available in one report – this is probably due to double-counting and difficulties in arriving at consistent figures between the statistics provided by national governments, the media, local (and other international) organisations and other sources and opinions. For this study, therefore, data had to be identified and combined across sources to obtain averages and comparable categories. Important numbers, such as people affected, varied between sources: for example, the number of people affected by the 2016 Ecuador earthquake varied between 380,000 and 750,000 (see EM-DAT, 2018; OCHA, 2016; Venable, 2017). Even within the same report, numbers can vary significantly; in one report, for example, the number of people recorded as having been displaced by a flood varied by as much as 32,600 (GSC, 2013). When figures were too disparate between more than three documents available on the disaster, the disaster concerned was discounted.

Project reporting rarely reached the level of detail necessary to understand the impact of interventions. For example, project impact was often measured using the number of people

benefiting from a programme, with the assumption that this includes women, men, girls and boys. However, shelter kits and materials and cash distributions are handed out to households, not to each individual within a household. This distinction complicates evidence of impact because it can inflate the overall number of people reached, and creates ambiguities about how the benefits of each shelter kit are distributed within a household. This study used the number of houses badly damaged or destroyed[9] as a proxy indicator of shelter needs as these were the most consistent figures across the data sources. It was considered safer to assume that one damaged house is equal to one household[10] with shelter needs than to use the disparate figures presented by different reports, particularly as, more often than not, they identified the number of people with shelter needs targeted by the organisation, rather than the overall portion of the population with shelter needs.[11]

Challenges in gathering, standardising and then analysing the information collected were another considerable barrier to achieving quantitative rigour. The aim here is to indicate what current publicly available data *suggests* about the coverage – and to a certain extent quality – of shelter assistance, and see what conclusions can be drawn, as well as identifying the gaps in evidence about shelter assistance.

3. Findings

Overall, the 48 Cluster-activated responses represent 6%[12] of the people affected by hydro-meteorological and geological disasters counted by the EM-DAT database between 2007 and 2017. By extension, 94% of people affected by disasters were recovering in contexts where the

[9] 'Badly damaged' or 'destroyed' are commonly used categories by the shelter sector to identify the impact level of a disaster (for further information see the PDNA guidelines: http://siteresources.worldbank.org/INTDISMGMT/Resources/3housingandeducation.pdf). A single damaged house does not mean that the household living there is incapable of recovering their home without assistance, but it may have a variety of needs and vulnerabilities. .

[10] This estimate does not take into account the fact that, in urban contexts, there will be multiple households within multi-storey buildings. This distinction is not clear in the data.

[11] For the purpose of the study, it was also helpful to estimate the overall number of people with shelter needs. To do this, the number of badly damaged or destroyed homes was multiplied by 5.5 (the mean of the global household average of 2–9; UN, 2017).

[12] The EM-DAT database results suggest that about 2.2 billion people were affected by hydro-meteorological and geological disasters between 2007 and 2017, 138 million of whom were in the 48 countries identified as cluster-activated. This represents 6% of the total population affected between 2007 and 2017 by these forms of disaster.

GSC co-ordination mechanism was not in place, and where funding from international appeals was considerably limited (see the following section). This supports other studies (Shelter Projects, 2017; Parrack et al., 2014; Twigg et al., 2017) that argue that the vast majority of people impacted by disasters are recovering without formal international humanitarian emergency shelter assistance.

3.1 Funding

Overall allocation to the shelter sector and the gap between what is requested and allocated

Not all international funding is co-ordinated through formal mechanisms established for shelter responses such as the GSC. For example, funding can sometimes go directly to a single organisation, working with country partners and carrying out a response without using the Cluster co-ordination mechanism. However, there is a noticeable difference between the levels of funding that go to Cluster-activated responses and other responses despite similar numbers of people affected. To demonstrate this, where possible[13] non-Cluster-activated examples have been identified using information from the desk review (see Table 2). Generally, the results suggest that a higher proportion of international humanitarian funds are received by GSC-activated responses. If the disasters had affected a much higher number of people, the difference in funding would be understandable. However, the disasters identified to demonstrate the funding differences in Table 2 are purposefully chosen because of the similarity in the number of people affected. This suggests that there may be other reasons why GSC-activated disasters receive more funding than others. Funding can be mobilised by media attention and political interest, and internal national funding may not be monitored through FTS or GSC. These differences complicate the funding context and blur the evidence. Nonetheless, they should not detract from the analysis of the evidence that is accessible, such as that shown in Table 2.

[13] Non-Cluster-activated disasters were excluded from the overall sample (Filter 3). However, to demonstrate funding patterns some information on non-activated disasters was searched for. The parameters of this additional search were that the number of people affected was similar to the number of people affected by GSC-activated disaster responses, and that information about funding could be easily accessed.

