Case Study: Shelter Innovation Ecosystem

Bill Gray and Simon Bayley
May 2015

Executive Summary

This case study presents an analysis of the innovation ecosystem within the shelter sub-sector of humanitarian response[1]. It is based upon twenty-five in-depth interviews with administrators, practitioners, and researchers, all of whom have long and deep experience of working in the sector, as well as both published and unpublished secondary source material.

Two main conceptual frameworks underpin the analysis. The first is an idealised model of system dynamics of innovation. This identifies the different stages and activities typically involved in innovation: recognition of need; generation of new ideas; creation of plausible solutions; development and implementation and; diffusion. The second framework, referred to as the "Rs framework" throughout HIE project material, seeks to uncover the detailed factors influencing how this system operates across several fields: resources, roles, relationships, rules, routines, and results. Taken together, these frameworks allow a characterisation of the main elements of the shelter ecosystem, and assessment of the influences that either facilitate or inhibit the successful movement of innovations through the various stages of the innovation process.

The study presents two overarching and interrelated findings relating to the predominant focus of innovation in contemporary humanitarian shelter. Firstly, that innovation in shelter is today more likely to be concerned with improvements in *process* than it is about the introduction of new *products.* And secondly that, because of urbanisation and the increasingly *spatial* nature of disaster response and recovery, innovation in shelter is increasingly focused more on *facilitation* than with direct action. This is because, although the humanitarian endeavour's primary concern is the saving of lives, quality humanitarian shelter programming as presently understood has explicit links to issues such as long-term post-disaster developmental needs and disaster-proofing as well as the interaction of those affected by displacement with their communities, public services and the built environment.

The study reveals that while there clearly is an innovation ecosystem in the shelter sector, its optimal functioning is impeded by:

1. the demand-driven nature of shelter activity;
2. the ad hoc nature in which participants engage with shelter activities;
3. the sector's historically limited professionalism; and
4. the lack of emphasis on formal learning.

It further shows that while there is still a need for improvements in physical (i.e. product-orientated) emergency shelter, many of the solutions proposed are either inappropriate or unaffordable, and that this can be attributed to the weaknesses of the sector listed above.

---

[1] It builds on the literature review undertaken as part of the DFID-funded Humanitarian Innovation Ecosystem (HIE) research project carried out by Brighton University, and is one of five sector specific case studies for that project.

The study argues that the existing constituents of the innovation ecosystem and aspiring new entrants have clear potential to lead the sector in interesting and important new directions. However, the institutional funding architecture is an impediment in an urbanising world as long as it continues to treat the process of shelter response and reconstruction as a continuum, instead of adopting a holistic approach to solutions addressing a multitude of simultaneous and parallel shelter needs.

Table of Contents

Table of figures

Boxes

Figures

Acronyms

Acronym	Description
CCS	Concrete Canvas Shelter
CENTRIM	Centre for Innovation Management, University of Brighton
CSO	Civil Society Organisation
DEC	Disasters Emergency Committee
DFID	UK Department for International Development
ECHO	European Commission Humanitarian Office
GSC	Global Shelter Cluster
HARITA	Horn of Africa Risk Transfer for Adaptation
HERR	Humanitarian Emergency Response Review
IFRC	International Federation of the Red Cross and Red Crescent Societies
IOM	International Organisation for Migration
MiCRO	The Haiti Micro-Risk Catastrophe Risk Organisation
NGO	Non-Governmental Organisation
NRC	Norwegian Refugee Council
RIBA	Royal Institute of British Architects
SDC	Swiss Development Cooperation
TSA	Transitional Shelter Approach
UNDRO	United Nations Disaster Relief Organisation
UNHABITAT	United Nations Human Settlement Programme
UNHCR	United Nations High Commissioner for Refugees
UNOCHA	United Nations Office for the Coordination of Humanitarian Affairs
USAID	United States Agency for International Development
WASH	Water, Sanitation and Hygiene

Section 1: Introduction

Study objectives and approach

This case study presents an analysis of the innovation ecosystem within the shelter sub-sector of humanitarian response. It builds on the literature review undertaken as part of the DFID-funded Humanitarian Innovation Ecosystem (HIE) research project of Brighton University. Alongside several other sub-sectoral case studies,[2] it informs the Final Report for the Humanitarian Innovation Ecosystem Research Project March 2015[3] Brighton University's final HIE project report on the functioning of the humanitarian innovation ecosystem.[4]

In addition to characterising the recent operation of the innovation ecosystem in shelter, the study's focus is on the lessons this characterisation offers for enabling greater support to innovation in humanitarian shelter in the future. It therefore offers an opportunity to reflect upon the six key general recommendations to the international humanitarian community of DFID's 2011 Humanitarian Emergency Response Review (HERR, Box 1),[5] and to look at some of the issues which prompted the HERR to assert that *"....Providing adequate shelter is one of the most intractable problems in humanitarian response.....".*

> **BOX 1**
> **Six recommendations to the International Humanitarian Community from the HERR**
>
> - Develop a more anticipatory approach to prepare for disasters and conflict;
> - Create resilience through both longer-term development and emergency response;
> - Improve the strategic, political and operational leadership of the humanitarian system;
> - Innovate to become more efficient and effective;
> - Increase transparency and accountability towards both donor and host-country populations; and
> - Create new partnerships and build and strengthen existing ones.

This case study highlights the fact that innovation in the sector is as much about changes and improvements in *process* as it is about the introduction of (a) new *product(s)*; that increasingly, especially as urban disasters gain greater prominence, *facilitation* is viewed as important as, if not more-so than, direct *implementation*; and that, while the main focus is upon *humanitarian endeavour*, emergency shelter provision (and thus innovations in the way it is provided) cannot be seen as discrete from long-term *development* (settlement) needs.

---

2 Other case studies published alongside this study on shelter address the following humanitarian sub-sectors: WASH, finance, food, cash and health.
3 Bessant et al. (2014).
4 Ramalingam,et al. (2015 forthcoming).
5 Summarised in: ICAI (2014).

Concepts, frameworks and methodology

Two main conceptual frameworks underpin the analysis. The first is an idealised model of system dynamics of innovation. This identifies the different stages and activities typically involved in innovation: recognition of need; generation of new ideas; creation of plausible solutions; development and implementation; and diffusion. The second framework, referred to as the "Rs framework" in HIE project material, seeks to uncover the detailed factors influencing how this system operates across several fields (Box 2). Taken together, these frameworks allow a characterisation of the main elements of the shelter ecosystem, and assessment of the influences that either facilitate or inhibit the successful movement of innovations through the various stages of the innovation process.

BOX 2 **The R's**	
Routines	The cultural, institutional, policy, technological, practical issues that determine whether or not an innovation is developed, adopted and propagated.
Resources	The human, financial and institutional assets available for innovation development.
Roles and *Relationships*	Who occupies what role in the innovation development and adoption ecosystem; and are they facilitators or impediments to change?
Rules	What are the mandate, evidence and accountability demands that serve as a facilitator of or brake on innovative behaviour?
Results	How are results achieved and how is success measured?
Restrictions	What prevents innovation from happening; or, if innovation takes place, what hinders more widespread adoption?

The study presents its 8th "R", *Recommendations* subsequent to its conclusions, identifying issues for the consideration of policymakers, donors and humanitarian practitioners that might lead to the current innovation ecosystem being better harnessed to address the likely needs (and thus the space for innovation) in the sector in the near future.

Evidence was gathered from a comprehensive literature review of policy and practice over the horizon 2000-2014, from 25 face-to-face or telephone/skype interviews with practitioners, academics, policy experts and policy-makers and from physical or virtual attendance at sector expert meetings. Opinions expressed are unattributed.

Section 2: Shelter sector overview

What is Shelter?

"[*Shelter*] *must be considered as a process, not as an object*".[6]

The provision of humanitarian shelter is the act of fulfilling the tangible and intangible shelter needs of those affected by a humanitarian emergency. The humanitarian right to shelter is codified in a series of international laws relevant to post-disaster populations.[7] Humanitarian guidelines outline a series of fundamental needs to which shelter should look to attend (**Box 3**), however generally these may be summarised as the:

- Preservation of individual dignity, privacy and security;
- Establishment of a 'home' as a keystone for self-orientation and recovery; and
- Protection from hazards.

Humanitarian shelter is therefore more than merely a protective physical structure; it serves as a foundation for livelihoods, health and wellbeing, and a basis for the engagement of the family and community with services and the built environment. In contemporary humanitarian policy and practice, it is understood as a practical and flexible space that responds to the individual circumstances of the beneficiary.

BOX 3
Summary: Sphere Standards on 'Adequate' Housing

The Sphere Handbook, Humanitarian Charter and Minimum Standards in Humanitarian Response, is an internationally recognised set of common principles and universal minimum standards for humanitarian response. Sphere standards summarise adequate housing as providing:

- Sufficient space and protection from climatic hazards or other threats to health, including structural hazards and disease vectors
- Availability of services, facilities, materials and infrastructure
- Affordability, habitability, accessibility, location and cultural appropriateness
- Sustainable access to natural and common resources; safe drinking water; energy for cooking, heating and lighting; sanitation and washing facilities; means of food storage; refuse disposal; site drainage; and emergency services
- Safe access to healthcare services, schools, childcare centres and other social facilities and to livelihood opportunities
- Expression of cultural identity and diversity of housing through housing policy and construction.

The humanitarian engagement of post-disaster shelter needs

The means by which shelter needs are met by humanitarian agencies in post-disaster situations are determined by the emergency context, the spectrum of shelter needs (who needs what, where and when), the degree of displacement of the affected population and the population's willingness or ability to remain in/return to their original dwellings. A humanitarian response

---

6 Davis, I. (1978).
7 International Convention Relating to the Status of Refugees (1954), Article 21 and; Universal Declaration of Human Rights (1948), Article 25.

will additionally be informed by existing shelter and settlement risks (location, planning, design and construction) including those dwellings or communities worsened by the impact of disaster.

The degree of engagement assumed by agencies will vary according to respective organisational mandates, their capacity and the efficiency of assessment and targeting. Their programme considerations will also vary greatly according to context. For instance, informal urban settlements are commonly more diverse, heterogeneous and complex than rural communities and are therefore likely to require a far greater inter-sector collaboration for holistic humanitarian and development programming.

Irrespective of the type of humanitarian response, the key proposition of the sheltering process is that it go *beyond* life-saving relief, and that it map the route for post-disaster recovery and reconstruction. Where possible, humanitarian shelter programming should, furthermore, aim at to reduce future *vulnerability* to displacement.

Delivering on these dual objectives requires consideration of more than how to *deliver* or *enable access* to the different typologies of humanitarian shelter; it also demands serious thought about beneficiary engagement; long-term and concurrent settlement issues such as sustainable access to social and basic services, land and property rights, the local economy and economic opportunities, and adaptation to a changing climate.

