The effectiveness and efficiency of interventions supporting shelter self-recovery following humanitarian crises: An evidence synthesis protocol

Humanitarian Evidence Programme

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Conflicts of interest

There were no conflicts of interest in the writing of this report.

Contributions

The opinions expressed in this publication are not necessarily those of the Oxfam/Feinstein International Center (FIC) at the Friedman School of Nutrition Science and Policy at Tufts University or the funders. Responsibility for the views expressed remains solely with the authors.

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Acronyms

DFID	Department for International Development
ESRC	Economic and Social Research Council
FIC	Feinstein International Center
HEP	Humanitarian Evidence Programme
HfH	Habitat for Humanity
IASC	Inter-Agency Standing Committee
IDPs	Internally Displaced Persons
IFRC	International Federation of Red Cross and Red Crescent Societies
(I)NGO	(International) Non-Government Organisation
OCHA	Office for the Coordination of Humanitarian Affairs
RCT	Randomised Controlled Trials
UCL	University College London
UN	United Nations
UNHCR	UN High Commissioner for Refugees

1.0 Introduction

The Humanitarian Evidence Programme (HEP) is a Department for International Development (DFID) - funded partnership between Oxfam and the Feinstein International Center (FIC) at the Friedman School of Nutrition Science and Policy at Tufts University. The Programme aims to synthesise research in the humanitarian sector and communicate the findings to key stakeholders. Its ultimate goal is improving policy and practice[2]. Between June 2014 and December 2016 the programme will commission a series of evidence syntheses to distil evidence in areas of interest to the humanitarian sector. These include humanitarian shelter and settlements, market support interventions, child protection and interventions in urban environments.

Habitat for Humanity (HfH) and University College London (UCL) – the 'Review Team' – have been commissioned to complete a systematic review on the 'impacts of different shelter and settlement strategies in the immediate aftermath of and recovery period following humanitarian emergencies'. Between August and November 2015 the Review Team undertook a scoping assessment in order to a) map the breadth, depth and nature of documentation available in the shelter and settlements sector; and b) engage with, and collect feedback from stakeholders to understand where there is demand for evidence synthesis (or primary research).

The scoping assessment identified that there is both evidence available, and stakeholder interest in, evidence synthesis on the topic of humanitarian interventions that aim to support affected populations' own shelter self-recovery processes. However, given the limited quantity and quality of documentation in the sector, and the level of quality data required for a credible and respected systematic review, it was decided that a review on this topic would take the form of an 'evidence synthesis' rather than a standard systematic review. This enables a broader question to be addressed and a greater number of valuable, but potentially lower quality or less objective documents[3] to be included into the analysis (with the limitations of including such documents explicitly detailed) - see Box 1 for further information.

The purpose of this document is to clearly describe the proposed research methodology so that it can be peer-reviewed prior to undertaking the study and replicated in future. Thus it describes:

- the theoretical background to the study (Section 2). This includes definitions of key terms used in the research, a proposed theory of change model for how the intervention might work and the justification for this research.
- the aim and research questions the study intends to address (Section 3).
- the methodology for undertaking the review (Section 4) This includes the inclusion and exclusion criteria, the search strategy and the procedure for data collection and analysis.
- the references used in this document (Section 5).
- appendices containing further details on the scoping assessment and the proposed search strategy, data extraction form and quality appraisal checklist for this review (Section 6).

[2] See www.oxfam.org.uk/hep for further details

[3] All includable documents will be quality assessed and critically appraised based using the criteria set out in Appendix E (Quality Appraisal Template). See section 4.4 for further details.

Box 1: Why an evidence synthesis and not a systematic review?

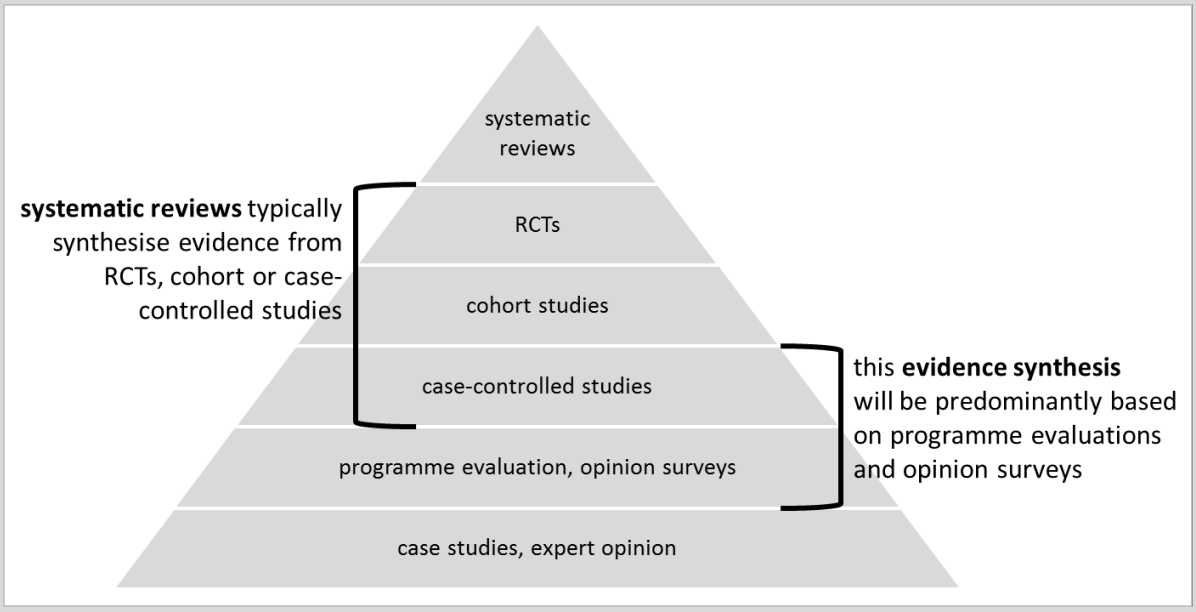
Evidence synthesis in the form of systematic reviews emerged as a tool for assessing and synthesizing evidence out of the medical sector; in recent years systematic reviews have increasingly been used in the social sciences, including in international development. However evidence syntheses for the humanitarian field often have to be adapted from standards that are more appropriate for medical research (Humanitarian Evidence Programme 2015).

For example, Ryan et al. (2013) recommend that '*the following study designs are eligible for consideration for inclusion in systematic reviews of complex interventions:*

- *Random Controlled Trials (including cluster RCTs)*
- *Non-randomised studies: Quasi-randomised controlled trials; Controlled before-and-after studies or Interrupted time series'*

However, in this review, the vast majority of documents identified as part of the scoping assessment did not meet these eligibility criteria: most did not have control groups; and most did not have multiple data points. Critically, most were not *designed studies,* but were programme or project *evaluations* or *academic research* initiated towards the end of, or on completion of, a project or programme. Therefore, the Review Team recommended that the review be called an 'evidence synthesis', rather than a systematic review, in recognition of the limited volume and nature of the documentation in the sector, and the level of quality data required for a credible and respected systematic review.

Fig 1: Difference between systematic review and evidence synthesis



Source: The authors, adapted from Louw (2009)

Please note: The examples of 'evidence' in this triangle primarily represents quantitative studies, however the principles equally applies to qualitative and mixed-methods studies.

2.0 Background

2.1 The problem

2.1.1 Humanitarian crises and response

Humanitarian emergencies (or crises) can be defined as 'an event or series of events that represents a critical threat to the health, safety, security or wellbeing of a community or other large group of people, usually over a wide area' (Humanitarian Coalition 2015). 'There are many possible causes of humanitarian crises. Two of the most common categories used within the humanitarian sector to describe types of crises are natural disasters and complex emergencies' (including armed conflicts (Quintanilla et al. 2014, p.21):

- 'Natural disasters[4], which can be geophysical (e.g. earthquakes, tsunamis and volcanic eruptions), hydrological (e.g. floods, avalanches), climatological (e.g. droughts), meteorological (e.g. storms, cyclones), or biological (e.g. epidemics, plagues).
- Complex emergencies, which often have a combination of natural and man-made elements, and different causes of vulnerability and a combination of factors leads to a humanitarian crisis. Examples include food insecurity, armed conflicts, and displaced populations' (Humanitarian Coalition 2015).

'In a humanitarian emergency no single entity can serve the needs of an entire affected population' (Stoddard et al. 2015, p.18). Thus a network of actors must work together in what can be described as 'The Humanitarian System'[5]. Core actors in the system have aid provision as their primary goal. These include: 'local, national and international NGOs, UN humanitarian agencies; the International Red Cross and Red Crescent Movement; recipient government agencies with responsibility for crisis response; humanitarian arms of regional intergovernmental organisations; donor-government agencies and offices that provide humanitarian funding and coordination' (Stoddard et al. 2015, p.19). Other actors may 'play important roles in aid but have other principal functions and goals' (Stoddard et al. 2015, p.19); these include the military, religious organisations, private-sector entities and diaspora groups.

The activities and priorities of humanitarian actors are commonly described as occurring in three phases: relief; recovery and reconstruction. Activities in the relief phase aim 'simply to save lives' (Quintanilla et al. 2014, p.58). Recovery activities begin 'when the immediate large-scale threat to human life and wellbeing has diminished... [and aim] 'to provide support so that communities can start putting their lives back together' (Quintanilla et al. 2014, p.58). The reconstruction phase 'aims to support communities and societies to regain their livelihoods and resilience... This phase typically lasts for years, and organisations that have only a humanitarian focus may not stay involved' (Quintanilla et al. 2014, p.59).

[4] The phrase 'natural disaster' is commonly used by humanitarian policymakers and practitioners and is therefore used throughout this review. The Review Team note, however, that there is no such thing as a 'natural' disaster. Disasters occur when the impact of a natural hazard overwhelms the capacity of a community or society to cope and is heavily influenced by the underlying vulnerabilities of the affected population. See Twigg (2015) for further details.

[5] Stoddard, A. et al (2015) define The Humanitarian System as a 'network of interconnected institutional and operational entities through which humanitarian assistance is provided when local and national resources are insufficient to meet the needs of the affected population'.

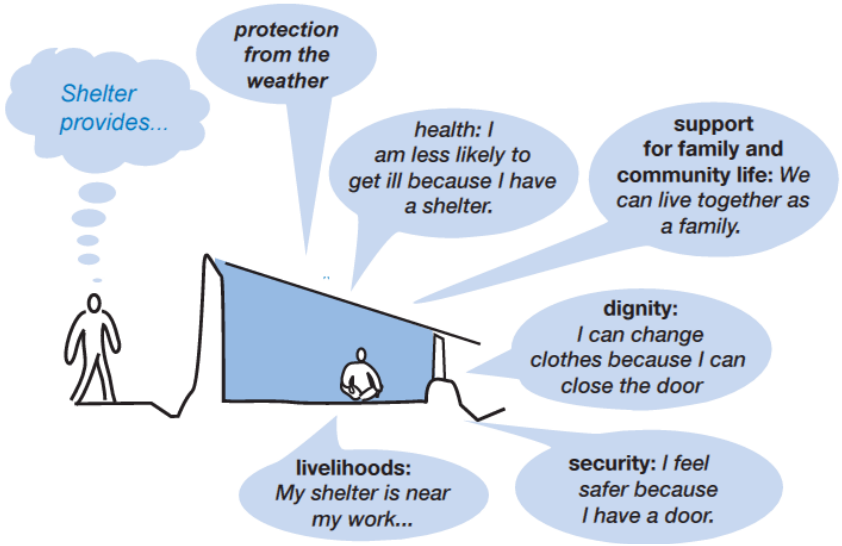
The links between relief, recovery (or rehabilitation) and development have long been debated[6] and discussions continue within the humanitarian system 'about what each phase should be called and why' (Quintanilla et al. 2014, p.57). It is not easy to distinguish between the different phases of humanitarian response because the process is uncertain and non-linear, and because each individual, household, and community will recover at different speeds. The crisis will also be perceived differently by different groups within society and their views will change over time (Chang 2010; Tierney & Oliver-Smith 2012).