Table 2: Differences in funding to cluster-activated and non-cluster-activated responses

Cluster activation	Date	Country	Type [14]	Number of people affected	Emergency funds received form international appeal (US$)	Funds available per person affected (US$)
Non-cluster-activated responses	2009	India	(F)	5,986,008	72,679	0.0121415
	2012	India	(F)	4,210,860	375,000	0.0890554
	2014	Philippines	(C)	13,068,983	5,174,378	0.3959281
	2011	India	(F)	12,004,069	518,074	0.0431582
	2011	Thailand	(F)	10,216,110	2,868,758	0.2808073
Cluster-activated responses	2016	Ecuador	(E)	389,511	26,697,422	68.54086791
	2007	Bangladesh	(C)	8,978,766	115,643,945	12.87971476
	2015	Nepal	(E)	5,642,150	331,295,859	58.71801689
	2011	Pakistan	(F)	5,400,755	117,820,314	21.81552653
	2017	Bangladesh	(F)	7,502,875	17,868,836	2.381598521

Of the funding available from international humanitarian responses (from public and private grants as shown by FTS) that does go to GSC-activated disasters, only a portion is allocated to shelter assistance. In 2007, 2.4% of all humanitarian funding went to the Emergency Shelter and Non-Food Item (NFI) sector. In 2017 the figure was 2.9% (FTS, 2018; see also Table 3).

[14] (C) Cyclone; (F) Flooding; (E) Earthquake; (T) Typhoon

Table 3: Emergency funds allocated to emergency shelter and NFI sector in 9 GSC-activated responses between 2007 and 2017[15] within the first year

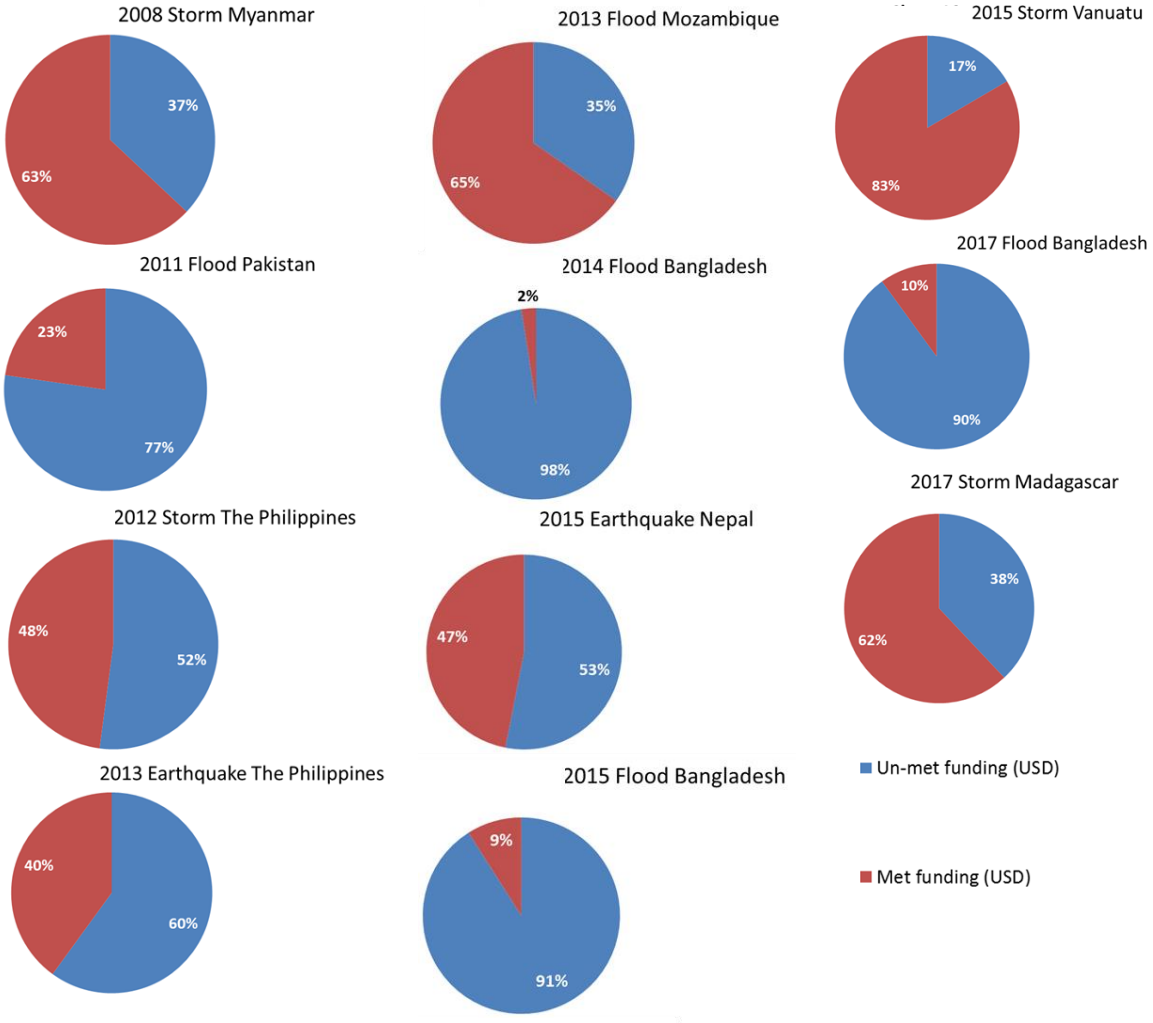
Date, disaster and country[16]	Number of people affected (EM DAT)	Emergency funds contributed (US$)	Funds allocated to shelter sector (US$)	Percentage of total funds allocated to the shelter sector (US$; from FTS, 2018)	Emergency funds contributed (US$)	Funds allocated to shelter sector (US$)	Percentage of total funds allocated to the shelter sector (USD; from GSC, 2018)	GSC Source
2007 (C) Bangladesh	8,978,766	215,214,297	7,974,560	3.71%	241,700,000	126,000,000	52.13%	[1], [4]
2008 (C) Myanmar	2,420,000	607,329,482	55,850,756	9.20%	187,000,000	20,300,000	10.86%	[7]
2010 (F) Pakistan	20,363,496	2,660,453,705	188,871,050	70.99%	1,018,500,000	1,600,000	0.16%	[10], [12]
2011 (F) Pakistan	5,400,755	261,714,837	52,357,902	20.01%	170,000,000	31,840,407	18.73%	[18]
2012 (F) Bangladesh	5,398,475	5,848,778	No data	N/A	1,778,730	66,565	3.74%	[27]
2013 (E) Philippines	3,222,224	No data	No data	N/A	15,140,883	2,844,201	18.78%	[34]
2015 (E) Nepal	5,642,150	535,258,699	86,686,633	16.20%	241,000,000	46,000,000	19.09%	[39]
2016 (E) Ecuador	389,511	45,244,114	8,312,194	18.37%	7,942,000	2,080,000	26.19%	[45]
2017 (F) Bangladesh	7,502,875	28,935,555	2,185,930	7.55%	3,684,478	300,000	8.14%	[52]