A continuum or a contiguum[8]?

Given the complexity of this approach, shelter assistance commonly involves a combination of measures across three, often concurrent or overlapping phases: **emergency**, **recovery** and **durable solutions.** This approach acknowledges that development does not enter a state of general suspension as the result of a shock and instead looks to integrate (as opposed to link) relief and recovery with long-term development. This stands in contrast with the fact that the humanitarian and development system architectures prefer to treat sheltering as a set of linear relationships. Indeed, it has encouraged an almost inevitable dysfunction across the spectrum of shelter activity, with different innovative efforts being prompted at each stage and financed from separate sources (**Box 4**).

> **BOX 4**
> **Implications of the Sequentialisation of Emergencies for Shelter Programming**
>
> The administrative conventions that separate emergency relief, rehabilitation and reconstruction financing reflect the "relief to development continuum" (also termed Linking Relief and Rehabilitation to Development (LRRD)) and tend to describe humanitarian action as linear. Framed by these conventions, shelter provision has been subject to this 'routing' of its assistance, with different skillsets being deployed at different points along a humanitarian spectrum defined by discrete activities, understandings and approaches. This sequentialisation has proven to be a major barrier to the provision of shelter solutions for those affected by disaster in a way that addresses relief, rehabilitation and recovery needs concurrently.

James Lewis: Continuum or Contiguum? Development for Survival and Vulnerability Reduction. Fifth ESA Conference 2001: Helsinki Session VI: Disaster and Development: A vital connection; Accessed 13 April 2015

In the *emergency* phase, shelter is immediately concerned with *survival.* For both displaced and non-displaced post-disaster populations, this may include the provision of rapidly deployable basic materials such as tents, plastic sheeting and shelter kits to help recipients live in relative safety when repair, re-location or construction/adaptation of alternative shelter is otherwise impossible. The implicit assumption of such life-saving emergency shelter is that the displacement of the recipient will not outlive the serviceable lifetime of the goods provided. Where they do not provide for incremental improvement towards durable solutions, emergency shelter provisions are labelled as 'temporary' solutions, even if those solutions are palpable innovations or improvements on what went before.

Figure 1 Emergency Humanitarian Shelter: Prefabricated or made from local materials such as timber, bamboo, plastic, corrugated iron or bricks, emergency shelter is quickly assembled and provides short-term shelter.

Once survival needs have been met, the priorities of affected populations turn to *recovery* and developing *durable solutions.* Affected populations try to start the recovery process as quickly as possible and rarely wait for formal assistance (indeed, the description of a timeline for recovery is misleading given the differential access to resources of the affected population).[9] Whether supported through a range of options deployed by humanitarian agencies or their own self-management, recovery may take place in the immediate aftermath of a disaster or after several days as risks diminish. Recovery may also happen over a number of years whilst the displaced remain in temporary or transitional shelter (see Figure 2).

In the *recovery* phase, agencies will look to provide technical, financial and material support to transitional options, as well as incrementally upgradable transitional shelter buildings appropriate to the particular needs. They will also seek to support the repair, reconstruction or adaptation of existing dwellings on behalf of both the displaced and non-displaced to reduce future disaster risk and where land rights issues allow. Given the importance of livelihoods to the recovery process, the preservation of livelihood assets may be an essential component of supporting recovery. Whatever the approach and status of the affected population, the intention

---

9 Anecdotal evidence following Hurricane Ivan in Jamaica in September 2004 recounts that affected populations, dependent on the upcoming tourist season, carried out minimum repairs on their dwellings, preferring to rehabilitate structures that assured them of an income in the immediate future.

of all humanitarian support in the recovery phase is to bridge the gap between disaster response and permanent re-housing, resettlement and reintegration.

Figure 2 Transitional shelter: See page 14 for more on the transitional shelter concept innovation.

The 2011 Sphere Guidelines (figure 3) demonstrate the diversity of pre- and post-disaster settlement and the post-disaster shelter options of affected populations.[10]
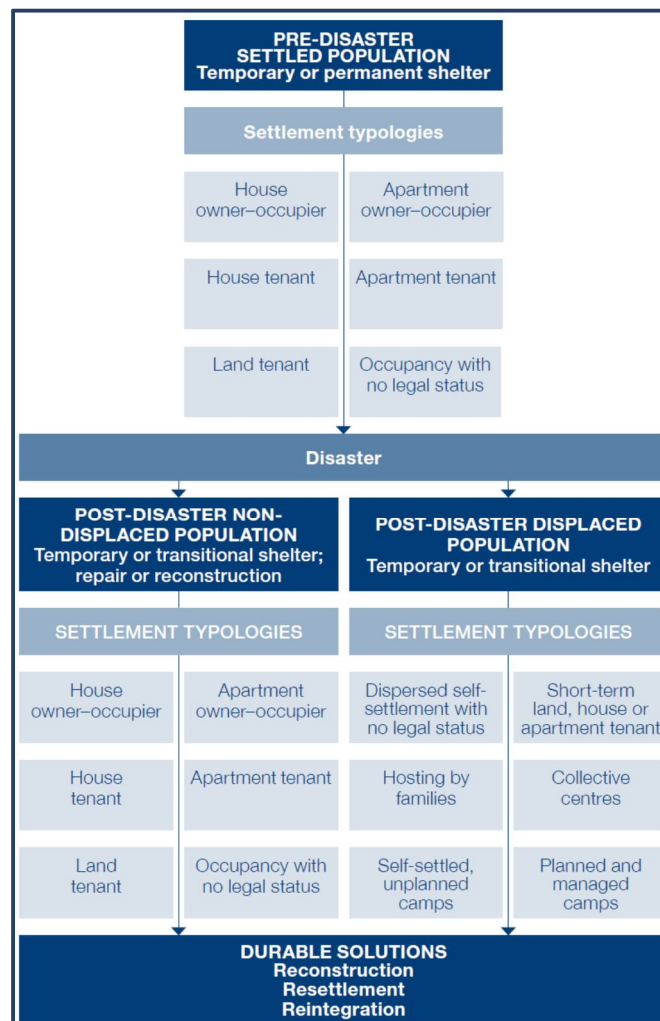

Figure 3: Shelter and Settlement Options and Response Scenarios

---

10 Sphere Project (2011), p.245.

For humanitarian agencies, *durable post-disaster solutions* are perhaps the most complex aspect of the shelter process. As in the recovery phase, there is no perfect solution that applies to every disaster or to every person affected by the same disaster. Questions of land tenure and rights (see Box 5 below) location, durability, safety and quality are more complex, and the interaction of social, political, cultural and economic factors arguably deserve greater attention given the need to establish a sustainable legacy of resilience or reduced disaster risk. Support for the construction of durable, multi-hazard- proof housing that goes beyond the physical structure is therefore a long-term and highly context-sensitive process requiring the substantial commitment of effort, finance and skilled human resources by humanitarian and other agencies.

> **BOX 5**
> **Housing Land and Property Rights**
>
> Barriers to assisting those who can legally prove their ownership over a given territory are often lower than those who are displaced. However, as humanitarian operations increasingly focus on urban and informal settlements, providing durable solutions can be particularly costly, protracted and beset by bureaucracy. Indeed, the ease with which a humanitarian agency may be able to provide assistance to formal landowners and to residents of an illegally occupied urban apartment building, even for minor repairs, is markedly distinct. This disparity is worsened by trends in global population distribution that favour urban dwelling, as well as the average duration of an internal displacement crisis, which now stretches to 17 years (Internal Displacement Monitoring Centre 2014).

In 1982, UNDRO published *Shelter after Disaster, Guidelines for Assistance.*[11] This was the first comprehensive overview of humanitarian shelter practice which, at the time, was described by the UNDRO authors as "*one particular sector in which too little progress has been made, and in which many conservative and obsolescent attitudes survive*".[12] Several key questions shaped the principles proposed by the report which reflected sectoral concerns at the time:

- How should disaster assistance be dispensed? Should it be simply given away, subsidized or marketed in the affected area?

- How can outside help be balanced with local self-help?

- What type of housing or shelter should be provided – temporary or emergency?

- How can the active participation of the affected community be mobilized during the post-disaster phase?

- How can the government retain control of housing reconstruction?

In responding to these and other questions, the guidelines established basic principles of post-disaster shelter assistance that took a holistic view of need from the perspective of the beneficiary across related matters of governance, land rights, health and WASH. They reflected the earlier work of leading expert Ian Davis,[13] and extended discussion beyond the *physical structure* to embrace *contextual issues* concerning social, economic, technological, environmental, political and other considerations. The publication asserted that "*until it is fully and widely understood that shelter is a process rather than a product, many housing programmes,*

---

[11] UNDRO (1982).
[12] Ibid, iii.
[13] Davis, I. (1978).

however well-meaning, will fall short of expectations".[14] This might be seen as the prototype of an innovation process in the sector that has continued to develop in response to a changing operational environment.

Davis' work and the UNDRO guidelines had a considerable influence on subsequent developments in post-disaster shelter assistance. Indeed, with the exception of many private sector and academic organisations that even today continue to view shelter as an autonomous universal object,[15] conceptual agreement around the idea that "*relief is the enemy of recovery, so minimise relief to maximise recovery,*"[16] has remained a key policy orientation for innovation in humanitarian post-disaster sheltering.

Despite this well-founded conceptual basis, many of the questions raised by the UNDRO report remain only partly resolved in practice to this day. In response to lessons learned from the Sphere revision process of 2004, a leading expert summarised the key dilemmas for shelter sector stakeholders as broadly similar to those highlighted by UNDRO over 20 years earlier citing:

- poor definition of the sector;

- an absence of common terminology;

- inadequate *how-to* guidance;

- limited recognition of local contexts and coping strategies;

- narrow engagement of beneficiaries and governments;

- a disconnect between technical advisors and field practitioners;

- a conflict between temporary and durable solutions; and;

- limited incorporation of broader developmental issues such as livelihoods.[17]

It may also be added that, seemingly unlike any other technical humanitarian discipline, shelter has been regarded as the potential domain of all-comers, regardless of their expertise in the required skills or their stake in the 'marketplace'.

The reasons such challenges have persisted are explored in more detail throughout this report. However, in general, they relate to matters falling broadly under notions of shelter as a humanitarian discipline; its structural financing; the human resource shortfalls; the politics of property; and the institutional coordination of stakeholders.

Added to this are the very real operational constraints that have inhibited progress. For instance, and as noted in the previous section, land tenure is a critical factor in delivering durable solutions to displacement and can have differing levels of complexity in different cultures and jurisdictions. In urban settings too, problems of informal settlement, population

---

14 Ibid.
15 This point is explored in more detail in Sections 4 and 6 of this study, as well as in the Concrete Canvas Shelter case study, p.23.
16 Keonigsberger, 1973, quoted in Davis (2013), p.6.
17 Saunders (2004).

density, space, rubble clearance, government capacity and the intentions of landlords compound the already difficult issue of delivering a satisfactory shelter solution.