In both conceptual and practical terms the duration and outcomes of the recovery phase are particularly challenging to define. During the recovery phase humanitarian actors aim to 'get communities back on their feet' while transferring responsibility for coordination of recovery and reconstruction efforts to national governments and humanitarian organisations (Quintanilla et al. 2014, p.59). The recovery phase is also 'seen by many as an opportunity to bring about positive socio-economic change, and not merely a return to the status quo' (Buchanan-Smith & Fabbri 2005). The phrase 'early recovery' is currently used to describe both recovery activities implemented in the relief phase (Quintanilla et al. 2014) and taking a developmental approach to the provision of relief and recovery assistance (UNDP n.d.). Such approaches have also been known as 'developmental relief', 'transition recovery' and 'recovery plus' (Batchelor 2011).

2.1.2 Humanitarian shelter and settlement

Shelter and settlement interventions play an important role in both the survival and recovery of populations affected by humanitarian crises. Having somewhere healthy and safe to live, opportunities to earn a living, and access to services such as healthcare and education are critical to the recovery of individuals and families (see also Figure 2). The process of repairing and reconstructing the built environment can also play a significant role in supporting recovery of wider social, political, economic and ecological systems while contributing to long-term risk reduction and resilience. See Box 2 for referenced examples of potential outcomes and impacts.

Figure 2: Shelter provides...



Source: Ashmore and Treherne (2010)

[6] See 'What is early recovery?' in Batchelor (2011)

Box 2: Potential outcomes and impacts of humanitarian shelter and settlement interventions

As described in the Humanitarian Charter and Minimum Standards in Humanitarian Response:

> *'Shelter is a critical determinant for survival in the initial stages of a disaster. Beyond survival, shelter is necessary to provide security, personal safety and protection from the climate and to promote resistance to ill health and disease. It is also important for human dignity, to sustain family and community life and to enable affected populations to recover from the impact of disaster.'* (The Sphere Project 2011)

Shelter can also support wider physical, social, economic and environmental recovery. For example:

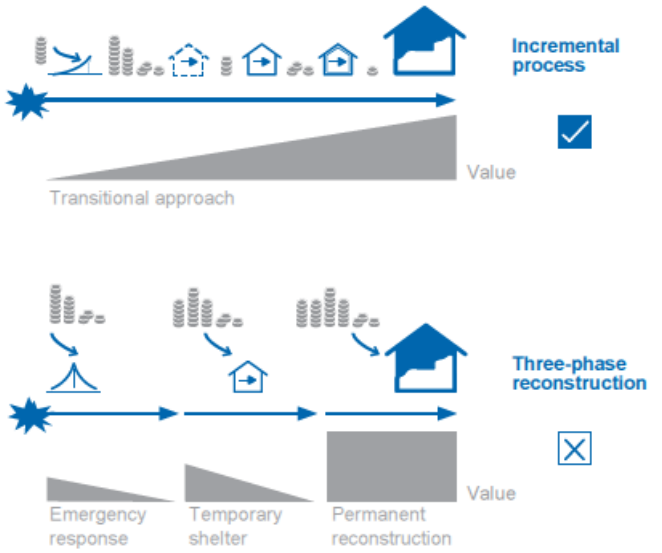
- Physical: Safe shelter can contribute to long-term risk reduction and resilience (Twigg 2002; Kennedy et al. 2008).
- Social: Participatory approaches to shelter programmes can catalyse psychological recovery though helping 'the community re-focus after the disaster, take ownership of the situation and begin to think about their future development' (da Silva 2010, p.54).
- Economic: 'Construction is particularly good in absorbing unskilled and semi-skilled workers' (Setchell 2001, pp.9–10) while adequate shelter is critical in enabling the recovery of home-based enterprises (Sheppard & Hill 2005). Thus shelter assistance 'can assume a leading role in promoting both household livelihoods and community recovery' (Setchell 2001).
- Environmental: Shelter assistance can contribute positively or negatively to environmental recovery (da Silva 2010; The Sphere Project 2011).

As with humanitarian response more generally, approaches to humanitarian shelter and settlement have traditionally adopted a phased approach to the provision of emergency, temporary and permanent shelter (see Figure 3). However, such approaches have been critiqued for their costliness (Shelter Centre 2012) and inability to meet the scale of need (Parrack et al. 2014). In 2005 Corsellis and Vitale introduced the term 'transitional settlement' an attempt to position shelter and settlement 'within the wider continuum of relief, reconstruction/rehabilitation, and development' (2005, p.10). This approach introduced the idea of several shelter 'options' for families displaced by disasters (such as staying with 'host families' or in 'planned camps') an approach which they applied to in-situ reconstruction in 2010 (Shelter Centre et al. 2010).

The *Transitional Shelter Guidelines* further defined transitional shelter as 'an incremental process which supports the shelter of families affected by conflicts and disasters, as they seek to maintain alternative options for their recovery' (Shelter Centre 2012, p.2). These guidelines note that transitional shelter can be: '*upgraded* into part of a permanent house; *reused* for another purpose; *relocated* from a temporary site to a permanent location; *resold*, to generate income to aid with recovery; and *recycled* for reconstruction' (Shelter Centre 2012, p.2).

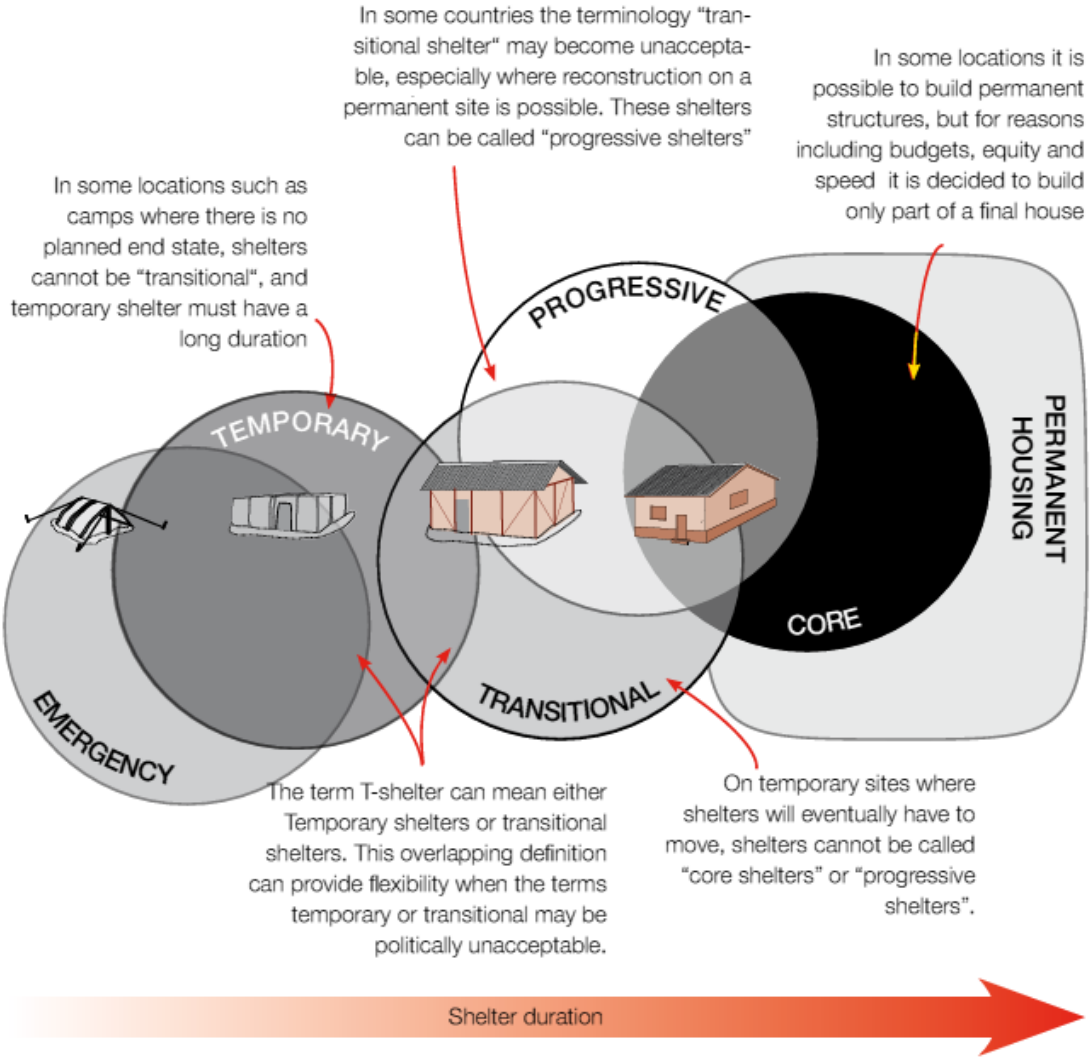
Practitioners appear to have found the terms proposed in the *Transitional Shelter Guidelines* difficult to apply in practice and thus proposed alternative terminology. For example, *Post-disaster shelter: Ten designs* notes the ''transitional shelter' may become unacceptable, especially when reconstruction on a permanent site is possible' while in locations such as planned camps 'where there is no planned end state, shelters cannot be 'transitional'' (IFRC 2013, p.9). Instead the IFRC propose the use of the terms emergency, temporary, transitional, progressive and core shelter – noting the importance of selecting terminology to suit a specific context and that the use of these different terms might overlap (see Figure 4).

Figure 3: The difference between three-phase reconstruction and an incremental process



Source: Shelter Centre (2012)

Figure 4: Overlapping definitions of shelter terminology



Source: IFRC (2013)

2.2 The intervention: supporting shelter self-recovery

2.2.1 What is shelter self-recovery?

Shelter self-recovery has been described as when affected households 'rebuild or repair damaged or destroyed homes using their own assets' through self-building or using the local informal building sector (Parrack et al. 2014, p.47)[7]. As with post-crisis recovery more generally[8], this is an incremental process that is different for every household and likely to take several years. Given that the majority of shelter needs after crises are met by affected families and communities themselves (Davis 1978) this process is in fact 'not the exception but the norm' (Parrack et al. 2014, p.47).

2.2.2 How has the phrase 'self-recovery' been used in practice?

Searching the Shelter Cluster website[9] and the Shelter Case studies[10] database for the phrase 'self-recovery' indicates that shelter practitioners began using the term following cyclone Sidr in Bangladesh in 2007 (Kabir 2009)[11]. Supporting shelter self-recovery was also one of the operational priorities of the Emergency Shelter Cluster in response to cyclone Nargis in Myanmar in 2008 (Emergency Shelter Cluster 2008). Following the earthquakes in Indonesia in 2009 Rantanen (2011) noted that while affected families began rebuilding very quickly the majority of humanitarian interventions did not support this process.

While responding to the armed conflict in Sri Lanka in 2011, Shelter Cluster meeting minutes note that 'based on previous experience in Sri Lanka and elsewhere, a 25% rate of 'self-recovery' is possible'[12] (UNHCR 2011, p.2). In the same year a large-scale programme following the Pakistan floods in 2011 provided cash, guidelines and training and was described as 'supporting the construction of safer shelters to catalyse self-recovery' (IFRC et al. 2013, p.71).