[15] Both FTS and data from GSC sources are presented in this table. Funding information on some large disasters such as Typhoon Haiyan in the Philippines was not considered consistent enough to be included (and was not available on FTS). The GSC sources can be identified with a number next to each statistic. The numbers refer to the 56 different documents used to build the case for the 22 disasters reviewed (see Annex 2): 6 needs assessments, 17 evaluation/assessment reports, 3 advocacy documents, 20 summary documents and 10 response proposals.

[16] (C) Cyclone; (F) Flooding; (E) Earthquake; (T) Typhoon

The funding required to meet shelter needs is rarely matched by the funding allocated in Cluster-activated responses. Analysis of funding for 11 Cluster-activated responses[17] (see Figure 1) shows that, on average, funding allocated to shelter responses is 40% of the funding needed.

Figure 1: Percentage of funding needs met and unmet for 11 emergency shelter Cluster-activated responses to disasters between 2007 and 2017[18]



[17] Selected for analysis because of availability of information on overall funding needed and allocated.
[18] GSC data collated by the authors. FTS has no information on requested funds, only on committed and contributed/allocated funds.

3.2. The nature of Shelter Cluster assistance

Type of shelter assistance

Traditional shelter responses (see OCHA, n.d.; Maynard et al., 2016) typically involve NFIs (non-food items) and plastic sheeting or tents in the emergency phase, to meet basic needs, and then temporary or transitional shelters (t-shelters), shelter kits of materials and tools, technical support (information and guidance) and training, in the early recovery phase. NFIs can include blankets, sleeping mats and plastic sheeting to protect from rain, sun, wind and cold, as well as cooking equipment, anything necessary for personal hygiene and objects such as jerry cans to collect drinking water and keep it safe from contamination (IASC, 2008; IASC, 2006).[19] Clothes, or material for making clothes, and shoes may also be included, and women and girls need sanitary supplies (IASC, 2006). NFIs can be distributed as single objects and in kits, so while one family might receive a bucket, this does not mean they have also received a blanket, a toothbrush or a spoon, for example. NFI distributions are inconsistent in their components and vary in quality from agency to agency.