Even before addressing questions of appropriateness, quality and disaster-proofing, support for long-term processes of post-disaster reconstruction is possibly the most costly, long-term, politically challenging and multi-disciplinary form of engagement in the humanitarian portfolio.

It is perhaps therefore unsurprising that the HERR reached its rather gloomy conclusion that *"…providing adequate shelter is one of the most intractable problems in humanitarian response."* (This conclusion is mirrored in Ian Davis's compilation of expert opinion of the sector's most stubborn challenges, published nearly 40 years after his pivotal publication, 'Shelter after Disaster').[18]

The difficulty of delivering shelter programmes that effectively meet the needs of post-disaster populations is best summarised by the common opinion among many experts interviewed in the course of this work, that few agencies – including members of the Global Shelter Cluster (GSC) - would claim any particular shelter expertise beyond immediate response, preferring to avoid the expensive, protracted and bureaucratic risks involved in long-term engagement.

Moving forward: developments in policy and practice

While the foregoing discussion suggests that attempts to put into practice the conceptual basis on which the sector is agreed have generally proven problematic for innovation development,[19] there has been some notable progress, and particularly so in the period embraced by this case study.

The Transitional Shelter Approach and the T-shelter

Perhaps the first paradigmatic shift in what many experts would agree to be the 'right direction' occurred when the Shelter Project, an independent university-affiliated not-for-profit organisation established at the University of Cambridge in 2001, introduced the transitional settlement approach (TSA). A USAID-InterAction workshop report referred to the approach's transformative influence:

> *"The shelter and settlements sector is currently undergoing a period of growth and expansion both in terms of the conceptual framework that guides it and the funding and resources that fuel it. A working definition of shelter is increasingly recognized as wedded to a broader notion of transition. The current spotlight on transitional shelter represents a movement along a continuum away from traditional shelter and towards a transitional settlement approach."[20]*

The TSA proposed to support those displaced by disaster *"from emergency response to durable solutions"* in a way that *"considers the wider impacts of settlement.*[21] TSA also intended to address

---

18 Davis (2013).
19 In 2006 OCHA noted that since 1982, *"innovations in post-disaster shelter and housing have been limited"*. OCHA (2006), p.29.
20 InterAction and USAID (2006), p.3.
21 Shelter Project (2005), p.3

the fact that post-disaster sheltering is often undertaken by affected populations themselves, and that this self-management should be supported. TSA therefore sought to go beyond the approach that had previously dominated humanitarian shelter programming, "*with its limited focus on the provision of planned camps*" and instead looked to provide enhanced support for "*all the shelter and settlement options that are open to displaced people*" in post-disaster settings.[22] After consultations with stakeholders at biennial fora hosted by the Shelter Project, these transitional options were categorised as follows:
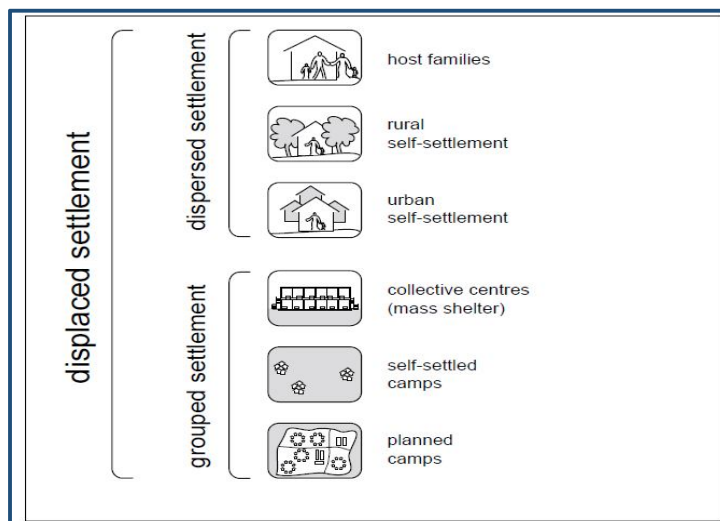
Figure 4: Six Transitional Settlement Options[23]

Where the above six options might be regarded as unsuitable during recovery and the progress towards a durable solution, the TSA proposed a seventh typology in support of the transition of both displaced and non-displaced populations, the transitional shelter (t-shelter).[24]

T-shelters are designed to circumvent land tenure constraints[25] and make use of shelter materials distributed in the emergency phase, as well as local building materials, to incrementally develop a durable solution. T-shelter structures may be "*reused in part or in whole in more permanent structures, or relocated from temporary to permanent locations and can promote the transition by affected populations to more durable shelter*".[26] As a manifestation of the TSA, T-shelters were envisaged for use as part of a comprehensive inter-sector shelter strategy that could support the transition of affected populations to durable solutions.

---

22 Ibid, p.7.
23 Figure from Ibid, p.9.
24 T-shelter is explored in more detail as a case study in this report, p22.
25 Although experience in some urban environments has tended to confound this objective.
26 Sphere Project (2011), p.252.

Figure 5 Incremental development to a humanitarian T-shelter.

The TSA and the T-shelter approach were first deployed in response to the Indian Ocean Tsunami of 2004 following the secondment of Shelter Centre (previously Shelter Project) staff through DFID to UNHCR in Sri Lanka, and UN OCHA in Indonesia. Because almost all the agencies and shelter specialists participating in the coordination of the Tsunami response also participated in the biennial 'Shelter Meeting' forum for shelter and reconstruction, consensus around general approaches to shelter needs following the Tsunami was formed very quickly on the basis of pre-established common understandings around good technical practice, terminology and coordination.

The TSA/T-shelter approach fitted well with the Build Back Better maxim adopted for the Tsunami response, in so far as they proposed meaningful consideration of both the transformative implications of technical assistance, and the long-term consequences of emergency humanitarian relief. Some 60,000 t-shelters were built in 6 months in Sri Lanka, and tested later in Aceh before the publication of the TSA guidelines in 2005, detailing lessons learned from the experience.[27]

TSA and T-shelters were deployed in Kashmir (2005), Yogyakarta (2005) and Pisco (2007), and in post-conflict return (Sri Lanka 2007) and post-election violence (Kenya 2008). The success of the approach was reflected in the Shelter Centre's leading role in publishing a revision to the 1982 UNDRO *Shelter After Disaster* guidelines, and informed several key shelter publications of that period including:

- the World Bank's '*Safer Homes, Stronger Communities: A Handbook for Reconstructing after Natural Disasters*';[28]

- the Sphere Project's '*Humanitarian Charter and Minimum Standards in Disaster Response*';[29] and

- Shelter Centre and NRC's '*Urban Shelter Guidelines: Assistance in Urban Areas to Populations Affected by Humanitarian Crises*'.[30]

---

[27] In Haiti 2010 however, this was arguably to the detriment of the t-shelter as a technical response. See for instance, Fan (2013).
[28] World Bank (2010).
[29] Sphere Project (2011).
[30] Crawford (2010).

In the same year that each of these documents were published however, the 2010 Haitian earthquake marked a second watershed in the thought and practice of humanitarian shelter. In particular, the event strongly challenged the applicability of the t-shelter as it had been hitherto understood for 21st century humanitarian crises. The scale of the disaster; the sheer numbers of intervening NGOs and charitable groups; the predominantly urban nature of the population, with 80% of inhabitants being renters; and the paralysis of government both before and after the disaster, gave lease to a series of publications suggesting that lessons from previous - largely rural – deployments of the T-shelter in particular were of limited utility and transportability and in some cases, even counter-productive.[31]

There are some good examples of t-shelter use in response to the Haitian earthquake, in particular where land ownership was not in contention, but they are few relative to the scale of the need. In general, and as presented by the DEC, the resort to t-shelters by many agencies "*as a viable urban option here have been subjected to a barrage of criticism from all sides*",[32] with them reportedly labelled variously as 'a total waste of money', 'counter-developmental' and 'suiting NGO timeframes and marketing needs' rather than the needs of the disaster-affected.

In articulating the concerns of many shelter stakeholders, the DEC evaluation of the response in Port-au-Prince reflected the particularly pressing concern of the World Bank; that urban risk represents a 'game changer' for humanitarian shelter.

> "*[If] this is right, and urban risk presents something different, then agencies need to learn 'new rules of the game' in urban post disaster response. Issues of complexity, range of actors, space, the importance of commerce and trade, services, infrastructure and sheer concentrations of people require a consideration of how to operate compared to rural contexts, including collaborations (with government and the private sector), the importance of cash based programmes…, markets…and housing (considering trade-offs between short term shelter and long term settlements and thinking about forms of rental).*"[33]

Re-defining assistance: Facilitation and the capacity challenge

The experience of many agencies in Haiti has led to the more widespread adoption of approaches which take the TSA's focus on *facilitation* a step further, placing even greater emphasis on local capacity and resources to meet post-disaster shelter need.[34]

This is not to suggest that the provision of emergency, transitional and reconstruction shelter assistance is no longer regarded as necessary where appropriate. Rather, it represents a concerted shift towards the re-framing of the typologies of humanitarian post-disaster shelter assistance in terms of the house dweller, with the sector now actively recognising an almost universally agreed truth, that those affected by disaster *"are the first responders during an emergency and the most critical partners in reconstruction"*.[35]

---

31 For example, formal or informal camps established immediately following a disaster may in fact become extensions to (or ghettos of) the city with limited access to services and meagre employment opportunities.
32 Clermont et al. (2011), p.2.
33 Ibid.
34 As the DEC Haiti evaluation goes on to say: "*Concerning shelter overall, other approaches appear to be gaining better results…UN-HABITAT advocates for 'the facilitation of shelter rather than its provision', ie working to support people to rebuild*" Ibid, p. 2.
35 World Bank (2010), p.1.

In addition to increasing recognition of the complexities in the urban operating environment (as well as issues of accountability, appropriateness and cost-effectiveness), part of the reason for this shift relates to the increasing scale of disasters. As Flinn notes:

> "*Cyclone Nargis in Myanmar (2009) destroyed 450,000 houses, Cyclone Sidr in Bangladesh (2007) 400,000, the Pakistan earthquake (2005) 400,000 and the floods in Pakistan in 2010 an extraordinary 1.6 million homes. To put this into perspective, the number of houses built in England by the entire construction industry is typically in the order of 150,000 a year.*"[36]

Flinn goes on to state that "*It is hard to draw any other conclusion: the aid community clearly does not have the capacity to provide post-disaster housing on a significant scale.*"[37] Indeed, with mobile-enabled remittance flows now regularly outstripping total aid in post-disaster situations,[38] the question of how to help beneficiaries to help themselves transition to durable housing solutions has never been so pressing for humanitarian agencies.