The phrase 'self-recovery' became widely used following typhoon Haiyan in the Philippines in 2013 where providing 'support for household self-recovery' was one of three strategic objectives of the Shelter Cluster (Global Shelter Cluster 2013). Support for shelter self-recovery was subsequently identified as a strategic objective of the humanitarian shelter response to the armed conflict in South Sudan in 2013 (Shelter Cluster South Sudan 2014) and in Nepal in 2015 (Nepal Shelter Cluster 2015). The term 'progressive sheltering' was used to describe a similar approach following typhoon Pam in Vanuatu in 2015 (Government of Vanuatu 2015).[13]

2.2.3 What interventions support shelter self-recovery?

To date there is only partial agreement of standard terminology to describe the different types of humanitarian shelter interventions. As noted in *Shelter Projects 2013-2014* 'there has been a lot of academic and practical debate surrounding terminology used in the shelter sector. Additional confusions have been added by language translation issues' (IFRC et al. 2014, p.x) (See Box 3 for further details).

[7] The term 'self-recovery' has been introduced by humanitarian shelter practitioners to describe shelter self-recovery. Therefore the term 'shelter self-recovery' rather than 'self-recovery' more generally is used in this research.
[8] See Section 2.2.1
[9] www.sheltercluster.org, accessed 26.11.2015
[10] www.sheltercasestudies.org, accessed 26.11.2015
[11] As described in section 2.1.2 different terms are often used to describe humanitarian shelter interventions in different contexts and at different periods of time. See section 2.2.4 and 2.2.5 for a discussion of other terms used to describe 'support for shelter self-recovery'.
[12] Parrack et al. (2014) suggest that rates of unsupported shelter self-recovery may actually be nearer 70% as 'humanitarian organisations rarely reach more than thirty percent of the shelter needs within the first year after a major disaster' (2014:53).
[13] See Table 1 for details of the humanitarian shelter interventions in each of these responses.

Box 3: The development of terminology to describe humanitarian shelter interventions

DFID, OCHA & ShelterCentre (2008) identified 12 'assistance methods' in *Transitional settlement and reconstruction after natural disasters*. Following extensive peer review this publication was re-issued two years later (Shelter Centre et al. 2010). By this time it described 18 'assistance methods' sub-divided into labour methods (direct, community, contracted or self-help labour), materials methods (such as the distribution of construction materials or tools), support methods (for example cash or legal assistance) and quality assurance methods (such as the provision of technical expertise). While extensive this framework for categorising shelter interventions has not been universally adopted. Terms continue to be revised and adapted by practitioners to suit their needs in different contexts, while more recent publications such as *Shelter after Disaster* (IFRC & UN/OCHA 2015) return to earlier classifications of types of intervention.

Since 2008 the *Shelter Projects* initiative has collected more than 165 shelter and settlement case studies into five editions of *Shelter Projects* and an online database[14]. This includes examples of responses to natural disasters and complex emergencies (including armed conflict). *Shelter Projects 2013-2014* (IFRC et al. 2014) identifies 17 'response types' which have emerged from the ongoing collection and classification of these case studies and have been peer reviewed, revised and adapted over time. While the authors acknowledge that the terms emergency shelter, transitional shelter, T-shelter, temporary shelter, semi-permanent shelter, core housing and progressive shelter remain problematic the 17 'response types' identified are the most 'evidence-based' system of categorising shelter interventions which has been developed to date.

The 17 intervention types identified are:

1. Household items
2. Construction materials
3. Tools
4. Emergency shelter
5. Transitional shelter/ T-shelter
6. Support for host families
7. Rental support
8. Core housing/ progressive housing
9. Housing Repairs and retrofitting
10. Cash/ vouchers
11. Loans
12. Advocacy/ legal
13. Site planning
14. Infrastructure
15. Training
16. Structural assessment
17. Guidelines/ materials/mass communications

These categories proved useful in coding and analysing the documents included in the scoping assessment for this review and can therefore be viewed as representative of the majority of humanitarian shelter and settlement interventions. Just one additional category was required to describe the projects/programmes selected for analysis – construction of 'permanent' rather than 'core' housing – although it can be argued that this is not a humanitarian intervention. In some cases findings from more than one 'response type' were also combined (such as cash, vouchers and loans) in order to simplify the presentation of findings.

[14] See www.sheltercasestudies.org for further details.

To identify which interventions are commonly described as supporting shelter self-recovery, in Table 1, the interventions described in the documents referenced in Section 2.2.2 were mapped against the 17 'response options' identified in *Shelter Projects 2013-2014* (IFRC et al. 2014). This analysis indicates that humanitarian programmes described as providing support for shelter self-recovery typically include the provision of a combination of the following interventions:

- Construction materials (including support for the salvage and re-use of debris)[15]
- Tools
- Cash or vouchers for the purchase of construction materials, tools or labour
- Training
- Guidelines/materials/mass communication

The Review Team propose that the core components of humanitarian interventions supporting shelter self-recovery can therefore be classified as the provision of:

- material assistance (including construction materials, tools, salvaging and re-use of debris)
- financial assistance (cash or vouchers) for the purchase of construction materials, tools or labour
- technical assistance (including training and the provision guidance through guidelines/mass communications).

The Review Team note, however, that the provision of material, financial and technical assistance may not be sufficient to support shelter self-recovery for all affected households. *The Humanitarian Charter and Minimum Standards for Humanitarian Response* highlights that while 'affected populations should be supported where possible to repair or adapt existing dwellings or build new structures... [additional] support or technical assistance should be provided to affected populations who do not have the capacity or expertise to undertake construction activities' (2011, p.246). Parrack et al. (2014) suggest that this could include the construction of transitional or permanent houses for the most vulnerable families.

The Humanitarian Charter and Minimum Standards for Humanitarian Response also states that shelter should be in locations that promote safety, security and health and provide access to essential services and livelihood opportunities[16]. Therefore, although not part of the proposed definition of 'support for shelter self-recovery' (which focuses on direct support to households or communities) the provision of indirect support such as advocacy and legal assistance, site/settlement planning, or the rehabilitation of infrastructure may also be required to enable households to access essential services, livelihood opportunities, or land on which to build.

[15] Construction materials and tools are often combined into 'kits' (for examples the 'Shelter Repair Kits' distributed in the response to typhoon Haiyan) but these are typically given different names in each response.
[16] As discussed in the standards on 'Strategic planning' and 'Settlement planning'

Table 1: Example humanitarian interventions described as supporting shelter self-recovery

	Household items	Construction materials	Tools	Emergency Shelter	Transitional/T-Shelter	Support for host families	Rental support	Core housing/progressive shelter	Housing repair and retrofitting	Cash/vouchers	Loans	Advocacy/legal support	Site planning	Infrastructure	Training	Structural assessment	Guidelines/materials/mass communication
Bangladesh, 2007 *Kabir (2009) notes that the government of Bangladesh distributed construction materials and cash grants.*		✓								✓							
Myanmar, 2008 *The Emergency Shelter Cluster aimed to provide construction materials, fixings and toolkits to affected households and communities (Emergency Shelter Cluster 2008).*		✓	✓														
Indonesia, 2009 *Rantanen (2011) notes that the majority of humanitarian agencies provided transitional shelters – an approach which 'crowded out a larger and arguably more appropriate' distribution of conditional cash grants, materials and technical assistance (through guidelines and on-site monitoring).*		X								X							X
Pakistan, 2011 *A programme supporting affected households to build core shelters provided cash, guidelines and training 'to catalyse self-recovery' (IFRC et al. 2013).*										✓					✓		✓
Philippines, 2013 *Operational activities identified in the Strategic Response Plan to support shelter self-recovery included the provision of construction materials and tools, cash distributions and the provision of guidelines and training on safe construction (Global Shelter Cluster 2013).*		✓	✓							✓					✓		✓
South Sudan, 2013 *The Shelter Cluster strategy included the distribution of 'emergency shelter kits' containing construction materials and tools (Shelter Cluster South Sudan 2014).*		✓	✓														
Nepal, 2015 *Shelter interventions to support shelter self-recovery included the provision of construction materials, tools, cash grants, 'key messaging on more resilient shelter' and training for households, community groups, 'semi-skilled labourers, engineers, social mobilisers, masons and carpenters' (Nepal Shelter Cluster 2015).*		✓	✓							✓					✓		✓
Vanuatu, 2015 *Proposed intervention types included 'the supply of materials for roofing and framing, salvaging lumber and debris for re-use, training of skilled and unskilled labour, awareness raising in safer building practices, technical assistance, and cash-based programs' (Government of Vanuatu 2015).*		✓								✓					✓		✓

Note: ✓ indicates that the document specifically states the intervention was provided. X indicates that the document specifically states that the intervention was not provided – but that it should have been.

Source: The authors

2.2.4 Has support for shelter self-recovery been called anything else?

With just one exception (South Sudan in 2013) all the examples cited in Table 1 are responses to 'natural' disasters, in the Asia-Pacific region, since the introduction of the term 'self-recovery' in 2007. Therefore, given the lack of standardised terminology in the shelter sector, it is important to consider if interventions supporting shelter self-recovery have been called something else in different contexts or at different periods of time.

The terms 'self-help' and 'self-build' have long been used in developmental approaches to housing[17], thus these terms were used to search the academic database SCOPUS, the Shelter Cluster website and the Shelter Case Studies database to test whether these terms have also been applied to humanitarian response (see Box 4). The results of these searches indicate that humanitarian shelter interventions providing a combination of material, financial and technical assistance have been described as 'self-help' or 'self-build' in response to complex emergencies (including armed conflict), in Europe and Africa, and prior to 2007. Thus it can be concluded that these terms identify additional useful examples for this review. Therefore the authors recommend that this review synthesise evidence on shelter programmes that provided a combination of material, financial and technical assistance (through the interventions identified in Section 2.3.4), rather than those that are specifically described as supporting 'self-recovery'.

2.2.5 Defining the timescale of 'support for shelter self-recovery'

From these initial scoping searches it appears that the term 'self-recovery' has been used to describe interventions supporting affected households to repair, build or rebuild emergency, temporary or transitional shelter; however, the examples identified in Box 4 indicate that the terms 'self-help' and 'self-build' have also been applied to reconstruction. There is already considerable literature on 'owner-driven reconstruction'[18] therefore the Review Team recommend that this review focuses on *humanitarian* (i.e. relief, early recovery or recovery) shelter interventions.

There is no standard timescale for humanitarian shelter relief or recovery interventions as these 'vary according to the local conditions and type of disaster' (IFRC & UN/OCHA 2015)[19]. However, in practical terms, humanitarian funding for relief and early recovery activities is often limited to the first 12 months following the onset of the crisis (USAID/OFDA 2012; DFID 2015) and this serves as a useful rule of thumb.

Given the existing literature on 'owner-driven reconstruction', the focus of humanitarian funding on the first 12 months following the onset of a crisis, and the need to identify comparable interventions for inclusion in the evidence synthesis, the Review Team propose that this review focuses on shelter interventions which **began implementation:**

- within 18 months after a natural disaster
- within 18 months following return or resettlement as a result of complex emergencies (including armed conflict)
- during any time period for displaced populations while they are displaced as a result of 'natural' disasters or complex emergencies (including armed conflict)

[17] See for example Wakely & Riley (2011)
[18] See for example Jha et al. (2010) and IFRC (2010)
[19] See Sections 2.1.1 and 2.1.2 for further discussion of the phases of humanitarian interventions

- during any time period for non-displaced populations affected by complex emergencies (including armed conflict).

The 18 month period is proposed as it extends beyond the typical 12 months, therefore capturing interventions that received humanitarian funding for relief, early recovery and recovery, whilst not extending into reconstruction.