The results of the desk review demonstrate that, as a form of emergency shelter assistance, NFIs are distributed to the largest number of people (in relation to other forms of emergency shelter assistance) and are a component of every response. This is not the case for other forms of shelter assistance, such as CGI sheeting, shelter kits and pre-fabricated shelters, which have much lower coverage (see Figure 2). The documents reviewed did not provide the level of detail required to understand the number of households reached with NFIs that have also received other forms of shelter assistance. There is therefore no guarantee that double-counting has been avoided in the analysis, which also makes it difficult to be confident about the total number of households reached in each response. However, when NFIs are removed from the equation, the coverage of these responses is considerably reduced. From the responses used to build Figure 2, the total number of households reached was 6,669,014. Without NFIs, that number falls to 3,859,109.

[19] Although hygiene, sanitation and water-related objects/supplies are considered part of WASH responses, here they have been included in the discussion because they are often included in combined NFI kits.

Figure 2: Types of assistance provided within first year: combined figures from 22 shelter responses between 2007 and 2017[20]

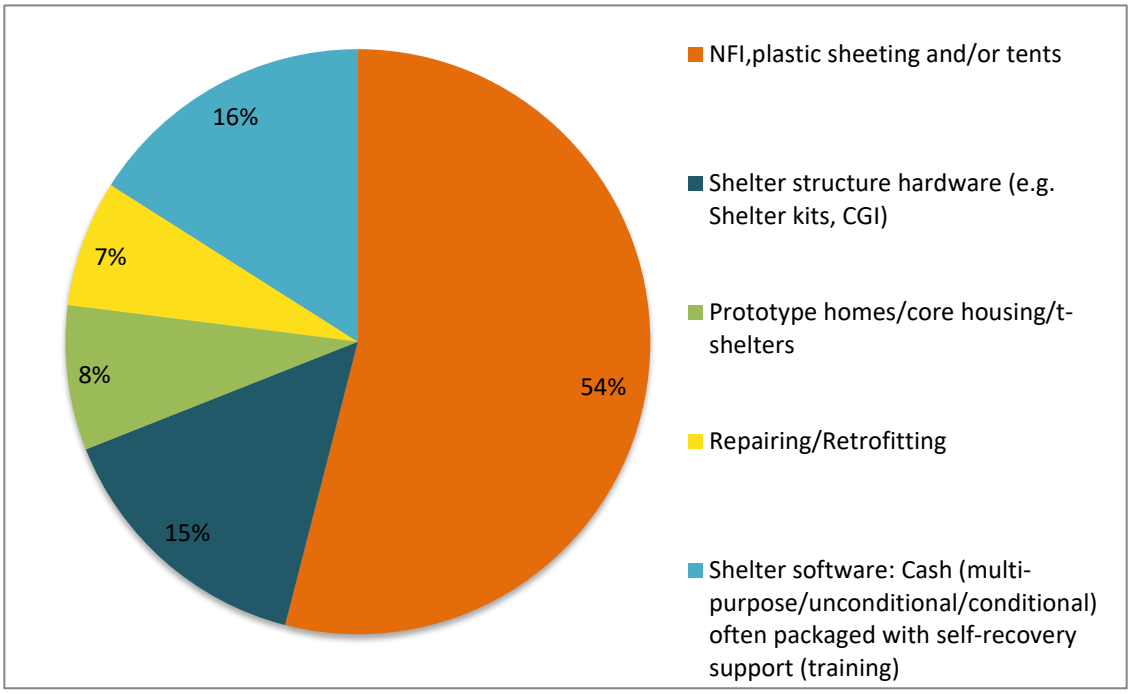


Figure 2 shows the limited use of components such as cash and reconstruction guidance in the form of information dissemination and training. While both are becoming increasingly important aspects of shelter response, evidence of the distribution and reach of these forms of shelter assistance was very difficult to find, either because information was not available, or was inconsistent in the documents reviewed. Technical guidance most often refers to structural safety, safer construction methods, legal guidance on land tenure and/or advice on reducing hazards in the space around the home. Hardly any numerical information was found on when and what technical guidance was distributed, and no impacts could be discerned. Although it is known that technical information and guidance is sometimes informally provided during the emergency phase, clear and formally agreed technical guidance usually takes longer to develop. It is therefore often distributed in the early recovery phase and later as Build Back Safer/Better (BBS/B) messages (GSC, 2018).[21]

[20] For sources used to collect information on each response, see 56 documents in Annex 2. Key documents were taken from GFDRR, Relief Web, GSC, UNISDR and Parrack et al., 2014.
[21] See, for example, '8 Build Back Safer key messages available' (https://www.sheltercluster.org/pacific/documents/8-build-back-safer-key-messages-english).