While it is worth noting that some agencies followed the lead of UN HABITAT in the Haiti response by advocating for the *facilitation* of shelter rather than its *provision*, for instance through the design and provision of adaptable shelter kits by Tearfund, the British Red Cross and CARE International, [39] the shelter sector's response to Typhoon Haiyan in the Philippines demonstrates the extent to which facilitation is gaining traction in humanitarian shelter programming. As the DEC evaluation report on the first six months of the humanitarian response to Haiyan notes, the sector used learning from Port-au-Prince which offers potential for application in other urban settings:

> "*[CARE] and its partners developed a participatory process for the roll-out of shelter kits by firstly establishing local committees …which included local officials, health workers, Parent Teacher Community Alliance members and older people …responsible for reaching decisions on who received the kits. Any complaints coming from the communities about the project were addressed with the complainant or in community-wide meetings…Community members who did not receive kits appreciated this transparent and well-coordinated, systematic approach. Roving teams of community members were trained to undertake monitoring and provide technical support on construction. Building the capacity of community members to undertake these roles increased the acceptance of the project and "building back safer" messages because they were promoted…by familiar people*".[40]

Cash or kind?

Of course, given the growing emphasis on facilitation over provision, questions concerning cash transfer programming and how it might best be deployed are growing in prominence in the shelter sector, particularly now that cash itself is gaining broader acceptance across the humanitarian system in general (see Food and Cash Case Study in this series).[41] And while the use of cash itself is nothing new to humanitarian sheltering, with cash for work and conditional and

---

36 Flinn (2013).
37 Ibid.
38 Ibid.
39 Clermont et al. (2011), p. 15.
40 Crowley (2014).
41 Humanitarian Futures Programme (2014).

unconditional transfers commonplace, at issue today is how programmes under these broad terms go to scale to meet the increasing needs of an urbanizing world

Meeting this challenge will require reaching beyond already pressing questions around, for example, the impact of cash on local markets and the crossover with development practice. It is likely to furthermore involve serious thinking about how agencies will change perceptions of cash as *a technical tool* so that it becomes better understood as a *cross-sector strategic intervention* for building greater post-disaster resilience. It will also, for instance, require agencies to rethink the kinds of relationships they may need to forge with governments and cause them to ask:

- Do governments view social protection as a desirable model for post-disaster shelter assistance?

- What would this look like?

- What would be the impact for the facilitation of shelter by humanitarian agencies?

- What kinds of new expertise would be required were cash to become the predominant form of post-disaster shelter assistance?

Although not a new innovation in itself, these and other such issues around cash have yet to enter the core of the debate between operational humanitarian shelter agencies.[42] However, given that they herald a fundamental reframing of the donor-beneficiary relationship, understanding the nature of the innovation ecosystem within which they are likely to feature is an important task ahead of those looking to harness its potential.

Alternatives to cash and kind: Insurance-based approaches to shelter and livelihoods risk

> *"Shelter is a commercial activity that doesn't fit in a "gift" economy…the international community should do site and service and leave the private sector to fill the urban space"[43]*

While effort in the past has concentrated on the development of improved emergency shelter and disaster-proofing for physical structures for the next potential crisis, attention has turned towards protection from the financial risks of property ownership in disaster-prone environments. These have ranged from large, government-backed insurance schemes such as:

- FONDEN, the Government of Mexico inter-ministerial post disaster reconstruction fund established in 1996 and designed to provide immediately-available funds for the rebuilding of 100% of federal assets and, in the first instance, 50% of local government assets. While receiving no less than 0.4% of the national budget in any year, plus any unspent annual budget allocations in the trust fund set up for its management, it covers any overspend through the issuing of catastrophe bonds (2006) and MultiCat bonds (2009 and 2012)[44]; and

---

42 Other critical issues are outlined in: Ibid.
43 Interviewee comment: October 2014
44 FONDO (2013).

- The Turkey Catastrophe Insurance Pool established in 1999, requiring the participation of all private property owners (although this is still not fully adhered to), and dealing in catastrophe bonds underwritten on international financial markets;[45]

Or mid-sized private- and voluntary-sector collaborations such as:

- The Haiti Micro-Risk Catastrophe Risk Organisation (MiCRO), a donor- and private-sector-funded insurance facility established in partnership with Mercy Corps and several regional and international insurance companies to benefit voluntarily participating micro-entrepreneurs[46],[47].

To more locally- based initiatives such as:

- the HARITA (Horn of Africa Risk Transfer for Adaptation) project in Ethiopia, a collaboration between the Swiss Re and Rockefeller Foundations, national voluntary organisations, national private insurance companies and academia, managed by Oxfam America in Ethiopia and providing a 'work-for-premiums' insurance scheme to protect participating farmers against drought risk[48], [49] an approach which can clearly be adapted for other forms of property and livelihoods protection in different environments.

Catastrophe insurance allows insurers and reinsurers to spread the risk of a major disaster, allowing a major return to investors if no catastrophe occurs in the lifetime of the catastrophe bond, but, equally, protecting the insurer's liquidity in the event of a disaster, and ensuring a cash return to those insured.

Disaster-proofing insurance represents a relatively new departure for the sector. But, with continuing urbanisation and increased disaster risk as a result of both poorly planned urban spread and a changing climate, encouragement of insurance provision and uptake represents a further opportunity to exploit the function that many see as an important future role for the shelter sector.

---

45 The TCIP is a compulsory insurance scheme for all home-owners with legal title to land, covering 81 cities and underwritten by 30 participating insurance and reinsurance companies
46 MercyCorps (2014).
47 World Bank (2011)
48 Swiss Re Foundation (2013), p.22.
49 Oxfam America (2011).

Section 4: The humanitarian shelter innovation ecosystem

"If you were to ask a shelter expert what constitutes the shelter innovation ecosystem, [a large majority would say] we are long way from that."[50]

This section discusses the innovation interactions between elements of the shelter sector, and identifies the ways in which the semi-structured nature of this engagement has served, and may continue to serve, innovation development. It illustrates the failure of the constituent members of the shelter innovation ecosystem to interact effectively in a systematic manner.

The inherent complexity of sheltering as a humanitarian discipline largely explains the fragmented state of its innovation ecosystem. As presented earlier, shelter is not understood as iterative[51] and is as much, if not more, concerned with *process* (systems) as it is with *product* (specific outputs). With quality shelter programming therefore contingent upon continued interaction to ensure the completion of a complex process which can embrace many different assistance needs simultaneously, the constituents of the shelter innovation ecosystem reflect the shelter sector itself. These constituents are therefore equally numerous, their responsibilities broad and their interactions consequently more difficult to harmonize. Again, this has been exacerbated in recent years by growing urbanisation, more frequent urban crises and their related particularities.

Furthermore, the shelter sector, perhaps more than any other represented in the cluster system, is *demand driven*. When the demand arises, it is often overwhelming expects an immediate and visible response which is presently disproportionately weighted towards satisfying short-term needs at the expense of long-term reconstruction. Moreover, the institutions that can assure continuity of process (such as regional development bodies and development banks) only engage substantively at the conclusion of the humanitarian (life-saving) phase. This militates towards an 'object' rather than 'process' response within the ecosystem.[52] This, in turn, explains why the ecosystem concentrates its energy and resources on the short- rather than the long-term.

The 'frontloading' of the shelter innovation ecosystem is perhaps best evidenced by current private sector involvement in innovation development, which commonly looks to arrive at physical solutions to humanitarian shelter need and tends to engage only at scale.[53] Many practitioners feel that the private sector should be supporting reflection, learning and the transition of approaches towards shelter and settlements.[54] For its part, the private sector complains that while the humanitarian community sector wants its support, it is very unclear as

---

50 Interviewee comment, October 2014.
51 "*Recovery is not a smooth process - each household or settlement is at a different point from the start of a crisis*". Interviewee comment, November 2014.
52 This problem, among others, is something the TSA specifically sought to address, by bridging the gap between relief and development and was also recognised in UNHCR's 'Out of Camp' policy.
53 See the Concrete Canvas Shelter case study included in this study, p.23.
54 While by no means commonplace, some work is being done in this area. For example, Arup has been involved with the humanitarian sector since 2005, was a significant contributor to the Tsunami Evaluation Commission, and has recently published a City Resilience Framework in association with the Rockefeller Foundation. Its work with IOM on flood-proof vernacular rebuilds in Pakistan is another good example

to what form that support should take. This has at times resulted in inappropriate shelter products and wariness in the humanitarian community towards private sector engagement.

Leadership

The membership of the shelter ecosystem is varied and variable (with the participation of academia being *ad hoc*, and, as noted below, the entry and exit of responding agencies according to the humanitarian context), and there is no single body or process apart from the Global Shelter Cluster (numbering around 30 members and the function of which is to coordinate) that either defines the 'shape' of the shelter system or ensures its systematic functioning.

Figure 6 Global Shelter Cluster membership as of February 2015

While governed by an internationally agreed set of standards set out in the Sphere handbook; by procedures described in the emergency manuals of the various relief agencies; or by agreed principles developed through the GSC, the Shelter Meeting and region-specific Shelter Forums; the convergence of practitioners, academics, the private sector and donor governments to share experience and ideas is at best periodical, and at worst *ad hoc*. This has been exacerbated by the demise of the Shelter Centre as an active NGO following its failure to secure on-going funding from 2011,[55] and its transformation to a resource centre hosted by a website.

---

55 Shelter centre was funded by DFID between 2006 and 2011.

The absence of a strong central agency has arguably been damaging historically, is a continuing issue in the present and, with increasing global disaster risk compounded by the expansion of formal and informal urban settlements demanding innovative approaches to shelter and long-term reconstruction, will be a preoccupying problem for the future.[56]

At present, the global shelter response system is led by different agencies according to the prevailing circumstance. While the UNHCR *leads* the Cluster for conflict related displacement issues (subcontracting many operations to implementing partners), the IFRC *convenes or co-chairs* the cluster members for crises resulting from natural disasters[57]. If this division of labour appears straightforward, it is complicated by the fact that:

1. **UNHCR's** mandate, requiring it to lead multi-sectoral operations in a refugee crisis, for which no cluster is needed, 'trumps' its Cluster lead status for conflict-affected IDP populations;

2. **IFRC's** role is effectively dual-mandate, in that it *both* convenes the cluster, establishes best practice approaches for cluster members, *and* implements programmes through its national society members under the aegis of the cluster response;

3. **UN HABITAT**, mandated to address long-term urban settlement policy, has led the Shelter Cluster on a number of occasions at country level (as the situation has moved from immediate disaster response to rehabilitation and reconstruction);

4. **The International Organisation for Migration (IOM)** holds a mandate for economic, conflict and general migration, while playing a leading role within the cluster system in camp coordination and camp management in natural disasters.