2.2.6 Proposed definition of humanitarian interventions supporting shelter self-recovery

Based on the definition introduced by Parrack et al. (2014) and the information presented in Sections 2.2.2-2.2.5 the Review Team propose that for this research:

> *Humanitarian interventions supporting shelter self-recovery following humanitarian crises can be defined as those: providing a combination of material, financial and technical assistance; during the relief and/or recovery phase; to enable affected households to repair, build or rebuild their own shelters themselves or through using the local building sector. Material assistance includes the provision of construction materials, tools and support for salvaging and re-use of debris. Financial assistance includes the provision of cash or vouchers. Technical assistance can include (but is not limited to) the provision of guidance on construction through training, guidelines or mass communications.*

Box 4: The use of the terms 'self-help' and 'self-build' to describe humanitarian shelter interventions

A search of the academic database SCOPUS[20] identified two articles using the phrase 'self-help' to describe humanitarian shelter interventions: Howard & Mister's *Lessons learnt by Oxfam from their experience of shelter provision 1970-1978* (1979) and Zetter's *Shelter and settlement for forcibly displaced people* (2012). Both articles use the phrase 'self-help' to describe approaches when affected households build or rebuild their own shelters supported through the provision of a combination of material, financial and technical assistance.

Searching the Shelter Cluster website[21] and the Shelter Case Studies database[22] for the phrases 'self-build' and 'self-help' identified a number of additional responses, programmes and projects which provided a combination of material, financial and technical assistance. These include:

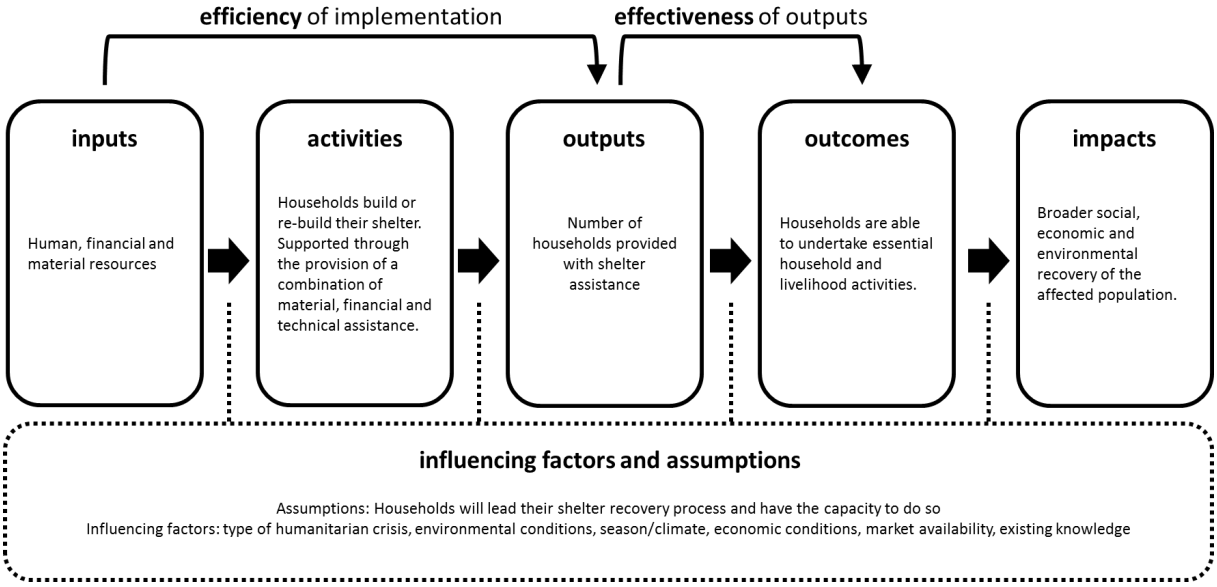
- a programme supporting 1.2 million+ families returning to Afghanistan from 2002 onwards (following conflict since 1979) which provided materials, technical guidance and cash (UN-Habitat et al. 2008)
- the Shelter Cluster's recommendation to distribute 'self-help emergency repair kits' containing roofing materials and tools to support affected households 'to make structures to help them to survive the winter' following the earthquake in Pakistan in 2005 (Emergency Shelter Cluster 2005)
- the Shelter Cluster's strategy following the Haiti earthquake in 2010 which identified 'self-help' through phased materials distribution and technical advice as a transitional response for non-displaced populations (Haiti Shelter Cluster 2010)
- a project providing materials and technical assistance to support self-help repairs and renovations following floods in Romania in 2010 (IFRC et al. 2012)
- two projects supporting returnees to rebuild 'communities as well as houses' through the provision of a combination of materials (including local manufacture of mud bricks), tools, vouchers, technical assistance (one mason and one carpenter were paid to work on several houses) and training following the post-election crisis in Cote d'Ivoire in 2010 (IFRC et al. 2013)
- a project providing traditional construction materials and plastic sheeting to refugees in Burkina Faso following conflict in Mali in 2012 (IFRC et al. 2013)
- Norwegian Refugee Council's *Overview of the Housing Situation in the Gaza Strip* (2013) highlighted that 'the self-help approach to reconstruction in Gaza [defined as the provision of financial and technical assistance] is recommended by the vast majority of Shelter Sector members'. This included the provision of financial and technical assistance (Norwegian Refugee Council 2013)
- The Shelter Cluster's priorities in response to the complex emergency (including armed conflict) in Somalia (2013-2015) included advocating for a 'self-help' approach to supporting IDPs. This included supporting affected households to build (or manage the construction of) their own shelters through the provision of financial and technical assistance (Shelter Cluster Somalia 2013).

[20] www.scopus.com, accessed 26.11.2015
[21] www.sheltercluster.org, accessed 26.11.2015
[22] www.sheltercasestudies.org, accessed 26.11.2015

2.3 How 'supporting shelter self-recovery' might work

Following the guidance of Popay et al. (Popay et al. 2006) a theory of change model for humanitarian interventions supporting shelter self-recovery of affected populations was developed (Figure 5). Humanitarian response is complex and the links between interventions, outcomes and impacts are 'messy, unpredictable and iterative... [However] used sensibly, this model is a useful starting point for mapping the causal assumptions underlying the specific objectives of an intervention, by providing a common framework to think about how the intervention will actually deliver the changes we wish to bring about' (Proudlock et al. 2009, p.16). According to Popay et al. 'a "theory of change" can contribute to the interpretation of the review's findings and will be valuable in assessing how widely applicable those findings may be' (Popay et al. 2006). The model proposed below will be further tested and refined during the process of the review.

Figure 5: Theory of change for humanitarian interventions supporting shelter self-recovery



Source: The authors, based on (Proudlock et al. 2009; DFID 2011; Buchanan-Smith & Cosgrave 2013; Yates et al. n.d.)

The primary **activity** is that affected households build or rebuild their shelter themselves or using the local building sector. For the purposes of this research, humanitarian programmes supporting shelter self-recovery are defined as providing a combination of material, financial and/or technical assistance (see Section 2.3.3 for further details).

The **outputs** of shelter interventions are generally reported as the number of products delivered or services completed by the implementing agency. For example the number and percentage of households having received shelter assistance or number of persons/households/communities provided with training related to shelter assistance[23].

[23] Examples output indicators for the Shelter Cluster can be viewed at www.humanitarianresponse.info/en/applications/ir/indicators/global-clusters/4/ind-type/output (accessed 08.12.2015)

The **outcome** of shelter self-recovery is that affected households live in 'adequate' shelters. The Sphere Project notes that 'adequate' shelter provides 'sufficient covered living space providing thermal comfort, fresh air and protection from the climate ensuring their privacy, safety and health and enabling essential household and livelihood activities to be undertaken' (2011, p.258)[24]. However, these vary in relation to important variables such as the climate and context, the duration of time households intend to live in the shelter and their social, cultural and livelihood practices. Each of these variables will affect what activities are required to take place within and adjacent to the shelter (or elsewhere within the settlement) and consequently the space, privacy, safety, security, thermal comfort and ventilation the shelter needs to provide (The Sphere Project 2011).

The activities, outputs and outcomes of shelter self-recovery also support broader physical, social, economic and environmental recovery and long-term risk reduction and resilience (**impacts**).

This review intends to synthesise evidence on both the **effects** (or outcomes) of humanitarian interventions supporting shelter self-recovery and the **process of implementation** (the conversion of inputs to outputs)[25]. The relationship between the outputs and outcomes of humanitarian interventions is often described as **effectiveness** or 'how well an activity has achieved its purpose' (Buchanan-Smith & Cosgrave 2013, p.54). **Efficiency**, on the other hand, describes the relationship between inputs, activities and outputs and 'evaluating efficiency usually requires comparing alternative approaches to achieving an output' (Buchanan-Smith & Cosgrave 2013, p.54). Thus, the terms effectiveness and efficiency have been used to describe the dual aspects of this research.

2.4 The need for this research

2.4.1 The demand for evidence

'The humanitarian system has never reached more people in so many places' (World Humanitarian Summit 2015). Yet, while funding for humanitarian response is at its highest level in history the average level of funding per person has dropped as need has outstripped supply (Stoddard et al. 2015). Historically there has been relatively little research into humanitarian interventions - with evaluation of interventions not common until the 1990s (Darcy et al. 2013; Dijkzeul et al. 2013)[26]. In the current context of increasingly limited resources there is 'an increasingly urgent need to generate knowledge about 'what works' (Proudlock et al. 2009, p.9) - both to inform decision-making and demonstrate the effectiveness of interventions (Darcy et al. 2013).

Despite increasing demand for evidence shelter and settlement interventions remain an under-researched aspect of humanitarian response (Peacock et al. 2007; Twigg 2002). This is a particular concern because without the security offered by somewhere to call 'home' the ability of families to return to normality is limited, and that delays in shelter recovery often delay all other aspects of recovery (Peacock et al. 2007). Furthermore 'if the international response continues with conventional product-based responses such as transitional and permanent shelter, it will not meet a

[24] Security (from crime or violence) is not mentioned in this standard regarding 'covered living space' but this appears to be an oversight as it is part of an earlier standard on 'strategic planning' and the introductory text to the shelter and settlement standards.
[25] See Section 4.5.1 for further details on Effectiveness and Implementation Reviews
[26] Dijkzeul et al. (2013) cite a number of reasons for this including: 'it was not considered appropriate to pose questions about the efficiency and effectiveness of life-saving action' (2013, p.S2); an acceptance of 'quick and dirty' data gathering in order to inform immediate action; that humanitarian agencies 'derive their legitimacy and credibility by making reference to their principles rather than to their evidence-based approaches' (2013, p.S2).

significant proportion of the need with a solution that is long term, high quality and safe' (Parrack et al. 2014, p.48).

Shelter and settlement experts (both practitioners and academics) have recently begun to publish evaluations and case studies on a previously unprecedented scale. For example the *Shelter Projects* database currently contains 167 case studies[27] while ALNAP's resource library contains 134 evaluation reports focussed on 'shelter and housing'[28]. While the level of documentation is increasing, 'evidence' within the shelter sector remains largely based on experience and expert opinion, project or programme evaluations, case studies and academic papers on specific topics – with little evidence on the outcomes or impact of programmes undertaken.

2.4.2 Stakeholder interest

As part of the scoping assessment for this review the Review Team undertook a series of stakeholder engagement activities (presentations at conferences, webinars, flyers, website, emails, mail-outs through online communities of practice and an on-line survey). There was a high-level of engagement and interaction from across a wide range of stakeholders, and a total of 49 respondents completed the online survey. Survey respondents represented policy makers (7%), researchers (22%) and practitioners (55%), from a diverse range of organisations including UN agencies, INGOs and various universities[29]. The respondents also represented a range of geographies: Africa (8%), Asia Pacific (18%), Europe (45%), Latin America and the Caribbean (6%), Middle East (12%) and North America (4%).

Survey respondents were asked to suggest specific subject areas/topics of interest in order to narrow the initial research question posed by HEP: 'What is the evidence on the impacts of different shelter and settlement strategies in the immediate aftermath of and recovery period following humanitarian emergencies?' The Review Team combined the findings from the stakeholder consultation with a mapping of the depth, breadth and nature of existing literature regarding humanitarian shelter and settlements in order to ensure that there was both interest and suitable documentation on a specific topic. Following this analysis the Review Team concluded that while there was significant demand for further research across a number of areas investigation of humanitarian interventions that 'support shelter self-recovery' was the most suitable topic for evidence synthesis.