BBS/B messages are ideally distributed during 'the recovery, rehabilitation and reconstruction phases after a disaster to increase the resilience of nations and communities through integrating disaster risk reduction measures into the restoration of physical infrastructure and societal systems, and into the revitalization of livelihoods, economies, and the environment' (UNISDR, 2017: 6). Of the responses studied to build Figure 2, more evidence was found for software components of shelter assistance in the more recent responses, suggesting that there is a general shift away from pre-fabricated shelters towards shelter software and support for self-recovery (see Annex 3).

Measuring the impact of each of these forms of shelter assistance has been a challenge for the sector (Shelter Projects, 2017). It has been impossible to identify double-counting (e.g. where a single household receives assistance from two separate shelter interventions). The statistics do not shed light on how each shelter assistance component is influenced by other reconstruction processes happening in parallel, which may become either integrated into the existing recovery pathway of each disaster-affected individual or nullified by it (for example, where households choose to rent a space rather than rebuild, or choose to sell the CGI sheets given to them and use the money for a purpose other than shelter). Case study examples demonstrate these knowledge gaps. Typhoon Pablo in the Philippines in December 2012 destroyed just over 46,800 homes. The emergency shelter response to the typhoon mainly comprised plastic sheeting and emergency kit distributions. Recovery assistance included shelter kits. However, the majority of materials used to meet shelter needs were sourced from local markets or forests, or salvaged and recycled by affected people using their own means (AusAid, 2013: 398). NGO- and UN-sourced materials for shelter recovery represented only a very small portion of materials used to rebuild. There is no information on, or capacity to track, how NGO or UN materials complemented salvaged materials or materials available on the market. It was also impossible to say whether purchased materials met the quality standards needed to ensure the level of safety stipulated in the technical guidance. A quarter of the people who had received both emergency and recovery assistance were still living under plastic sheeting in October 2013, almost a year after the disaster (AusAid, 2013: 37), but it is not clear why these people were not able to – or chose not to – move to more durable shelter materials.

Another example relates to the dissemination and impact of BBS/B messages and technical guidance. It is unclear how support to self-recovery through technical messaging is transmitted by agencies and received by beneficiaries (Parrack et al., 2014), or how efficiently and effectively this advice is being taken up in local building practices over time. Initial reflections and studies have shown that changes to local building practices are influenced by local economic conditions and resources, as well as perceived risk, self-confidence, capacity, culture, beliefs and policies (Twigg et al., 2017; Opdyke, 2017; Turnbull et al., 2015; Kennedy et al., 2009). We understand very little about how, or to what extent, the shelter sector has responded to these influences. Surveying safer reconstruction techniques identified in beneficiary and non-beneficiary homes in multiple years after a disaster could give some indication of changing building practices, and whether these shifts are becoming part of a construction norm or are only present among direct beneficiaries of BBS/B campaigns.

The objective of shelter assistance is to provide a safe, secure and dignified living environment for people affected by disasters or conflict. The shelter sector sometimes turns to product-based[22] responses to meet this objective as they are a ready-made, measurable solution that can be carefully designed by an engineer or architect in isolation from the disaster context. Parrack et al. (2014) argue that designs for whole shelters, one-off prototypes and housing models fail to consider basic needs, cultural appropriateness and long-term resistance to everyday hazards and weathering. They may also require materials for maintenance that are not available locally, and can become sub-standard and potentially dangerous permanent homes (Kennedy and Newby, 2018; Parrack et al., 2014). The results of the desk review demonstrate that product-based responses have very low coverage (see Table 4).

Table 4: Percentage of affected households provided with product-based shelter assistance delivered through formal shelter cluster responses

[22] Product-based shelter response comprises core shelters, t-shelters or ‘permanent housing’. These are often one-room shelters.

Date, disaster and country[23]	Houses damaged or destroyed	T-shelters and homes rebuilt	% coverage
2007 (C) Bangladesh	2,471,155	20,700	0.84%
2008 (C) Myanmar	800,000	13,125	1.64%
2009 (E) Indonesia	250,000	52,000	20.80%
2010 (F) Pakistan	1,894,530	516,993	27.29%
2010 (E) Haiti	313,533	39,219	12.51%
2011 (F) Pakistan	1,125,555	611,229	54.30%
2011 (F) Lesotho	2,500	15	0.60%
2012 (C) Philippines	46,831	400	0.85%
2013 (T) Philippines	1,012,790	156,390	15.44%
2013 (T) Philippines	79,217	1,500	1.89%
2014 (F) Bangladesh	626,009	200	0.03%
2015 (F&C) Bangladesh	174,478	5,283	3.03%
2016 (C) Fiji	31,200	300	0.96%
2017 (F) Bangladesh	6,775,352	419	0.01%
		Average	10%