With the leadership burden varying year to year, it almost inevitably brings different institutional emphases to different situations.[58] Moreover, with around 30 permanent members at the international level, and more than 300 at the national level,[59] there is clear potential for only partially coherent responses in an increasing number of different disaster situations.

Set against the seemingly diffuse nature of the leadership of the shelter community is the perception that, in the absence of a dominant partner, there is room for healthy, reasonably democratic debate and consensus-building. A number of members of the shelter community consider that this can contribute to a common understanding of needs, and therefore the processes and approaches which might best meet those needs. The community's openness to

---

56 The GSC has broadened its mandate to embrace Working Groups, included in which is the Technical and Innovation WG (itself partly prompted by the demise of the Shelter Centre). In December 2014 the Working Group had 2 members and had published no new documents in the strategy period commencing April 2013.
57 The IFRC, being bound by its mandate of neutrality, is unable to associate itself directly with the UN system, and fulfils its role on the terms described in a MoU signed with UNOCHA in 2006.
58 The GSC home page of 1st November 2014 notes that there are "*24 active shelter clusters or cluster-like mechanisms*" worldwide led by 6 different organisations.
59 IFRC (2010).

influence can also inform its strategic direction, as with the introduction of the Shelter Projects publications which showcase innovative approaches to shelter provision.[60]

Skills and Expertise

Limited leadership at the top of the pyramid is reflected in the expertise available throughout it, with the sector generally suffering from a limited skills base and poor staff retention. Shelter departments within many NGOs are small and therefore limited in their expertise while until recently, no formal academic support for skills development has been in place[61]. For instance, ECHO, the largest funder of humanitarian shelter programming, has no dedicated shelter expert and USAID only one.

All this has led to limited investment in capacity-building, an atrophied institutional memory, and a resultant failure to effectively learn.[62] It is a commonly-held view that experience is harboured in the minds of the consultant community, which is more preoccupied with getting a job done than investing time and effort in learning.

A common additional criticism from within the shelter community is that implementing agencies, concerned about their public profile and market share, tend to prioritise information useful for marketing over the capture of data, by evaluations or otherwise, useful for institutional learning.

While improvements have been made in this respect after the 2004 Indian Ocean Tsunami, these factors have made it historically very rare for the impact of shelter projects to be assessed, even in the short-term. The lack of applicable evidence for further research and programme improvement this has produced is arguably responsible for:

- **An aversion to risk and thus to investment in innovative approaches**:[63] This is partly explained by the hesitation, for ethical reasons, to experiment in a vulnerable population, and partly by the preference for investment in tangible 'objects' over improvements in the process from emergency shelter response to final settlement.

- **Funding architecture favouring the continuum**: i.e. sequential programming (see above Box 4 above) and associated funding streams favoured over the 'contiguum' approach of holistic programming.

- **Limited attention span**: Private enterprise and academia tend to have only a partial engagement, often related to the magnitude of a disaster, and on occasion offer fixes that are inappropriate, impractical or uneconomic.[64]

---

[60] The most recent version ofseamless the Shelter Projects publication 2011-2012, available here: http://unhabitat.org/shelter-projects-2011-2012/.
61 This has now been partly remedied by shelter specific courses and modules at the universities of Oxford Brookes, Lund, Trondheim and Eindhoven.
62 The Shelter Centre, with its associated Shelter Library (now the Humanitarian Library), and the national and regional Shelter Forums, attempt to address this issue.
63 According to Haas, Cox and Gijsbers (2013), global investment in innovation in the construction industry is 7.6% of total spend and unknown in the humanitarian sector.
64 This is not peculiar to the shelter sector.

Deliberately or not, either insufficient attention is devoted to the national and local organisations that both know their clientele and are the real first responders in a disaster or, the learning from that engagement is insufficiently disseminated to the wider shelter community.

The fragmentation of knowledge in the sector is further exacerbated by the fact that surge capacity staff for immediate response are rarely those technically equipped to deliver the most effective response. They also often lack the skills to talk to local authorities and planners about the differential needs of affected communities, which is worsened still by the partial or total absence local authorities, especially in the urban context, particularly in the relief phase. As such, effective learning across the spectrum of the sheltering process is hampered from the outset, and the transition from the attendance of immediate life-saving need to permanent reconstruction is impeded (see Box 6)

BOX 6
Academia and innovation in humanitarian shelter

The engagement of universities and research institutions tends to be sporadic, despite the fact that many leading thinkers in shelter are, or have been, practitioners in the reasonably recent past. Engagement is often dependent upon the scale of a given humanitarian shelter crisis. This has meant that the inventiveness of academic institutions is lost to the wider community and the opportunity to consolidate evidence and learning from current and past shelter responses is limited or lost.

Academic institutions are regarded by the 'inner circle' of the shelter community as overly influenced by the individual interests of the researcher and the prerogatives of their departments and therefore constrained in their most productive contribution to innovation. Moreover, agencies tend to criticise the role of academia as overly focused on shelter as a problem of physical architecture or engineering rather than working on innovations in the *process* that serves as the conceptual basis of their action and increasingly the practical orientation of their work.

Community of practice

As noted above, many of the key implementing partners in the shelter sector already coordinate and collaborate through the GSC. The cluster, however, whilst eclectic in its membership and reflecting the wide range of needs raised by a shelter crisis, represents only a small proportion of actors in the sector. Indeed many of these also have an *ad hoc* involvement, with the largest percentage of responders to shelter crises, namely national and local NGOs and CSOs, largely absent from this forum.

This limited global membership is to some degree mitigated by the presence of national and regional shelter forums or their corollaries created through the Shelter Centre, InterAction (the Shelter and Settlements Group) and other intermediaries; the reach of the Red Cross/Red Crescent movement; and, increasingly, the development of e-Libraries to promote the flow of information and best practice. In the absence of a formal innovation testing and review system,

these bodies come closest to a *User Review Panel* as found in the health innovation sector,[65] without being legitimised in the same manner.

Beyond these fora, the shelter community of practice is longstanding, with a historic reach into academia, government departments, donors and the private sector, including engineering and construction companies and architecture practices, as well as with commercial enterprises proposing innovative approaches to shelter provision from within and outside the immediate community. Moreover, there is a remarkable cohesiveness in the expert community, with members moving between different constituent elements of the sector which arguably serves as a powerful force for new and workable innovation.

---

65 See the Health Innovation Ecosystem study in this series.

Section 5: Exploring the shelter innovation ecosystem – Case Study examples

The literature review developed in earlier phases of this project presented the matrix below, Figure 7, for the categorisation of innovations within the humanitarian system.

'The innovation management matrix....... is defined by two axes. The vertical is the degree of novelty involved, running from incremental (doing what we do but better) through to radical innovation (doing something completely different). The horizontal is a measure of environmental complexity, defined as the number of elements in the environment and their interaction, running from simple to complex.

Zone 1 (bottom left) of this model is a simple environment, typified by predictable trajectories, known competitors, well-understood markets, established technological sources, etc. Innovation here is about *exploit* and favours established incumbents since it brings well-oiled experience and leverages prior knowledge. It plays on well-established routines and exploits strong ties within existing networks; it is predominantly about incremental improvement innovation.

Zone 2 (top left) is *exploring* within this broad frame, pushing the trajectory but not jumping off it. Innovation here involves calculated risks, bigger investments in learning and spreading the search net more widely but it also still assumes that core framework conditions do not change. Examples here might be Intel building a next generation chip, GSK finding a new blockbuster drug, or Microsoft pioneering a new move in operating systems. Innovation here is closer to radical but still within a bounded frame.

By contrast Zones 3 and 4 (right hand side) are characterised by complexity – interactions and secondary effects resulting from these interactions. They are less prone to managed and planned innovation because they represent evolving situations which bring in new elements – new stakeholders, new technologies, different market constituencies, etc. In general working in this space is less about predictability and planned innovation and more about exploration and experiment. In short it requires much more of an entrepreneurial orientation.'[66]

Shelter-specific examples relating to each of the zones shown in the matrix explore some of the ways in which innovation in humanitarian shelter is expressed in terms of products and processes.

---

[66] Taken from Innovation Management, Innovation Ecosystems and Humanitarian Innovation; Literature Review for the Humanitarian Innovation Ecosystem Research Project, Brighton University, June 2014
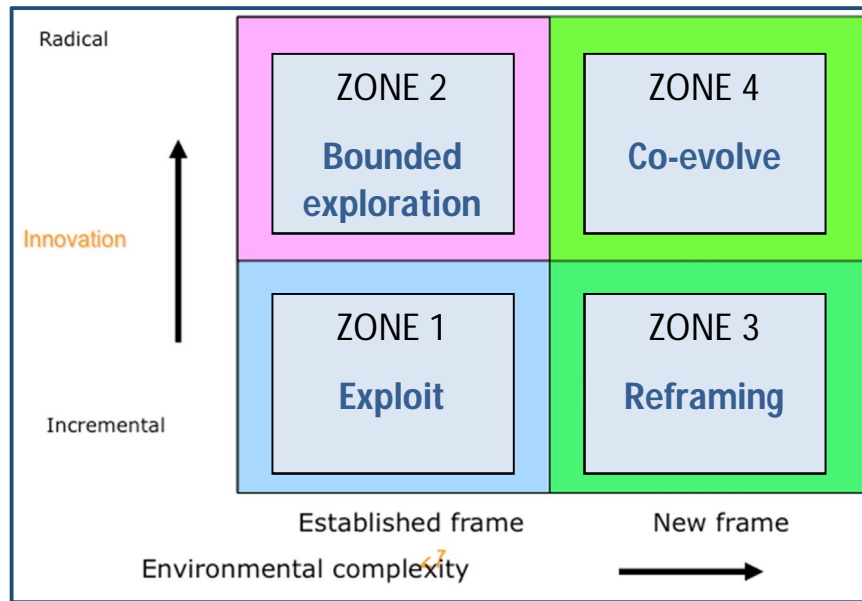
Figure 7: Innovation Matrix

Zone 1 – Exploit

Concrete Canvas Shelter- an incremental improvement of an established product

The Concrete Canvas Shelter (CCS) is a rapidly deployable shelter that comprises two elements: a concrete cloth outer surface bonded to an inflatable plastic inner. Designed to provide instant infrastructure with a minimum of labour, equipment and materials, construction of a 270sqft CCS takes less than an hour using only water and air, requires no specialist training and is ready for use in 24 hours.

The CCS attracted attention in 2006 when it was awarded the Saatchi and Saatchi World Changing Ideas Award, being described as a product which "answers a need that has been thrown into particularly sharp focus this year with the impact of the tsunami and the Pakistan earthquake". Similarly celebrated was the product's potential to substantially outlast conventional plastic tenting in harsh climactic conditions. As recently as 2013, a Concrete Canvas Company Director described the CCS as still in "significant demand from the aid sector".