Indicative research questions and topics suggested included:

- 'How do communities recover themselves without external support? Do they incorporate lessons learned? How can we strengthen the natural recovery process of communities?'
- 'Is it possible to maximise efficiency/effectiveness in delivery with a progressive/ iterative shelter approach, and how should cash and household participation fit into this?'
- 'What type of shelter training achieves the best long-term impact in affected communities?'

[27] www.sheltercasestudies.org
[28] www.alnap.org/resources/
[29] Respondents were asked to identify themselves as either: a) policy maker, b) researcher c) practitioner or d) other. Percentages given indicate where respondents identified as options a-c.

3.0 Aim of review and research questions

The aim of this review is to synthesise the existing evidence on the effectiveness and efficiency of interventions that support affected populations' own shelter self-recovery processes following humanitarian crises. In doing so we aim to address the following research questions:

1. What effects do interventions that support affected populations' own shelter self-recovery processes have on household level outcomes following humanitarian crises?

2. What factors helped or hindered the implementation of interventions supporting populations' own shelter self-recovery processes following humanitarian crises?

4.0 Method

4.1 Overview of Method

Table 2 below summaries the proposed research approach for the evidence synthesis. Based on the findings of the scoping assessment the Review Team anticipate that the studies selected for inclusion in this review will be qualitative or mixed methods. As a result, the process set out in Table 2 and detailed in this section focuses on completing a narrative synthesis of qualitative and mixed-methods research. Narrative methods of synthesis are useful for synthesising both quantitative and qualitative studies and have been used when the experimental and quasi-experimental studies included in a systematic review are not sufficiently similar for a meta-analysis to be appropriate (Mays, N., Pope, C. Popay 2005). Should quantitative studies, suitable for meta-analysis, be selected for inclusion the Review Team will revise this document accordingly.

Table 2: Proposed research approach[30]

Stage	Activities
Step 1: Develop Review Protocol	-Define the research question(s). See section 3.0 -Develop the eligibility (inclusion/exclusion) criteria. See section 4.2 -Define the databases, websites, search engines etc. that will be searched. See section 4.3 -Develop (and test) the search strings. See section 4.3 -Define the screening, data extraction and appraisal process. See section 4.4 -Define the type of evidence synthesis. See section 4.5
Step 2: Run the Search Terms and initial screening[31] **of the documents.**	-Run the search terms in the defined databases, websites etc. -Remove duplicates for documents identified through academic databases -First round of screening using a multi-pronged approach (in order of preference): a) Document contains abstract: All titles and abstracts will be screened; b) Document does not contain abstract: All titles and executive summaries will be screened; c) Document does not contain abstract nor executive summary: Full text screening. See Table 3 'Screening Guide' - Studies classified as either 'exclude' or 'potentially eligible'. - Remove documents from the review that do not meet the criteria - Enter all documents that meet the criteria into an excel database and save pdfs -Remove duplicates for all documents

[30] Table adapted from (Higgins & Green 2011; Humanitarian Evidence Programme 2015), and lessons learnt from undertaking the scoping assessment that preceded this protocol.

[31] Typically the first stage of a systematic review is 'Run the Search Terms' and the second stage is 'Screen the titles and abstracts'. However a key lesson from the scoping assessment is that due to the type of documentation available, and the interfaces of the repositories searched, it is not possible to adopt this approach for a large number of documents, primarily because they do not have abstracts (or contents pages/executive summaries/key words). Consequently these two stages have been merged, as the search terms and initial screening are undertaken at the same time to avoid the need to input documents that do not meet the eligibility criteria into the Review Team's document management database.

Step 3: Second screening of the documents.	-Second round of screening for full text of all studies that have been classified as 'potentially eligible' or where there is a doubt about potential eligibility. See Table 3 'Screening Guide' -Classify all documents as either 'included' or 'excluded'; record reason for exclusion -Import all documents that meet the criteria into Mendeley -Review references/bibliographies/citations of imported documents in order to identify additional documents ('snowballing'). Repeat steps 2 and 3 with any new records.
Step 4: Critical appraisal of 'included' studies	-Assessment of study quality. See section 4.4.3
Step 5: Data extraction and evidence synthesis	- Data extraction and evidence synthesis. See sections 4.4.2 and 4.5 - Contact authors of documents if any gaps in information, as required.

4.2 Inclusion and exclusion criteria

4.2.1 Types of population

Populations affected by humanitarian crises in low and middle-income countries will be the focus of this review[32]. Please note:

- Humanitarian crises include both 'natural disasters' and complex emergencies (including armed conflict) as defined in Section 2.1
- The World Bank classifications for low and middle-income countries will be used to determine eligibility for inclusion.[33]

Types of participants that will be included are households that were supported by shelter intervention(s) as defined in section 4.2.2. All beneficiaries of these types of shelter intervention(s) will be included, regardless of age, gender and race/ethnicity[34].

Types of participants could include those that were not displaced, those displaced within their home country, or refugees displaced in other low or middle-income countries.

Documents that record humanitarian crises shelter interventions supporting self-recovery in high-income countries will be excluded; as well as instances of responses to support refugees displaced to high-income countries.

4.2.2 Types of interventions

Types of interventions supporting shelter self-recovery that will be included are those that provide a combination of:

- material assistance (including construction materials, tools, salvaging and re-use of debris)

[32] The focus of the HEP is on research in low and middle income countries. High-income countries are not included within the scope of this review as the findings will have less transferability due to the significant differences in context (e.g. poverty levels, government resources available for humanitarian response, institutional strength, engagement of international actors etc)

[33] Please note, these classifications are revised annually on July 1st; therefore this review will use the classifications for the financial year 2015-2016. Further details on the World Bank classifications for low and middle-income countries can be seen here: http://data.worldbank.org/about/country-and-lending-groups

[34] Please note: Documents will not be excluded based on the age, gender or race/ethnicity of the participants; however where available, data relating to these categories will be disaggregated and analysed as part of Step 5 'Data extraction and evidence synthesis'. Please see section 4.5 for further details.

- financial assistance (cash or vouchers for the purchase of construction materials, tools or labour)
- technical assistance (including training and the provision guidance through guidelines/mass communications).

As part of humanitarian programmes which began implementation:

- within 18 months after a natural disaster
- within 18 months following return or resettlement as a result of complex emergencies (including armed conflict)
- during any time period for displaced populations while they are displaced as a result of 'natural' disasters or complex emergencies (including armed conflict)
- during any time period for non-displaced populations affected by complex emergencies (including armed conflict).

As defined in Sections 2.2 and 2.3 these interventions are intended to support populations affected by humanitarian crises to repair, build or rebuild shelters themselves or using the local building sector.

Types of interventions that will be excluded are:

- Interventions that did not: support displaced populations while they were displaced; or begin implementation within the first year after a natural disaster or within the first year following return or resettlement as a result of complex emergencies. Interventions that addressed disaster-risk reduction, climate change adaptation or development such as retrofitting of existing houses.
- Interventions that did not result in the construction or repair of a shelter, for example support for host families, rental support or distribution of household items.
- Interventions that did not directly support affected populations own shelter self-recovery, such as: contractor-built shelter and pre-fabricated temporary shelter; advocacy and legal support; site/settlement planning or infrastructure rehabilitation.

4.2.3 Types of outcome measures

Documents that identify any types of outcome measures will be included. These include physical, social, economic or environmental outcomes.

4.2.4 Types of study design

This systematic review will consider studies using an experimental or observational analytic design with comparison groups, such as randomised control trials (RCTs), quasi-RCTs, regression discontinuity design, and difference in differences. In the absence of analytic studies with a control group, documents without a control group but with multiple data points will be used, such as interrupted time series and single difference estimation. However, based on the findings of the scoping assessment that preceded this protocol, it is expected that very few documents of this nature will be identified. In the absence of sufficient analytic studies, descriptive (or non-analytic) studies will be used. We will include qualitative and mixed-methods studies, for example

evaluations[35] that collect data through approaches such as focus groups, interviews, surveys and questionnaires. To be eligible for inclusion such documents need to:

- be based on data collected from project or program beneficiaries, implementing agencies or other stakeholders;
- clearly identify and describe the activities, outputs and outcomes of the shelter intervention; and
- report on procedures for data collection, and analysis methods.

All secondary literature sources will be excluded, therefore publication types that will be considered ineligible include: 1) opinion pieces, 2) commentaries, 3) literature reviews [36], 4) debates, 5) guidelines, 6) marketing material, such as case studies of individual beneficiaries or households, 7) systematic reviews[36].

4.2.5 Other criteria for inclusion or exclusion

All studies published since 1990 will be eligible for inclusion. As noted in Section 2.4.1 evaluation of humanitarian interventions was not common until the 1990s. Humanitarian response has also changed significantly since the establishment of UN agencies such as the Office for the Coordination of Humanitarian Affairs (UNOCHA, previously UNDHA) in the 1990s.

We will exclude any documents not published in English, as it is not possible within the time and resources of the research to translate them.

4.3 Search Strategy

The research team will conduct a comprehensive systematic search for suitable literature, balancing the requirements of sensitivity and precision. The same search strategy will be used to identify studies used to address the primary and secondary review questions. There will be four input sources of documents:

1. Scoping assessment documents
2. Academic literature sources
3. Grey literature sources
4. Stakeholder engagement.

The search strategy was developed iteratively throughout the scoping assessment and protocol development, and was reviewed by the Review Team. Key papers were used to test the completeness of the search results.

4.3.1 Scoping Assessment documents

The research already undertaken as part of the scoping assessment will be included in the evidence synthesis.

As part of the scoping assessment phase the Review Team completed online searches of SCOPUS, the ALNAP Humanitarian Evaluation and Learning Portal, the Humanitarian Library and the websites

[35] From the Scoping Assessment the Review Team expect many of these will contain only one data point and no comparison group.
[36] Literature Reviews and Systematic reviews may be used to identify additional research material, 'snowballing'.

of the 11 Shelter Cluster Strategic Advisory Group members. The documents identified were combined with those recommended by stakeholders. In total 2,187 documents were identified. Of these, 60 documents met the inclusion/exclusion criteria and were included in the scoping assessment analysis. Please see Appendix A for further details of the repositories and search strategies used during the scoping assessment. The inclusion/exclusion criteria used during the scoping assessment are similar to those detailed in section 4.2 - see Appendix B for the scoping assessment inclusion and exclusion criteria.

The 60 documents identified during the scoping assessment will be screened for inclusion using the Screening Guide developed for this review (see Table 3)[37].

4.3.2 Academic literature sources

The following academic databases will be searched using the search terms set out in Appendix C:

- SCOPUS
- Web of Science
- PubMed
- ProQuest Dissertations and Theses
- DART-Europe E-theses Portal

Documents contained in SCOPUS were already reviewed as part of the scoping assessment, however this database will be revisited to identify any documents published since completing the scoping assessment and to test the additional search terms identified in Appendix C.

Documents selected for inclusion in the review will be entered into Google Scholar to conduct forward citation tracking as part of the 'snowballing' strategy.

4.3.3 Grey literature sources[38]

In order to access grey literature, the peer-reviewed literature search terms will be adapted to guide searches of humanitarian donor, practitioner and research network collections. Balancing the requirements for sensitivity and precision, with the resources available on this project, the following websites will be reviewed:

- Shelter Cluster
- Build Change
- DFID
- USAID/OFDA
- ECHO
- AusAid
- JOLIS -Joint Libraries of the World Bank and IMF
- British Library e-theses online service (EThOS)Humanitarian Exchange Magazine

[37] Whilst these 60 documents have been screened as part of the scoping study, they include a wide range of interventions and vary in quality (see Appendix B for the inclusion/exclusion criteria for the scoping assessment stage). Therefore these 60 documents will now be screened in order to identify those that are relevant for inclusion in this review.