Even where there is significant coverage, impact may be limited. A study of IFRC's shelter intervention in the aftermath of the Padang earthquake in Indonesia showed that 50% of t-shelters were either unoccupied or being used as shops or warehouses at the time of the evaluation (IFRC, 2011). The evaluation took place almost two years after the earthquake, giving people ample time to move into the transitional shelters. The evaluation also found that the approach used 'crowded out a larger and arguably more appropriate distribution of cash grants – and/or material distributions to support self-recovery – with technical assistance' (IFRC, 2011). An evaluation of the response to Cyclone Mahasen in Bangladesh in 2013 likewise demonstrates the limitations of product-based shelter responses. The majority of households surveyed (81%) preferred help to repair their homes, rather than a new house (GSC, 2013: 17). The same evaluation found that affected households saw their first priorities as cash, materials (CGI and timber) and tools (GSC, 2013: 17).

[23] (C) Cyclone; (F) Flooding; (E) Earthquake; (T) Typhoon

Although there is clear evidence against the provision of pre-fabricated shelters in favour of providing materials, cash and information and letting people choose how and where to rebuild, there are significant challenges in monitoring and ensuring the quality of reconstructed homes. It is impossible to guarantee absolute safety and security with any type of shelter assistance, although the shelter sector continues to debate what level of physical safety it should be responsible for. As the sector engages in this debate, it should also consider whether it currently has the capacity to assess and monitor the levels of safety and quality of construction it has promoted in responses so far, for example by using BBS/B messaging, the impact of which we know little about (see also Turnbull et al., 2015).

Timing of shelter assistance

There is often an assumption that long-term or permanent housing recovery does not begin until several weeks, months and even years after a disaster. However, research demonstrates that self-recovery often starts within hours (Twigg et al., 2017; Miranda Morel, 2017). People will rebuild their homes as soon as they can, with or without formal assistance and technical guidance. What happens in the time between the disaster and the intervention of shelter agencies can determine the future safety of the rebuilt home. Shelter assistance may only reach people after they have already made critical decisions about the reconstruction of their homes. Findings from the desk review indicate that shelter projects started at least three weeks after a disaster (see Table 5). Interviews with disaster-affected families in the Philippines and Nepal show that households would have welcomed technical advice earlier, as well as support throughout the reconstruction process (Twigg et al., 2017).

Table 5: Timing of shelter projects planned, implemented and completed after disasters

Date, disaster and country	Project	Type*	Cost** (US$)	Target population (HH)	Total planning and prep-time (# months)	Start of implementation (# months after disaster)	Completion of project (# months later)
2008 (C) Myanmar	P1	(a)*	650	1,658	n.d.	12 +	n.d.
	P2	(a)*	1,570	533	7	12 +	n.d.
2009 (E) Indonesia	P1	(b)*	275	750	4	6	7
	P2	(b)*	330	3,400	12	8	12
2010 (F) Pakistan	P1	(a)*	n.d.	n.d.	n.d.	n.d.	15 (100,000 shelters)
	P2	(a)*	1,693	5,350	7	12 +	21
2010 (E) Haiti	P1	(a)*	990	10,518	n.d.	n.d.	33
	P2	(a)*	4,000	500	9	n.d.	29 (300 houses)
2011 (F) Pakistan	P1	(a)*	814	4,624	7	7	n.d.
	P2	(a)*	n.d.	887	n.d.	n.d.	n.d.
2012 (T) Philippines	P1	(a)*	550	1,823	1–3 weeks	3	12
	P2	(a)*	2,750	6,000	n.d.	4	11 (70% core houses)
2013 (T) Philippines	P1	(b)*	450	n.d.	4	6	Forecasted: 15
	P2	(b)*	246–429	16,079	1	4	7
	P3	(a)*	1,086–1,596	4,462	1–2	5 (pilot)	15
2015 (E) Nepal	P1	(b)*	160	15,480	7	8	10
	P2	(b)*	150	20,000	1–3 weeks	1	9
	P3	(b)*	450	5,065	1–3 weeks	1–2	6
2016 (E) Ecuador	P1	(b)*	340	3,290	1	1–2	4 (phase 1 distribution)

* Type of assistance: (a) Product construction. This refers to product-based responses to build core shelters, t-shelters or 'permanent housing'. They were often one-room shelters with a maximum area of 24m^2; (b) Support to self-recovery. This refers to assistance in the form of materials, cash and technical guidance.
** Cost refers to US$ per household for material and labour as well as project costs (e.g. transport). These costs are sometimes complemented with household contributions.