In spite of these claims, a material that started life as a rapidly deployable humanitarian shelter has evolved to become a mainstream private sector civil engineering solution with only limited application for humanitarians as field hospitals and command and control centres. Indeed, feedback as to their use as a post-disaster shelter has been almost unanimously critical, with a standard unit weighing 1 tonne (raising issues of transportability over even short distances), demanding 1 tonne of water, a scarce commodity in most immediate crises, to activate it, a supply of electricity to inflate it, and costing $15,000 to purchase.

The innovation also presents political issues. Although many refugee camps are acknowledged to exist for many years, humanitarian agencies and governments are unwilling to admit this with the installation of semi-permanent buildings. The semi-permanency of the CCS also arguably fails to promote the return of those affected by disaster to their previous or alternative dwellings, and therefore undermines a core premise of humanitarian shelter: that it should support those affected by crisis to return home or to make better homes in a new location.

These problems are in addition to the very obvious difficulties presented by the product in terms of land and property rights, and habitability.

Cataloguing IFRC Shelter Kits- a change in the way that an established product is delivered

The IFRC Shelter Kit is a collection of tools and fixings combined with two plastic tarpaulin sheets. Like shelter kits provided by other agencies, it is intended to complement the repair of structures as a result of a humanitarian emergency and, although it does not include materials for the frame of a structure, it can complement local materials in the production of various forms of emergency temporary shelter. It can similarly be combined with available materials to build structures such as latrines, fences and rainwater harvesting systems. The inclusion of common tools further enables its use for other critical shelter tasks such as removing rubble, digging drainage ditches and preparing ground and supporting basic livelihood activities such as farming and boat building.

Shelter kits are by no means a new product innovation. The distribution of construction materials and tools has been a common element in emergency shelter relief for many years. However given such packages had only been developed post-disaster prior to the introduction of the IFRC kit, inconsistencies in specification and quality were commonplace and delays in provision were often experienced.

By creating a standardised shelter kit, pre-positioned regionally in significant quantities using defined and tested specifications, IFRC sought to attend to these common problems. Indeed, IFRC has significantly improved the speed of delivery and predictability at the start of shelter responses. In 2008, a total of 50,000 IFRC shelter kits were distributed in Myanmar, Haiti, Nepal and Cuba, to rapidly provide the preferred 'non-tent' shelter relief. The success of the model has since been replicated by DFID and other agencies suggesting the concept has been an incremental procedural improvement to an existing and widely used product.

Zone 2 - Bounded Exploration

T-shelter: an alternative approach to the satisfaction of an established need- but not eradicating long-term deficiencies

In addition to looking to support the principles of the transitional shelter approach, the idea that t-shelters be upgradable, reusable, re-sellable or recyclable (at least one, if not all four) sought to address a number of problems that have traditionally frustrated attempts to effectively support post-disaster transitions to durable housing, including:

- **The perception of reconstruction as only long-term:** The aid community commonly regards shelter as humanitarian and life-saving and durable solutions as developmental (see Box 4).

- **Immediate need for shelter:** Reconstruction can only be legally offered when land rights are established yet this is often required to an extent that exceeds local tradition.

- **Increasing frequency of multi-family dwellings:** Complex and informal urban living arrangements lead to considerably more complicated and time-consuming reconstruction and repair.

- **Lack of aid capacity in shelter and reconstruction:** A lack of practice, learning and expertise has limited programme quality and therefore willingness to undertake further programmes.

- **Piecemeal support to reconstruction:** Reconstruction often happens too fast and with little consultation; this can result in inappropriate housing even perpetuate vulnerabilities.

- **The lack of land or tenancy rights:** The aid community has limited understanding of supporting tenants and the landless with durable housing solutions.

In looking to bridge these long-standing gaps in a new, simple, inexpensive and flexible way, the t-shelter option was rapidly adopted by humanitarian shelter agencies after its introduction in 2005. Indeed, until the widespread acceptance of the t-shelter and transitional shelter concept, the shelter sector had suffered from a dearth of innovation and had failed to imaginatively address its most awkward problems around land rights, agency capacity and the time required for quality reconstruction programming.

In spite of its many positive applications, it has been argued that t-shelters have created additional long-term problems and have yet to be consistently applied with success in urban areas. Among the main issues have been:

- **Generation of slum-scapes** – The transition to permanent housing from a t-shelter often does not happen within the intended period or at all.[67] If communities do not transition, they begin to deteriorate and become permanent slums. This is made all the more likely by several observations: that after t-shelter construction, few human or financial resources remain; poor planning can result in poor quality permanent housing or hinder the transition to permanent homes all together.[68]

- **Decreased political support for permanent solutions** – T-shelters decrease political incentives for governments to assist in reconstruction of both shelter and its supporting infrastructure.[69]

- **A rural approach only** – T-shelters are argued to be a rural concept increasingly implemented in urban environments.[70] Although a key feature of the approach is mobility, the best examples of TSA and t-shelter implementation have been in areas of secured, original plots where mobility is unnecessary. Even these successes are minimal in relation to overall need. TSA is difficult to implement in compact urban areas, particularly, for instance, where t-shelters occupy the only space where reconstruction can occur.[71]

- **Donor-driven, not people centred** – It has been argued that t-shelters are not in the interest of long-term needs but instead suit the budgets, timeframes and marketing needs of NGOs.

---

[67] Burnell and Sanderson (2011).
[68] Lloyd-Jones (2006).
[69] World Bank (2010); Clermont et al. (2011).
[70] Clermont et al. (2011).
[71] Ibid.

- **De-prioritisation of long-term shelter needs -** If short-term provisions like t-shelters are inevitably resulting in poor shelter conditions later on and perpetuating, not mitigating, vulnerabilities, then these emergency relief provisions are hampering long-term recovery and development. Transitional shelter indirectly defers permanent reconstruction, not to mention placing those who have received transitional support at the bottom of the list for more permanent assistance.

- **Additional risks** - Prices of materials and t-shelter production time may increase if local materials and supply networks are strained by the demand during t-shelter construction. If there is not enough experience among program implementers, shelters may be constructed poorly or on unsafe sites without basic services.[72] Should t-shelters be occupied longer than intended, they may no longer meet basic humanitarian standards.

As a result of these concerns, a common over-arching question directed at t-shelters is 'Transition to what?' particularly when, at present, shelter programming appears unable and under-resourced to fulfil the kinds of complementary activities that would support a holistic transitional settlement approach.

Zone 3 - Re-framing

Cordaid/NASSA Resilient Recovery: putting control (and thus risk) in the hands of the end-user

Although community resilience has been on the international humanitarian agenda for some time, it has most often been provided through *assistance to* as opposed to *co-operation with* affected communities. In the Philippines for example, as in many other areas, national government agencies ordinarily issue memoranda to communities on how to implement recovery directives, which subsequently inform the activities of intervening humanitarian NGOs. Following Typhoon Haiyan in 2013, however, and because of flexible financing provided by the Dutch Government, Cordaid and Nassa (Caritas Philippines) were able to trial a co-operative, bottom-up and community-led approach to recovery termed 'resilient recovery'.

The approach acknowledges the capacity of local communities to decide what is needed in order to break the disaster cycle as they themselves experience it. In assisting communities to map hazard impacts and local capacities, bridge the gap between national recovery plans and local realities and establish links between local communities and regional sources of funding and expertise, resilient recovery seeks to fill the resource gaps that prevent community implementation. In producing an actionable community designed recovery plan, it moves the disaster-affected community from the position of *the recipients* of recovery assistance to *the leaders* of recovery activities.

Presented at the UK Shelter Forum in November 2014, the approach is notable for giving rise to solutions which top-down assistance programmes would not have considered (such as providing axes to fishermen so that in the event of a typhoon, they might sink their boats preventing damage to the community and excess harm to their livelihoods). Indeed, the utility of resilient recovery for shelter is obvious given how scale, diversity and idiosyncrasy of need have brought about a more facilitative approach in policy and practice. Requiring new forms of funding and collaboration, as well as a distinct 'hands off' approach from the humanitarian

---

[72] World Bank (2010).

agency, the approach has been described as an important example of the kind of shelter provision that is increasingly required of humanitarian agencies.

Zone 4 - Co-evolve

Cash Transfer Programming: new frameworks and new choices to provide greater freedom of action

Cash transfer programming has been deployed by humanitarian shelter agencies for many years. Throughout much of this time, it has been used by shelter agencies for assistance programmes which have been top-down or 'donor-driven' in their design. However, in the context of the shift away from physical *provision* of shelter to the *facilitation* of shelter solutions proposed by affected communities, cash is increasingly being deployed as an 'owner-driven' mechanism. In durable shelter solutions for instance, cash grants have been used as an alternative to in-kind provision of shelter materials and agency or contractor house builds. Examples of such uses date from the 2004 Indian Ocean Tsunami response and are also found in the Gujarat and Pakistan earthquakes.[73]

More recently, discussions around owner-driven cash programming have revolved around its coordination and financing, as well as the roles of government, technology and private sector actors. However with many of these issues yet to be firmly established within a standard operating framework, cash programming for shelter, as in all other clusters of the humanitarian system, represents a radical innovation that demands new structures of operation, partnership and delivery. As these structures are explored by humanitarian agencies, learning around cash will 'co-evolve', perhaps to the extent that a new dominant design will emerge for shelter.

---

[73] Harvey (2007).

Section 6: Findings

This section presents the findings of this report within the 'R's framework as set out by the wider research project to which this case study belongs. This framework is also described in Section 1. It additionally presents the innovation systems model developed in the course of the wider *Humanitarian Innovation Ecosystem* project analysis. These diagrams summarise the case study findings and point to the inhibitors and enablers of innovation within the shelter sector.

Perhaps counter to the general findings of the overall study (that innovation is more likely to succeed if a *step-change* is made), experience in the shelter sector over the past forty years points to *incremental* change as the most likely means to improve performance in the sector.

Routines

The domination of a few agencies with their restricted mandates on the international level, the partial inclusion of national agencies, and a relatively constant membership of practitioners means that innovation within the system tends to be incremental and confined to known approaches. The limited engagement of associated disciplines and skills from the 'outer circle' of the ecosystem - including 'inner circle' actors who have set up as commercial or social enterprises - means that outer circle innovations tend to be product-focused and are often of limited applicability.

Embracing the full implications of shelter as a process, in both natural and man-made disasters, is dependent, therefore upon the political will of ***national and host governments*** at national, regional and local levels*.*

The political commitment of **donors and development banks** complements and reinforces the commitment of governments. Flinn concludes that the international aid community is incapable of responding to total need. The donor community is bound by sequential (linear) funding instruments, impeding joined up programming for a settlement solution. It falls therefore to national governments to corral financial institutions and friendly countries to harness the resources needed for a successful reconstruction[74].