[38] This list was compiled from a) recommendations from the Review Team; b) review of systematic reviews in the international development sector to identify the websites they reviewed; and c) suggestions received from the on-line stakeholder survey undertaken during the scoping stage (see section 2.4.2)

- IUCN, International Union for Conservation of Nature
- British Library of Development Studies (BLDS)
- ELDIS (Institute of Development Studies)
- 3ie's database of impact evaluations
- ProVention Consortium
- Abdul Latif Jameel Poverty Action Lab (J-PAL)
- Innovations for Poverty Action (IPA)
- ERRA Earthquake Reconstruction & Rehabilitation Authority
- Social Science Research Network (SSRN)
- I-Rec
- MIT Incremental Housing
- Oxfam
- Save the Children
- NSET
- The Overseas Development Institute
- IRIN
- Practical Action
- Plan International

For the grey literature searches, where there are no adequate search function exists on the website we will use 'Google search'.

Furthermore, the following grey literature sources searched as part of the scoping assessment will be revisited with additional search terms - new to this protocol - as required:

- ACTED
- Australian Red Cross
- Care International
- Habitat for Humanity
- IFRC
- Interaction
- International Organisation for Migration
- Norwegian Refugee Council
- UNHCR
- UN-Habitat
- World Vision International
- ALNAP
- Humanitarian Library

4.3.4 Stakeholder Engagement

We will reach out to stakeholders who were engaged during the first stage of the project (scoping assessment). We will contact them in order to:

- Update them on the focus of the research and the refined questions.

- Ask if they have any additional documents, specifically addressing the refined area of research.

4.4 Data collection

4.4.1 Screening of studies

The screening will take place in two rounds, step 2 and step 3 of the overall research process (See section 4.1). All studies retrieved will be screened against the inclusion and exclusion criteria using the screening guide (see Table 3).

In the first round of screening, the researchers will adopt a multi-pronged approach (in order of preference):

- *Document contains abstract:* All titles and abstracts will be screened;
- *Document does not contain abstract:* All titles and executive summaries will be screened;
- *Document does not contain abstract nor executive summary:* Full text screening.

Studies will be classified as either 'exclude' or 'potentially eligible'.

In the second round of screening, full text of all studies that have been classified as 'potentially eligible' or where there is a doubt about potential eligibility, will be assessed by the researchers. Studies will be classified as either 'included' or 'excluded', and reason for exclusion recorded.

For both stages we propose a team-based approach to review[39], which enables quality control of the screening process at several stages. It is proposed that the researchers review the same small selection of abstracts (for example, a sample of ten) and then discuss their application of the inclusion/exclusion criteria with each other and with the Principal Investigator to identify any differences of opinion and reach consensus. Through this initial collaborative process a common approach will be agreed and each researcher will continue to review a small selection of different abstracts, again followed by review and discussion with the rest of the Research Team. If through this second round of reviews, no significant differences are identified between the approaches of the researchers then they will continue to review the remainder of the abstracts. However if differences in the assessment of the eligibility of the texts continue to arise, a further round of double reading will be instigated.

Following the second round of screening, we do not expect to identify an impractically large number of relevant studies[40] for inclusion in the review. However, if that happens, we will exclude documents based on the start date of intervention following the humanitarian crises; for example revise the exclusion criteria to those that began implementation within 12, 9 or 6 months following the onset of the crisis (currently stated as 18 months).

If following this, there are still too many documents for inclusion in the synthesis, we will undertake a final stage of screening using section 1 and section 2 of the 'quality appraisal template' (see Appendix E) and exclude documents that are identified as the lowest quality.

[39] Please note: The same approach was undertaken for the Scoping Assessment that informed this protocol.
[40] The final number of documents included in the synthesis for this review will need to balance the requirements for sensitivity and precision with the resources available on this project.

Table 3: Screening guide

	Data to be extracted	Notes to reviewer
First round of screening		
1	Is the document about humanitarian interventions that support shelter self-recovery by providing all or a combination of: • material assistance (including construction materials, tools, salvaging and re-use of debris) • financial assistance (cash or vouchers) for the purchase of construction materials, tools or labour • technical assistance (including training and the provision guidance through guidelines/mass communications).	If clearly no, exclude (e.g. editorials, newspaper articles, different subject matter). If yes or unclear, include.
2	Is the document in English?	If the answer is no, exclude.
3	Was the document published after 1990?	If the answer is no, exclude.
4	Does the document describe intervention(s) in low and middle-income countries?	If the answer is no, exclude.
5	Does the document potentially include information about outcomes?	If the answer is clearly no, exclude.
Second round of screening		
6	Is the document based on data collected from project or program beneficiaries, implementing agencies or other stakeholders?	If the answer is no, exclude.
7	Does the document report on procedures for data collection and analysis methods?	If the answer is no, exclude.
8	Does the document report on interventions that were implemented: • within 18 months after a natural disaster • within 18 months following return or resettlement as a result of complex emergencies (including armed conflict) • during any time period for displaced populations while they are displaced as a result of 'natural' disasters or complex emergencies (including armed conflict) • during any time period for non-displaced populations affected by complex emergencies (including armed conflict).	If the answer is no, exclude.
9	Does the document clearly identify and describe the activities, outputs and outcomes of the intervention?	If the answer is no, exclude.

4.4.2 Data extraction

Each of the documents included will be interrogated and coded in detail.

Data will be extracted using a structured data extraction form; this will include a description of the study (author, title, date, study design) and information on the activities, outputs and outcomes of the intervention as well as the population and context. Data will be manually entered into a form in MS Excel to allow ease of comparison and analysis. See Appendix D for additional information.

Standardised codes will be developed and applied to extract data on the intervention activities and outputs, as well as the population and context. However, an inductive approach will be required to

the extraction and analysis of data on the effects of interventions and the factors which helped or hindered implementation. The effects or factors identified in the documents will firstly be captured in the data extraction form – as quotes or a very close paraphrase.

Due to the inductive nature of the data extraction process, data will be extracted in two rounds. In the first round, one reviewer will extract data from each document. Once all the documents have been through the first round, the second round will commence. In the second round, a second reviewer will re-interrogate the document and update the data extraction form as required. This two-step process will ensure that documents that were analysed early on in round one are re-assessed for data points that were identified from subsequent documents in round one. This will prevent data points being missed, which can be a risk with inductive data extraction.

If following this two-step process there are any data points that are unclear in the document or the reviewers are unsure of, these will be discussed with the Principal Investigator and he will make the final decision.

Where possible, and within the resources available, authors of primary studies will be contacted to provide essential missing or additional data. Contacted authors will be required to respond within 10 days in order to not cause any delay to the project.

4.4.3 Critical appraisal of included studies

There is ongoing debate about how qualitative study quality should be assessed for the purposes of systematic reviews (Atkins et al. 2008). Walker et al. note that even if one or several evidence assessment tools are selected, 'it is very likely that alterations will be required given that this is an emerging area of specialist research, and that research questions vary enormously'; they go on to conclude that 'implementation teams should simply be aware that hybrid assessment tools are inevitable, and should prepare for this eventuality' (Walker et al. 2013).

For the purposes of this review a 'quality appraisal template' was developed to assess the quality of the documents included in the review, recognising these would primarily be qualitative and mixed-methods studies. See Appendix E for the 'quality appraisal template'.

The principles of the 'quality appraisal template' were based on the following key factors underpinning quality (Posthumus et al. 2013; Centre for Reviews and Dissemination 2008):

- Appropriateness of study design to the research objective (e.g. the relevance)
- Risk of bias (e.g. the systematic deviations from the true underlying effect brought about by poor study design or conduct in the collection, analysis, interpretation or publication)

Specifically, the 'quality appraisal template' was developed from the Critical Appraisal Skills Programme (CASP) quality assessment tool for qualitative studies (CASP 2013)and the Mixed Methods Assessment Tool (MMAT) developed by Pluye and colleagues at McGill University (Pluye et al. 2011).

The quality criteria also draws on other adaptations of CASP from other reviews of qualitative or mixed-methods studies (Glenton et al. 2013; Rashidian et al. 2013; Posthumus et al. 2013) and

lessons learnt from using the MMAT (Walker et al. 2013)[41]. Through drawing on this range of sources, the tool includes criteria that assess the methodological quality of the studies and the quality of the reporting. CRD note the importance of recognising that 'the quality of the reporting does not necessarily reflect the quality of the underlying methods or data' (2008:41); consequently the 'quality criteria template' enables accurate reporting and distinguishes between failure to report a criterion and failure to meet a criterion[42].

For each document both reviewers will independently complete the 'quality criteria template'. The reviewers will then share, discuss and agree the assessment of each document against each of the criteria in order to determine an overall quality score. If the researchers are not able to reach consensus then they will involve the Principal Investigator who will make the final decision.

4.5 Data synthesis and analysis

The types of interventions being evaluated in this review are diverse in context, populations and methods of measuring outcomes. This will result in significant heterogeneity and thus pooling will not be possible. Findings will thus be summarised narratively, using text, diagrams and tables.

The analysis will follow the guidance provided by the Economic and Social Research Council (ESRC) Methods Programme for narrative synthesis in systematic reviews (Popay et al. 2006). This consists of four, iterative elements (see Table 4 for further details on the purpose of each element):

- Developing a theory of how the intervention(s) work, why and for whom
- Developing a preliminary synthesis of findings of included studies
- Exploring relationships within and between studies
- Assessing the robustness of the synthesis

4.5.1 Developing a theory of change

A preliminary 'theory of change' model for 'self-recovery' shelter interventions was developed for this review protocol (see Section 2.0), this model will be tested and refined during data synthesis. The importance of a 'theory of change is noted in Popay et al.: 'a "theory of change" can contribute to the interpretation of the review's findings and will be valuable in assessing how widely applicable those findings may be' (Popay et al. 2006).

Importantly, this approach is also increasingly common in humanitarian evaluations. For example the recent ALNAP Guide to Evaluating Humanitarian Action notes: 'the theory-of-change approach seems to be replacing the logical framework for some donors' (Buchanan-Smith & Cosgrave 2013, p.101) and that 'the growing popularity of the theory-of-change approach and the increasing emphasis on programme theory mean that explicitly theory-based designs are likely to become more popular' (ibid, p. 125).

[41] Lessons learnt included: 'The use of the MMAT tool in the child protection ASR for instance, while the best fit for the circumstance, lacked a comprehensive system to tackle the standards of research associated with non-RCT, mixed-methods and participatory processes'. (Walter et al. 2013:11)

[42] Using the following identifiers: 'Yes', 'Partially', 'No' or 'Unclear'

Table 4: The purpose of each of the main elements of synthesis for effectiveness and implementation reviews

Main elements of synthesis	Effectiveness Reviews	Implementation Reviews
1. Developing a theoretical model of how the interventions work, why and for whom	***Purpose:*** • To inform decisions about the review question and what types of studies to review • To contribute to the interpretation of the review's findings • To assess how widely applicable those findings may be	***Purpose:*** • To inform decisions about the review question and what types of studies to review • To contribute to the interpretation of the review's findings • To assess how widely applicable those findings may be
2.Developing a preliminary synthesis	***Purpose:*** • To organise findings from included studies to describe patterns across the studies in terms of: ○ The direction of effects[1] ○ The size of effects	***Purpose:*** • To organise findings from included studies in order to: ○ Identify and list the facilitators and barriers to implementation reported ○ Explore the relationship between reported facilitators and barriers
3. Exploring relationships in the data	***Purpose:*** • To consider the factors that might explain any differences in direction and size of effect across the included studies	***Purpose:*** • To consider the factors that might explain any differences in the facilitators and/or barriers to successful implementation across included studies • To understand how and why interventions have an effect
4. Assessing the robustness of the synthesis product	***Purpose:*** • To provide an assessment of the strength of the evidence for: ○ Drawing conclusions about the likely size and direction of effect ○ Generalising conclusions on effect size to different population groups and/or contexts	***Purpose:*** • To provide an assessment of the strength of the evidence for drawing conclusions about the facilitators and/or barriers to implementation identified in the synthesis. Generalising the product of the synthesis to different population groups and/or contexts

Source: (Popay et al. 2006)

4.5.2 Developing a preliminary synthesis

The preliminary synthesis will develop an initial summary of the results of the included studies. This study aims to investigate both the effectiveness and efficiency of the interventions described, and to date there is no common agreement on the typical effects of shelter interventions[43]. The preliminary synthesis will therefore organise the results of the included studies so that patterns may be identified in terms of:

- the type, direction and size of effects reported
- the factors that are reported as helping or hindering the implementation of an intervention.