Humanitarian practitioners face significant challenges in keeping up with immediate and longer-term needs and priorities, both within shelter and beyond it (NDMA, 2010; IFRC, 2009; GFDRR, 2008; IRIN, 2008). The need for a timely response is well illustrated by the example of Bangladesh after Tropical Storm Mahasen in May 2013. The majority of housing damage was to roofing and structural frames. An assessment two months after the disaster, found that 31% of households had begun repairing and rebuilding their homes with reclaimed materials (see GSC, 2013: 1). Self-recovery was therefore the most timely and immediate form of reconstruction.

The Australian Aid evaluation of the Typhoon Pablo response in the Philippines also identified self-recovery as making a potentially significant contribution to reconstruction. The evaluation identified a clear improvement in shelter conditions across all targeted areas within three months of the disaster, but found it difficult to determine to what extent this was due to shelter assistance, other forms of assistance or self-recovery. The evaluation identified a decrease in totally destroyed shelters and an increase in partially damaged shelters between February and July 2013, raising the question whether this increase in the number of partially damaged shelters was due to people repairing and recovering their homes very quickly with what they could find to hand – essentially turning a 'fully destroyed' home into a 'partially destroyed' one – rather than the receipt of shelter assistance. This is confirmed by evidence demonstrating an increase in partially damaged houses in all areas, despite the fact that not all municipalities had received shelter assistance (AusAid, 2013: 20–21).

4. Conclusions

While the findings highlight significant challenges, this discussion has not sought to diminish the importance of the shelter sector in post-disaster recovery, but rather to recognise the

pressing need to improve systems to monitor impact and relevance (especially in terms of the timing of assistance). In doing so, it also seeks to identify areas where improvements might be made.

About 6% of people affected by hydro-meteorological and geological disasters in the ten years between 2007 and 2017 were in countries where the GSC mechanism was activated. This leaves 94% of affected people recovering without GSC co-ordinated assistance. Within the 48 countries where the GSC mechanism was activated, allocated funding for humanitarian shelter responses fell short of the requested funding by an average of 40%. Evidence suggests that the most extensively distributed form of assistance within these responses was NFIs. When NFIs are excluded, coverage is reduced considerably. Beyond NFIs, ready-made shelter distribution and shelter construction by aid organisations reached very few people and had little demonstrable impact on shelter recovery. Prototype shelters in particular can become unoccupied or used for non-shelter purposes. Although repurposing assistance is not necessarily a bad thing if it contributes to a household's recovery, it does affect how the impact of assistance is understood (this is a discussion that deserves its own study beyond the scope of this paper). The study also found evidence that the transition between prefabricated t-shelters, core shelters and permanent homes is not linear and can therefore not be assumed. Finally, the study found evidence of a shift in more recent programming models towards support for shelter self-recovery and assistance through materials, technical guidance for safer reconstruction and cash transfers.

This analysis also reveals the limitations of existing, publicly available information in measuring the impact of humanitarian shelter activities. Two important messages emerge from the desk review and subsequent discussion. The first is that there are significant gaps in information about individual shelter interventions, their coverage and quality. Second, with the public information that is available it is very difficult to judge how these responses contribute to the recovery of households within a context of multiple sources of assistance. Overcoming these two challenges is key to improving the impact of shelter assistance on people's recovery strategies and pathways.

Information gaps were highlighted when trying to make comparisons between Cluster-activated and non-Cluster-activated responses because information on the latter is not readily available. For the former, the GSC provides a platform for reporting from different responses, but the information available was in large part programme-focused and provided short-term analyses. There was very little discussion of the longer-term impact of shelter interventions. This makes it difficult to assess how shelter assistance becomes articulated with, adapted to and complemented by other recovery processes led by households, the government or development organisations. Therefore, the real impact, beyond distribution, can rarely *really* be understood.

Among programme-specific evaluations and reports, there were stark differences in the formats, terminologies (for the same concepts) and counting mechanisms used. These inconsistencies made it difficult to draw comparisons and parallels across shelter responses. This challenge is magnified by the very little raw data available on shelter interventions. Most statistics about shelter interventions were in reports already processed by each implementing organisation. This raises a question of objectivity across the system. Can agencies be fully transparent about their impact, or is their reporting skewed by concerns for funding and reputation? In consequence, does the processing of raw data into programme reporting generate clarity or further ambiguity about what lies behind the numbers?