With the increased scale of disasters comes a concomitant increase in scale of the actors. With increased size comes reduced agility, as well as an increased reluctance to venture beyond the familiar. This risk aversion is further compounded by the ethical considerations involved in trialling new approaches on distressed populations (see below in Resources and Rules sections). This caution is common to all sectors, and in shelter tends to imply safety in the familiar rather than in the new or innovative.

In the final analysis, resources and commitment required of the aid community to support post-disaster communities to either return to 'normal' or, if possible, enhance their resilience, is beyond its scope and political attention span. Indeed, it depends upon many socio-economic and cultural factors that cannot be addressed solely within the shelter community alone. In addition, while the delivery of an integrated approach to shelter assistance may have already proven

---

74 As noted earlier, diaspora remittances following a disaster are now thought to outstrip total international assistance efforts. This is highly likely given that only 10- 20% of an affected population has access to government or other assistance as noted by Flinn (2013). This is a serious challenge to efforts to ensure that shelter is built back both better and safer.

difficult in rural locations, it has been hugely compounded by the increasingly urban nature of disasters.

Resources

Resource allocation for immediate response is largely predetermined to mandate-holders and traditional actors at scale. Very little, if any, is assigned explicitly to innovation. Individual agency mandates and priorities militate toward infrastructure projects that satisfy donor agreements and provide 'proof of effort' to their supporters. An ethical resistance to experimentation, coupled with a weak human resource pool skilled to address medium-to-long term problems and a funding system that reinforces this weakness means that room for innovation is limited. Indeed, in institutional donor terms it is very rare, meaning that members of the ecosystem have resorted to their own funds or entered into specific partnerships with the private sector or their foundations. [75]

> **BOX 7**
>
> **Institutional Resources for Innovation**
>
> The IFRC has calculated that investment of its own funds in product Research and Development is about 1% of total income, and that in process about 5%. Project respondents feel this figure is similar for the UNHCR. Across the humanitarian community, the figure is estimated at up to 0.5% for product and 2-3% for process. These figures do not reflect leverage by the private sector on product improvement (eg tents) nor do they include developments in 'shared services' such as cash approaches, materials tracking systems and the like.

The skills gap exacerbated by 'surge' funding habits is partially addressed through a growing number of university courses in disaster management with units in shelter and settlements , but the retention of capacity at agency level is very limited, with the human resource skills still being largely skewed to rural rather than urban contexts, and, as noted earlier, with the knowledge base sitting with independent consultants. Which means that, intentional or not, ethical or not, the aid community continues to experiment on disaster-hit communities, by dint of un-retained institutional learning and repetition of errors made at the international level, and a failure to harness capacity and learning at national level.

Roles and relationships

There are many obvious roles that could be adopted by the 'outer circle' to enhance the practice and learning of the shelter community. With the establishment of the Shelter Centre and its offshoots (Shelter Meeting, Shelter Forums), the professionalization of the shelter sector probably started later than in other cluster skillsets, possibly because of the 'surge' nature of shelter demand. The demise of the Shelter Centre has seen an expansion of the function of the Shelter Cluster beyond its core coordination mandate into innovation, technical development

---

75 With increased size and scale comes, with the exception of a few such as MSF, an increased dependence on institutional funding, tied to quite precise budget lines, project objectives and expected outcomes. This in turn leads to unrestricted funds being disbursed disproportionately on budget gap-filling in tied grants and on organisational recurrent costs, rather than the innovative approaches to which these funds are ideally suited.

and capacity mapping. This has gone some way to addressing the known gaps in the sector but, as noted above, has a very limited membership and available resources.

The growing interest amongst **professional groups** such as RIBA[76] and major **private sector** actors such as Arup International and SwIssRe[77] in both response and resilience debates opens the possibility for some of these gaps to be plugged. It also offers potential to reinforce learning in the sector in tandem with academia. [78]

Academia can fulfil the function of 'critical friend' in the sector. By its own admission, academia only partly acquits itself of its important learning function (especially apposite given the failure in the past by practitioners to regularly evaluate projects), and some observers feel that it is overly occupied with its own research interests. The gradual development of university courses in disaster management with units in shelter and settlements goes some way to addressing this gap. It furthermore provides the basis for a career pathway for new entrants and existing practitioners in the market.[79]

Partnerships between shelter cluster members and **commercial manufacturers** (in particular for tents, plastic sheeting and shelter kits) have the potential to lead the sector in new and interesting directions. Partnerships with **emerging social enterprises** driven by former shelter practitioners offer similar potential. However at present, these partnerships tend to be product-focused, both for commercial and profile reasons.

The particular case of the Refugee Housing Unit, a partnership between a Swedish engineering and design company, the IKEA Foundation and UNHCR is interesting for its tripartite approach, not least for the fact that, in Ethiopia for example, the Foundation has funded a number of different activities and trialled the RFU shelter model with different degrees of success. Given the reputational risk attached to such a venture, an active learning approach to the project should ensure that it arrives, by steps, at the best outcome for beneficiaries and alternative partnership models for innovation in the sector.

Notable not so much by their absence, but more by their distance from the central debate, are **national organisations** and the **communities** that they serve. Although each can be both victims and disaster response managers, communities are the first responders, and often commence relief and recovery before the local or national government and voluntary organisations who often best understand community priorities.[80] These groups are an important source of innovation themselves,[81] but they are often divorced from the global debate partly due to lack of capacity and partly because the debate seems too remote from their reality.[82] A notable exception to this common trend is presented in the **Cordaid/NASSA**

---

76 RIBA is currently looking to make a meaningful contribution to addressing the problems raised by urbanisation and the built environment.

77 SwIss Re supports, among other initiatives, the Rockefeller Foundation/Clinton Global Initiative 100 Resilient Cities challenge and, as noted earlier, underwrites micro-insurance schemes in Haiti and Bangladesh.

78 A number of leaders in innovation thinking interviewed for this project emphasised the need to "celebrate" failure, since it is often an initial failure that engenders a successful outcome. Or, out another way, the failure to *admit* failure is learning denied and possibly an irritant to known ills suffered.

79 For example: NTNU Trondheim: MSc Building Resilience to Urban Disasters; University of Copenhagen: MSc in Disaster Management; TU Eindhoven: Department of Architecture; Oxford Brookes University: MA Development and Emergency Practice.

80 See, for example, Ramalingam et al. (2013).

81 "*The 950 million inhabitants of informal settlements - they are the innovators*". Interviewee comment, October 2014.

82 Partner opinion expressed in course of author's own research (2013).

'Resilient Recovery' example presented in this analysis.[83] In the main however, the engagement of those directly affected by crises is reflected in the involvement of Diaspora groups which, with rapid advances in communications, are an increasingly important source of funds for auto-recovery (with implications for the maxims of building back better or safer).[84]

The continued support of the leading **institutional humanitarian donors** (DFID, ECHO [the major donor in 2014-15], USAID and the Swiss Development Cooperation [SDC]) to the Global Shelter Cluster is integral to its future effectiveness. It is salutary, however, that DFID has two shelter experts in its permanent employ, ECHO none, and USAID only one. DFID's five-year support to The Shelter Centre was instrumental in the increased rationalisation of activities in the shelter sector. The discontinuation of DFID's support and the failure of other actors to fill the breach has seen a partial assumption of the Shelter Centre role by the GSC, but with insufficient buy-in by members to allow a viable alternative to emerge. The Shelter Centre is now effectively a virtual knowledge store and its productive contribution to innovation is severely compromised.

Finally, while the major institutional donors are active in the shelter debate and serve as members of the GSC, their funding mechanisms tend to favour product over process (DFID has been a notable exception), and they are generally seen as shying away from a long-term commitment. This is perhaps unsurprising given Flinn's comment cited above, and reinforced by IOM, which points out that "*between 2010 and 2013, following three major flood seasons in southern Pakistan,* [in which more than 3 million homes were destroyed] *the international aid community had erected only 170,000 one room shelters to replace them*".[85]

Rules

The demand for accountability and evidence has a clear impact on risk-taking behaviour. Moreover, a risk taken and a failure encountered are bad for publicity, and thus for funding. A failure to highlight a failure is a disservice to the community, and an impediment to learning. However, the rules as they currently stand allow the transfer of experience from one location to another that might [not] be appropriate for that location.[86]

The rules and mandates of the cluster system can both enhance and impede service to the beneficiary. Shelter can fall under three cluster responsibilities: Camp Coordination and Camp Management, Shelter and Early Recovery. The Protection Cluster can be a fourth component advocating for the rights of renters, the evicted and the resettled. This fragmentation of responsibilities can lead to poor strategy development and implementation and can, arguably, produce multiple answers to the same question.

Risk awareness and aversion, the division of responsibilities between multiple partners and limited strategic cohesion between them prompts divergent approaches and can dull the edge of effective innovation and change, itself militating towards safety in the familiar.

---

83 See page 26.
84 Anecdotal evidence from Hurricane Ivan, Jamaica 2004, relates that government relief officials expressed dismay and frustration that their immediate damage assessments were rendered obsolete due to the rapid reinstatement of the mobile phone system that allowed Western Union to transfer diaspora remittances for rebuilding long before governments funds were mobilised. Interviewee comment, November 201.
85 IOM (2014).
86 "*We were solving the [transitional shelter] problems of Aceh in Port au Prince*", interviewee comment, October 2014.

Results

While shelter practitioners see success ultimately in terms of the re-establishment of fully functional settlements (a process outcome), their supporters, which, includes the tax-paying public, judges the sector much more in terms of visible products (temporary and permanent dwellings). Evidence, if gathered only in a dilatory manner, points to the need for a holistic and long-term nature of any reconstruction effort, with the softer, largely unmeasurable, elements of beneficiary satisfaction and wellbeing also included. This suggests the need for sustained evidence-gathering through research and practice in way that ensures a satisfactory outcome. At present however, shelter learning products produced by the current humanitarian architecture, as well as the programmes that the architecture tends to support, limit the possibilities for such forms of learning.

A successful 'rural' response implies affected communities settled in their place of origin, on their plot of origin, with improved accommodation and better access to basic services. Urban responses, the increasing concern of the sector, are 'spatial' in nature[87] and demand a breaking down of silos within the cluster system, within the donor community and individual donor infrastructures, and within national governments, to allow the *process* to take precedence over the *object*.

This increasingly complex set of relationships should suggest changes in the way that cluster response strategies are developed, and the architecture of donor funding is designed.

Restrictions

The restrictions on innovation in the shelter sector have been well rehearsed above. While there is a genuine desire within the community/ies of practice to see significant advances, there is very little scope for significant *change* on the 'object' side of the equation, although improvements in design of an appropriate product will almost certainly benefit the affected population; and there are only so many iterations in the design of transitional shelters or shelter kits. The restrictions are therefore heavily weighted to the process side, with a number of manifestations:

1) Ill-defined leadership among a relatively restricted group of principle actors; thus

2) A leadership that varies according to context, especially at cluster level, with a number of different, but largely complementary, mandates

3) A marked gap between the 'top 30' and the 300 or more participants at the regional and national levels; compounded by

4) The ad hoc participation of implementing agencies, sometimes with a very limited track record in the shelter sector; which encourages

---

87 Limited land available, complex land and property tenure conditions, and calling simultaneously upon the expertise of e.g. WASH, Health, livelihoods, protection and urban planning departments at national and city council levels.