Depending on the nature of the final documents identified for inclusion in the synthesis, tools that may be used at this stage include textual descriptions, grouping and clusters, tabulation, transforming data into a common rubric, and thematic analysis (Popay et al. 2006).

4.5.3 Exploring relationships in the data

As patterns emerge the Review Team will investigate:

- How and why the effects and factors identified have occurred
- Explanations for the differences between the effects and factors identified

[43] Although as discussed earlier there are ongoing multi-sector initiatives that this review will draw on, for example: https://www.humanitarianresponse.info/applications/ir/indicators/global-clusters/4

Exploring the influence of heterogeneity is important at this stage of the synthesis process. Relationships within and across the included studies will be explored. Specifically, two broad types of relationship will be investigated:

- Those between characteristics of individual studies and their reported findings
- Those between the findings of different studies

This will include a review of the differences in household level outcomes that can be observed between, as a minimum:

- The shelter strategy adopted (meaning the specific combination of interventions provided)
- The target population (displaced or non-displaced)
- The country or region of intervention
- The type of crisis (rapid or slow-onset, conflict, complex)
- The type of built environment (urban, rural, peri-urban).

Furthermore, where available, the data on the individual circumstances of the target population will be disaggregated, analysed and synthesised, for example, age, gender and race/ethnicity.

Depending on the nature of the final documents identified for inclusion in the synthesis, tools that may be used at this stage include graphs, moderator variables and subgroup analyses, developing conceptual models, qualitative case descriptions and investigator triangulation and methodological triangulation (Popay et al. 2006).

4.5.4 Assessing the robustness of the synthesis

Towards the end of the synthesis process, we will undertake an analysis of the relationships within and between the 'included' studies in order to assess the strength of the evidence available for drawing conclusions on the basis of a narrative synthesis. This will include systematic attention to all three elements of robustness:

- Methodological quality of the primary studies included in the review
- Trustworthiness of the product of the synthesis process (including the methods used in the synthesis)
- The extent to which reviewers have enough information to judge that individual studies meet the criteria for inclusion (Popay et al. 2006).

Depending on the nature of the final documents identified for inclusion in the synthesis, tools that may be used at this stage include reflecting critically on the synthesis process (Popay et al. 2006) and CERQual[44] (Lewin et al. 2015).

[44] The CERQual (Confidence in the Evidence from Reviews of Qualitative research) Approach provides a transparent method for assessing the confidence of evidence from reviews of qualitative research, and indicating this confidence to end users; it is specifically intended for findings from systematic reviews of qualitative evidence. For further details see: http://cerqual.org/

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6.0 Appendices

Appendix A: Scoping Assessment: Literature sources and search strategies

				STEP 4	STEP 5	
Name	**Website and Date searched**	**Search Terms**	**NUMBER OF DOCUMENTS**	**RELEVANCE AND SCOPE**	**QUALITY**	**REMOVE DUPLICATES**
IASC Strategic Advisory Group Agency Websites						
ACTED	http://www.acted.org/ 22/10/15	allintitle: site:http://www.acted.org/ shelter OR house OR housing OR home OR dwelling OR settlement OR neighbourhood OR neighborhood OR reconstruction OR evaluation OR assessment OR lessons OR learning OR learnt OR "after action" filetype:pdf	41	0	0	
Australian Red Cross	http://www.redcross.org.au/ 15/10/15	allintitle: site:http://www.redcross.org.au/ shelter OR house OR housing OR home OR dwelling OR settlement OR neighbourhood OR neighborhood OR reconstruction OR evaluation OR assessment OR lessons OR learning OR learnt OR "after action" filetype:pdf	11	0	0	
Care International	http://www.careinternational.org.uk/ 15/10/15	allintitle: site:http://www.careinternational.org.uk/ shelter OR house OR housing OR home OR dwelling OR settlement OR neighbourhood OR neighborhood OR reconstruction OR evaluation OR assessment OR lessons OR learning OR learnt OR "after action" filetype:pdf	6	0	0	
Habitat for Humanity	http://www.habitat.org/ 15/10/15	allintitle: site:http://www.habitat.org/ shelter OR house OR housing OR home OR dwelling OR settlement OR neighbourhood OR neighborhood OR reconstruction OR evaluation OR assessment OR lessons OR learning OR learnt OR "after action" filetype:pdf	129	0	0	
IFRC	http://www.ifrc.org/ 22/10/15	allintitle: site:http://www.ifrc.org/ shelter OR house OR housing OR home OR dwelling OR settlement OR neighbourhood OR neighborhood OR reconstruction OR evaluation OR assessment OR lessons OR learning OR learnt OR "after action" filetype:pdf	132	2	1	
InterAction	http://www.interaction.org/ 22/10/15	allintitle: site:http://www.interaction.org/ shelter OR house OR housing OR home OR dwelling OR settlement OR neighbourhood OR neighborhood OR reconstruction OR evaluation OR assessment OR lessons OR learning OR learnt OR "after action" filetype:pdf	93	1	1	
International Organisation for Migration	http://www.iom.int/ 22/10/15	allintitle: site:http://www.iom.int/ shelter OR house OR housing OR home OR dwelling OR settlement OR neighbourhood OR neighborhood OR reconstruction OR evaluation OR assessment OR lessons OR learning OR learnt OR "after action" filetype:pdf	131	1	1	

Norwegian Refugee Council	http://www.nrc.no/ 15/10/15	allintitle: site:http://www.nrc.no/ shelter OR house OR housing OR home OR dwelling OR settlement OR neighbourhood OR neighborhood OR reconstruction OR evaluation OR assessment OR lessons OR learning OR learnt OR "after action" filetype:pdf	37	4	4	
UNHCR	http://www.unhcr.org/ 24/10/15	allintitle: site:http://www.unhcr.org/ shelter OR house OR housing OR home OR dwelling OR settlement OR neighbourhood OR neighborhood OR reconstruction OR evaluation OR assessment OR lessons OR learning OR learnt OR "after action" filetype:pdf	235	5	4	
UN-Habitat	http://unhabitat.org/ 27/10/15	allintitle: site:http://unhabitat.org/ shelter OR house OR housing OR home OR dwelling OR settlement OR neighbourhood OR neighborhood OR reconstruction OR evaluation OR assessment OR lessons OR learning OR learnt OR "after action" filetype:pdf	301	1	0	
World Vision International	http://www.wvi.org/ 22/10/15	allintitle: site:http://www.wvi.org/ shelter OR house OR housing OR home OR dwelling OR settlement OR neighbourhood OR neighborhood OR reconstruction OR evaluation OR assessment OR lessons OR learning OR learnt OR "after action" filetype:pdf	28	0	0	
Humanitarian journals and libraries						
ALNAP	http://www.alnap.org/ 13/10/15	TITLE (shelter OR house OR housing OR home OR dwelling OR settlement OR neighbourhood OR neighbourhood OR reconstruction) ENGLISH ONLY	417	31	21	
Humanitarian Library	http://humanitarianlibrary.org/ 13/10/15	allintitle: site:http://humanitarianlibrary.org/ shelter OR house OR housing OR home OR dwelling OR settlement OR neighbourhood OR neighborhood OR reconstruction OR evaluation OR assessment OR lessons OR learning OR learnt OR "after action" filetype:pdf	120	7	2	
Academic databases						
SCOPUS	www.scopus.com (institutional login required) 19/10/15	• LANGUAGE (English) • TITLE (shelter OR house OR housing OR home OR dwelling OR settlement OR neighbourhood) AND • TITLE-ABSTRACT-KEYWORD (outcome OR impact OR effect OR consequence) AND • TITLE-ABSTACT-KEYWORD (disaster OR humanitarian OR "complex emergency" OR refugee* OR "internally displaced" OR IDP OR typhoon OR hurricane OR earthquake, etc.) • PUBYEAR > 1970	459	21		
Stakeholder Engagement						
Various.	Various.	All documents identified by stakeholders	47	15		

Duplicates						
Various.	Various.					10

TOTAL	**2187**		70	**60**

Appendix B: Scoping Assessment: Inclusion and exclusion criteria

	Include documents:	Exclude documents:
Scope	In English	Not in English
Relevance	Fully or partially about post-disaster shelter and settlement interventions in low and middle-income countries	About pre-disaster shelter and settlement interventions (development or disaster risk reduction/management) (OR?) post-disaster in developed countries
	Describe the outcomes or impacts of shelter and settlement interventions	Describe only the outputs of shelter and settlement interventions
Quality	Explain their methodology	Don't describe their methodology
	Clearly describe the shelter and/or settlement intervention being investigated	Don't clearly describe the shelter and/or settlement intervention being investigated
	Describe the results of qualitative, quantitative or mixed methods evaluations or research	Frameworks/theories, Guidelines, Opinion pieces, Synthesis reports, Systematic and non-systematic reviews

Appendix C: Example search strategy

Note: Search terms include both words (e.g. *house*) and phrases (e.g. *"internally displaced"*) of interest. A number of words are truncated using * in order to search for variations of the word (e.g. *shelter** identifies *shelter* and *shelters* and *sheltering*). See Section 4.3 for further details of the search strategy.