Within programme reporting, detailed disaggregation on how many and what households receive what and how much from each intervention is not available. The lack of detail limits understating about how different organisations approach NFI distribution, training and information dissemination. These differences in understanding and how they play out in the distribution of assistance have considerable impact on household recovery. One issue that will continue to pose challenges is understanding how to monitor the impact of technical guidance. This is especially important as the shelter sector increasingly shifts towards 'soft' programming. The desk review found that non-material assistance was less frequently recorded and monitored, as was the impact it had on beneficiaries. The sector should be working to gain a deeper understanding of what happens to reconstruction guidance and information once it is in the community.

The shelter sector urgently needs consistent and regular self-evaluation and reflection, not only through cross-learning of best practices and innovation, but also on monitoring, evaluation, accountability and learning mechanisms and knowledge management. This will remain important as it develops more resourceful ways of meeting a growing number of highly complex and diverse shelter needs with limited resources. This discussion paper has sought to identify initial areas for improvement in gathering and managing information about the sector's impact. As the sector moves towards supporting self-recovery among disaster-affected populations, it requires monitoring mechanisms that can record rapidly changing shelter needs and priorities, as well as an improved knowledge management framework, whereby the information that is collected can be easily accessed, interpreted and shared.

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Annex 1. Types of documents categorised and reviewed for Filter 4.

Number of document type	Classification
NEEDS ASSESSMENT **x 11**	• Early Recovery Assessment • Rapid Assessment Report • Needs Assessment Report • Post-Disaster Needs Assessment (PDNA) • Multi-Sector Initial Rapid Assessment (MIRA)
EVALUATION/ ASSESSMENT REPORTS **x 26**	• Shelter Cluster Review • Joint Programme Assessments • Monitoring Report • Programme Reports • Annual Report • Response Report • Response Review • Response Evaluation Review • Shelter Projects Case Study
ADVOCACY/POLICY DOCUMENT **x 6**	• Advocacy Documents • Policy Paper • Emergency Appeal
SUMMARY DOCUMENTS **x 36**	• Briefing Notes • Bulletin • Fact Sheet • Flash Updates • Operation Overview • Snapshot • Presentation • Situation Report • Desk Review • Concept Paper
RESPONSE PLANS **x 16**	• Action Plans • Emergency Plan of Action • Planning Frameworks • Joint Response Plan • Recovery Frameworks • Strategy Report
Total	**95**

Annex 2. Sources drawn on for data related to 22 responses

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Annex 3. Proportion of types of shelter support distributed per response

	NFI, plastic sheeting and/or tents	Shelter structure hardware (e.g. shelter kits, CGI)	Prototype homes/core housing/t-shelters	Repairing/ Retrofitting	Shelter Software: Cash (often packaged with self-recovery support e.g. training)
2007 Bangladesh	95.4%	0.0%	2.3%	0.0%	0.0%
2008 Myanmar	81.2%	7.9%	5.5%	0.0%	0.0%
2009 Indonesia	17.9%	33.2%	5.5%	0.0%	37.9%
2010 Pakistan	0.0%	0.0%	50.0%	0.0%	0.0%
2010 Haiti	80.3%	0.0%	9.8%	0.0%	0.0%
2011 Pakistan	6.7%	0.0%	46.7%	0.0%	0.0%
2011 Lesotho	20.7%	76.8%	1.3%	0.0%	0.0%
2012 Philippines	98.8%	0.0%	0.6%	0.0%	0.0%
2012 Bangladesh	83.3%	16.7%	0.0%	0.0%	0.0%
2013 Philippines	32.4%	0.0%	16.9%	26.0%	7.8%
2013 Philippines	52.7%	25.1%	9.4%	0.0%	3.3%
2013 Mozambique	97.6%	2.4%	0.0%	0.0%	0.0%
2014 Bangladesh	24.7%	0.0%	1.8%	71.6%	0.0%
2015 Nepal	51.1%	48.9%	0.0%	0.0%	0.0%
2015 Bangladesh	6.5%	0.0%	10.2%	2.1%	71.1%
2015 Vanuatu	48.1%	24.5%	0.0%	0.0%	27.4%
2016 Bangladesh	100.0%	0.0%	0.0%	0.0%	0.0%

2016 Ecuador	100.0%	0.0%	0.0%	0.0%	0.0%
2016 Fiji	0.0%	13.4%	1.0%	0.0%	84.6%
2017 Bangladesh	37.3%	10.5%	2.3%	47.6%	0.0%
2017 Nepal	3.0%	0.0%	0.0%	0.0%	97.0%
2017 Madagascar	55.0%	45.0%	0.0%	0.0%	0.0%
Total	49.7%	13.8%	7.4%	6.7%	15.0%