Concept 1: Shelter

Shelter*
House
Housing
Home
Homes
Dwelling*
Settlement*
Neighbourhood*
Neighborhood*

NOT
"care home"
"care homes"
"medical home"
"medical homes"
"nursing home"
"nursing homes"
"home care"
"medical house"
"home-grown"
"home treatment"
"home-based"
"home-delivered"
"home-produced"
"take-home"
"at-home"

Concept 2: Humanitarian crises

Disaster*
Humanitarian
Crisis
Crises
"Complex emergenc*"
"Armed conflict*"
"Conflict affected"
"Armed intervention*"
War
Wars
Refugee*
"Internally displaced"
IDP
Earthquake*
Flood*
Tsunami*
Cyclone*
Hurricane*
Typhoon*
"Tidal wave*"
"Volcanic eruption*"
Drought*
Famine*
Starvation
"Food insecurity"
"Storm surge*"
"Tropical storm*"
Displacement
Migration
Conflict
Avalanche*
Landslide*
Catastroph*
"large-scale emergenc*"
"mass emergenc*"

Concept 3: Support for shelter self-recovery

Self-recovery
"Self recovery"
Self-help
"Self help"
Self-build
"Self build"
"Material assistance"
"Financial assistance"
"Technical assistance"
Cash
Voucher*
"Construction material*"
Tool*
Training
Workshop*
Guideline*
Manual*
Poster*
Leaflet*

Flyer*
“Mass communication”
Phone
Radio
Television
TV
Internet
Newspaper
Advert
Broadcast

Concept 4: Effects
Outcome
Impact
Effect
Consequence
Evaluation
Assessment
Lessons
Learn*
“After action”

Limitations:
Documents in English
Documents published since 1990

Example SCOPUS search string
LANGUAGE(English) PUBYEAR > 1990 (TITLE(Shelter* OR House OR Housing OR Home OR Homes OR Dwelling* OR Settlement* OR Neighbourhood* OR Neighborhood*) AND NOT TITLE("care home" OR "care homes" OR "medical home" OR "medical homes" OR "nursing home" OR "nursing homes" OR "home care" OR "medical house" OR "home-grown" OR "home treatment" OR "home-based" OR "home-delivered" OR "home-produced" OR "take-home" OR "at-home")) AND (TITLE-ABS-KEY(Disaster* OR Humanitarian OR Crisis OR Crises OR "Complex emergenc*" OR "Armed conflict*" OR "Conflict affected" OR "Armed intervention*" OR War OR Wars OR Refugee* OR "Internally displaced" OR IDP OR Earthquake* OR Flood* OR Tsunami* OR Cyclone* OR Hurricane* OR Typhoon* OR "Tidal wave*" OR "Volcanic eruption*" OR Drought* OR Famine* OR Starvation OR "Food insecurity" OR "storm surge*" OR "tropical storm*" OR displacement OR migration OR conflict OR avalanche* OR landslide* OR catastroph* OR "large-scale emergenc*" OR "mass emergenc*")) AND (TITLE-ABS-KEY(Self-recovery OR "self recovery" OR Self-help OR "self help" OR Self-build OR "self build" OR "Material assistance" OR "Financial assistance" OR "Technical Assistance" OR Cash OR Voucher* OR "Construction material*" OR Tool* OR Training OR Workshop* OR Guideline* OR Manual* OR Poster* OR Leaflet* OR Flyer* OR "mass communication" OR phone OR radio OR television OR TV OR internet OR newspaper OR advert OR broadcast)) AND (TITLE-ABS-KEY(outcome OR impact OR effect OR consequence OR evaluation OR assessment OR lessons OR learn* OR "after action"))

Appendix D: Data extraction template

Summary of the data extraction form for all documents.

Section 1: Background data	
Bibliographic information	Author(s), title, year of publication, institution(s), citation, type of resource, how document was identified (e.g. stakeholder engagement or grey-literature)
Inclusion/exclusion criteria	Type of intervention (construction materials, tools, finance AND/OR technical assistance), population (context), study design, outcome measure, other criteria.
Study details	Type of study, study duration, data collection mechanisms, limitations of study (noted by study authors), analysis methods.

Section 2: Contextual data	
Crisis (Emergency) typology	Event type (complex emergency, natural disaster - plus earthquake, typhoon etc.), year(s) crisis occurred,
Geography	Country (and province, district, city etc. where possible), Urban/Rural/Peri-urban
Population	Non-displaced, displaced (IDPs), displaced (refugees), returnees

Section 3: Project/programme data	
Activities	Aim of programme, start and end date of project/programme type of intervention(s), complementary or integrated interventions, and any other program design characteristics.
Outputs	Output measures e.g. number of services or products delivered.
Outcomes	Outcome measures.
Implementation	Endogenous and exogenous factors which helped or hindered implementation.

Appendix E: Quality Appraisal Template

This quality appraisal template has been developed from by the authors from the following sources (listed alphabetically- for further details see section 4.4.3):

- (CASP 2013)
- (Centre for Reviews and Dissemination 2008)
- (Glenton et al. 2013)
- (Pluye et al. 2011).
- (Posthumus et al. 2013)
- (Rashidian et al. 2013)
- (Walker et al. 2013)

Use sections 1 and 2 for appraising all studies. Then for appraising a quantitative study, also use section 3A or 3B or 3C, for randomized controlled, non-randomized, and descriptive studies, respectively. For a qualitative study, also use section 3D. For a mixed methods study, use section 3D for appraising the qualitative component, and the appropriate section for the quantitative component (3A or 3B or 3C).

The Mixed Methods Assessment Tool (MMAT) developed by Pluye and colleagues (2011) at McGill University provides further guidance when answering questions 3A-3D.

Question		*Notes to support appraisal*	Yes	No	Partially	Unclear	Reviewer Comments
Section 1: Appropriateness of study design to the research objective							
1.1	Are the research questions and/or aims clearly stated?	E.g. What was the goal of the research? Why was it thought important?					
1.2	Is the approach (quantitative, qualitative or mixed-methods) appropriate to address the research question and/or research aims?	E.g. For qualitative studies, if the research seeks to interpret or illuminate the actions and/or subjective experiences of research participants					
1.3	Is the research approach (quantitative, qualitative or mixed-methods) justified?	E.g. If the researcher has justified the research design (e.g. have they discussed how they decided which method to use)?					

Section 2: Risk of bias: Data collection, reporting, ethics, publication, applicability							
2.1	Is the method of data collection clearly described?	E.g. If it is clear how data were collected (e.g. focus group, semi-structured interview, survey, questionnaire etc.); If the researcher has made the methods explicit (e.g. for interview method, is there an indication of how interviews were conducted, or did they use a topic guide; or for surveys if they were paper or on-line)? If methods were modified during the study. If so, has the researcher explained how and why? If the form of data is clear (e.g. tape recordings, video material, notes etc.)					
2.2	Is the data collection method appropriate to the research question?	E.g. Has the researcher justified the methods chosen? Is it clear why they have chosen the methods? Are the measures relevant and meaningful to both the intervention(s) and the study?					
2.3	Does it seem that all of the data collected for the study is reported?	E.g. Is there any evidence to suggest that the authors measured more outcomes than they reported?					
2.4	Is the method of analysis clearly described?	E.g. Is there is an in-depth description of the analysis process?					
2.5	Was the data analysis sufficiently rigorous?	E.g. To what extent are contradictory data taken into account? Are their any data points excluded? If so, why? Specifically for qualitative research, If thematic analysis is used, is it clear how the categories/themes were derived from the data?					
2.6	Is there a clear statement of findings?	E.g. Are the findings supported by sufficient data? I.e. did the data provide sufficient depth, detail and richness? Are the findings explicit? Are the findings discussed in relation to the original research question? Has the researcher discussed the credibility of their findings?					
2.7	Is appropriate consideration given to the limitations of the study?	E.g. Are the limitations identified? Are the limitations associated with that design type identified, and the manner in which the research was undertaken and the data analysed e.g. when integrating findings or mixed-methods the possible divergence of qualitative and quantitative data (or results*) in a triangulation design?					
2.8	Have ethical issues been taken into consideration?	E.g. If there are sufficient details of how the research was explained to participants for the reader to assess whether ethical standards were maintained; If the researcher has discussed issues raised by the study (e.g. issues around informed consent or confidentiality or how they have handled the effects of the study on the participants during and after the study)					
2.9	Are the findings likely to be transferable to other contexts? (applicability or external validity)	E.g. How closely does the study reflect routine practice or the usual setting where the intervention would be implemented? Do the researchers discuss whether or how the findings can be transferred to other populations or considered other ways the research may be used					

Depending on the study design please then complete 3A, 3B, 3C or 3D. For mixed methods studies criteria for the qualitative component (3D), and appropriate criteria for the quantitative component (3A, 3B or 3C), must be also applied.

Section 3A: Quantitative randomized controlled							
3A.1	Is there a clear description of the randomization (or an appropriate sequence generation)?	E.g. The allocation of a participant (or a data collection unit, e.g., a school) into the intervention or control group is based solely on chance, and researchers describe how the randomization schedule is generated					
3A.2	Is there a clear description of the allocation concealment (or blinding when applicable)?	E.g., Researchers and participants are unaware of the assignment sequence up to the point of allocation (group assignment is concealed in opaque envelops until allocation) or researchers and/or participants are unaware of the group a participant is allocated to during the course of the study.					
3A.3	Are there complete outcome data (80% or above)?	E.g., Almost all the participants contributed to almost all measures.					
3A.4	Is there low withdrawal/drop-out (below 20%)?	E.g., Almost all the participants completed the study.					
Section 3B: Quantitative nonrandomized e.g. non-randomised control trials, cohort, case-control, cross-sectional analytic							
3B.1	Are participants (organizations) recruited in a way that minimizes selection bias?	E.g. At recruitment stage: For cohort studies, e.g., consider whether the exposed (or with intervention) and non-exposed (or without intervention) groups are recruited from the same population. For case-control studies, e.g., consider whether same inclusion and exclusion criteria were applied to cases and controls, and whether recruitment was done independently of the intervention or exposure status. For cross-sectional analytic studies, e.g., consider whether the sample is representative of the population.					
3B.2	Are measurements appropriate (clear origin, or validity known, or standard instrument; and absence of contamination between groups when appropriate) regarding the exposure/intervention and outcomes?	E.g. At data collection stage: Consider whether (a) the variables are clearly defined and accurately measured; (b) the measurements are justified and appropriate for answering the research question; and (c) the measurements reflect what they are supposed to measure. For non-randomized controlled trials, the intervention is assigned by researchers, and so consider whether there was absence/presence of a contamination. E.g., the control group may be indirectly exposed to the intervention through family or community relationships.					
3B.3	In the groups being compared (exposed vs. non-exposed; with intervention vs. without; cases vs. controls), are the participants comparable, or do researchers take into account (control for) the difference between these groups?	At data analysis stage: For cohort, case-control and cross-sectional, e.g., consider whether (a) the most important factors are taken into account in the analysis; (b) a table lists key demographic information comparing both groups, and there are no obvious dissimilarities between groups that may account for any differences in outcomes, or dissimilarities are taken into account in the analysis.					

3B.4	Are there complete outcome data (80% or above), and, when applicable, an acceptable response rate (60% or above), or an acceptable follow-up rate for cohort studies (depending on the duration of follow-up)?						
Section 3C: Quantitative descriptive e.g. incidence or prevalence study without comparison group, case series, case report							
3C.1	Is the sampling strategy relevant to address the quantitative research question (quantitative aspect of the mixed methods question)?	E.g., consider whether (a) the source of sample is relevant to the population under study; (b) when appropriate, there is a standard procedure for sampling, and the sample size is justified (using power calculation for instance).					
3C.2	Is the sample representative of the population understudy?	E.g., consider whether (a) inclusion and exclusion criteria are explained; and (b) reasons why certain eligible individuals chose not to participate are explained.					
3C.3	Are measurements appropriate (clear origin, or validity known, or standard instrument)?	E.g., consider whether (a) the variables are clearly defined and accurately measured; (b) measurements are justified and appropriate for answering the research question; and (c) the measurements reflect what they are supposed to measure.					
3C.4	Is there an acceptable response rate (60% or above)?	The response rate is not pertinent for case series and case report. E.g., there is no expectation that a case series would include all patients in a similar situation.					
Section 3D: Qualitative e.g. ethnography, phenomenology, narrative, grounded theory, case-study, qualitative description							
3D.1	Is the recruitment strategy appropriate for the research question?	E.g. Does the document describe how participants were selected? is the selection of the participants appropriate?					
3D.2	Are the sources of qualitative data (informants, observations) relevant to address the research question (objective)?	E.g., consider whether (a) the selection of the participants is clear, and appropriate to collect relevant and rich data; and (b) reasons why certain potential participants chose not to participate are explained.					
3D.3	Is the study context clearly described?	E.g. Is appropriate consideration given to how findings relate to the context, e.g., the setting, in which the data were collected?					
3D.4	Is appropriate consideration given to how findings relate to researchers' influence, e.g., through their interactions with participants?	E.g. Is the role of the researcher clearly described? Does the researcher critically examined their own role, potential bias and influence during (a) Formulation of the research questions (b) Data collection. How the researcher responded to events during the study and whether they considered the implications of any changes in the research design					
Conclusion: [reviewer to provide summary] – high/medium/low							