5) A failure to join the dots in assessment, evaluation and analysis both of the physical problem and of the written outputs of those managing the response[88];

6) A poor career structure that compounds both the short-termism and limited learning, and leaves the expertise in the hands of a restricted pool of consultants; thus

7) Only limited success in learning and communication of past successes and failures, with the (sometimes false) assumption that solutions are transferable between contexts.

8) A marked gap in the skills needed for a sustainable shelter/settlement solution between the "first responders" of an international relief effort and the participants in Post-Disaster Needs Assessments that define the longer-term solution.

9) The partial engagement of academia and the private sector.

10) Funding streams that encourage short-term thinking for a long-term problem and militate against the retention of expertise (and thus institutional knowledge) within an organisation

---

88 Crawford and Chaytor (2013).
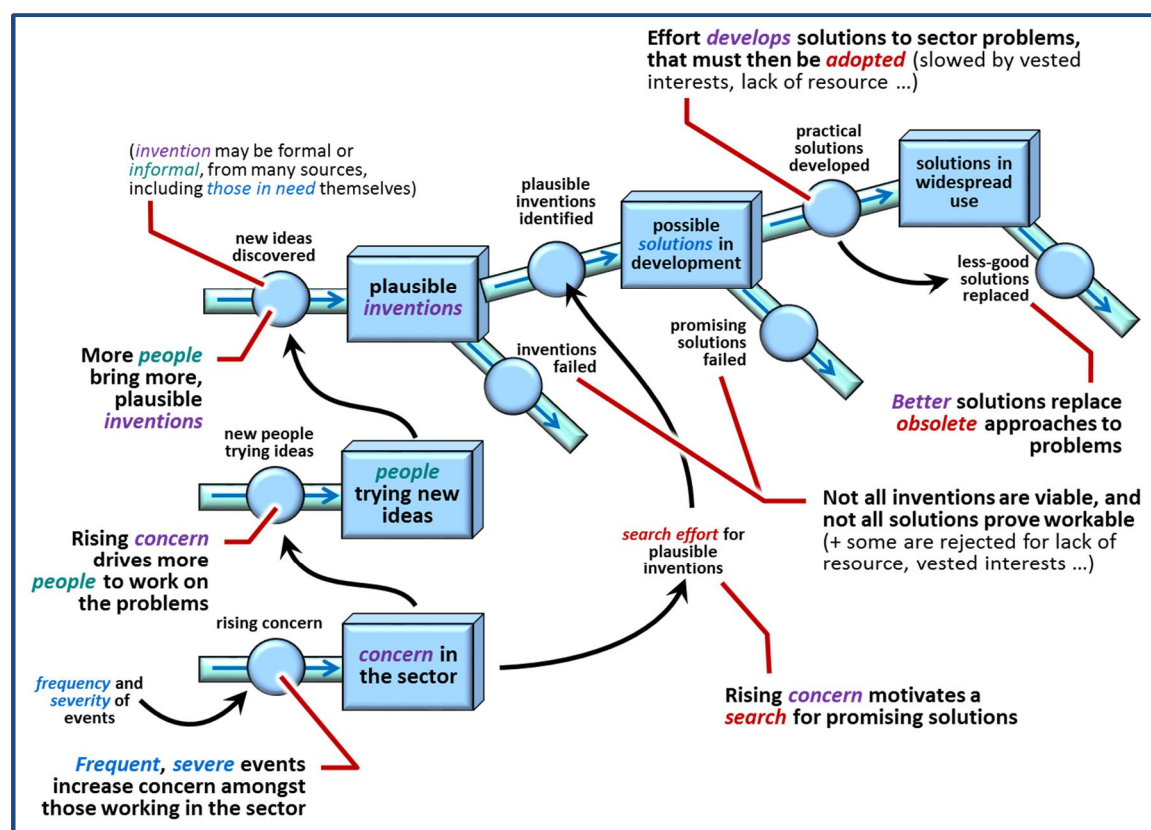
Shelter Innovation Ecosystem: Systems Models

Figure 4: Humanitarian Innovation Ecosystem project - Systems Model

The innovation systems model (**Figure 4**) developed in support of the wider HIE project to which this study belongs defines innovation as passing through several phases:

- **Concern** in the sector: as the result of, e.g., frequent severe events

- **People trying new ideas**: as concern drives more people to look to address particular problems

- **Plausible inventions**: as more people bring plausible formal or informal inventions from a variety of sources

- **Possible solutions in development**: as plausible solutions are identified and effort is made to develop them

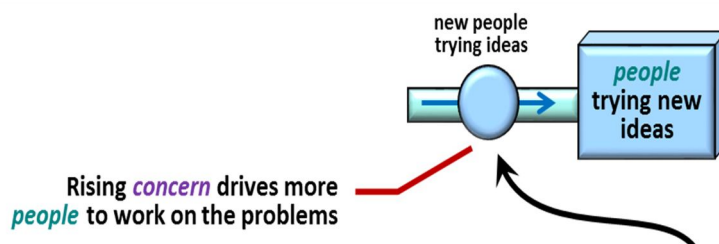- **Solutions in widespread use**: as practical solutions are made and widely propagated.

The following presents the main characteristics of the shelter innovation ecosystem at each of these stages. It also identifies factors which enable or inhibit the continuation of the innovation process along the system model continuum.

Concern

rising concern

concern in the sector

frequency and *severity* of events
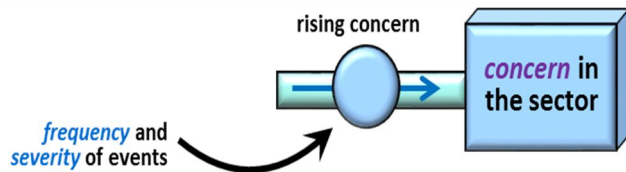
Concern is driven by conflict between process and product, the increasing frequency and scale of disasters, and the shift from 'simple' rural to 'complex' urban environments. The urban shift becomes a 'spatial' issue which requires a multi-sector (cluster) and long-term approach. As such, 'Shelter' as a settlement problem requires a *contiguum* rather than *continuum* approach to programming and funding but there is no dominant player and the sector is self-regulated through agreed standards and protocols. In addition, the long-term commitment required deters donors and, with budgets in the $billions the sector is demand driven, bottom heavy with practitioners but dominated by the GSC and suffers massive capacity constraints.

Trying new ideas

new people trying ideas

people trying new ideas

Rising *concern* drives more *people* to work on the problems

As presently conceived, the shelter sector considers new ideas as more about understanding and improving the process (incremental change) than changing and delivering the object (radical innovation).

| Enablers of new ideas	Inhibitors of new ideas
• Communities of practice explore diverse programming approaches • Transition towards facilitation leading to broader engagement with a variety of stakeholders.	• External perception that, if you "can't see and touch it" then it is not an innovation. • Sector risk averse: ethics does not allow experimentation on vulnerable populations and failure is not permitted, impeding learning; thus • New ideas often unrealistic and unaffordable at scale and: • New ideas often 'lost in translation'- what is appropriate in one place not necessarily applicable elsewhere (e.g. see T-shelter case study).[89]

---

[89] T-shelter case study, p.24.

	• No formalized process for best practice.

Plausible innovations
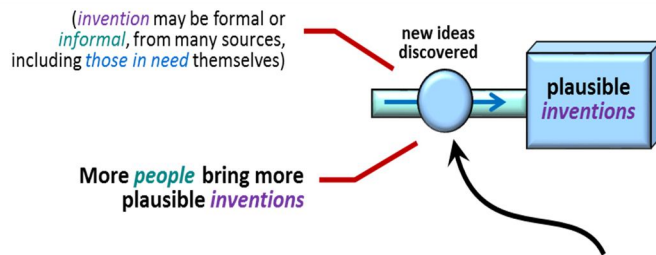

| Enablers of plausible innovations	Inhibitors of plausible innovations
• Vernacular responses are diverse, context specific and offer potential for learning/developing new approaches and products –private sector, academia and agencies. • While the sector has a long tradition of affiliation with the private sector, this has largely been on the product side. There is potential to support and enhance evidence and learning • Open floor for debate among practitioners around new innovations.	• Innovations become less plausible when put in context. Many enter the market, few gain traction due to scale, affordability, transferability. • Private sector is only partially engaged: "you want us, but you don't know what you want of us". • The same applies to academia: a missed chance to accompany, measure, evaluate and learn. • Inventions are mostly products; standards and the rigour of the market seem to be (intentionally?) ignored in development even by those with operational experience. • Standards and user uptake (implementing agency and affected population) are what ensure that the inappropriate fix does not breach the system.

Possible solutions in development
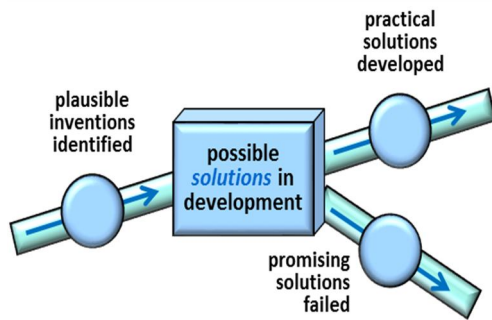
- New developments are not necessarily market-led, and are mostly tent-focused.[90]
- Developed solutions are not necessarily transferable between within contexts.
- New products are still largely invented for a rural environment; but
- Process innovation looks at the change in the environment- e.g. formal or informal money transfer modalities; facilitation vs provision (user-led approaches); the built environment and space; tenure/sheltering/settlement options.

Solutions in widespread use
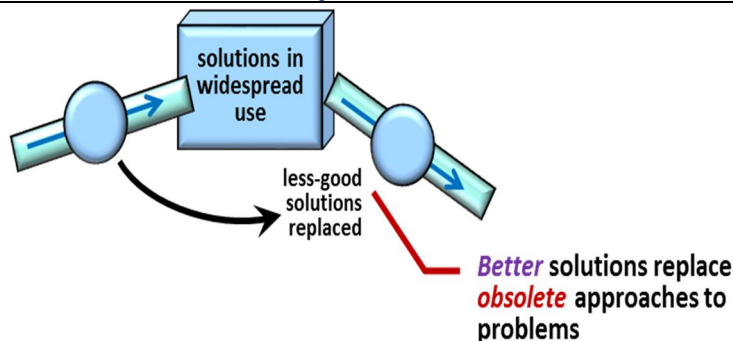
- Adoption is rapid if there is institutional will and user uptake e.g.
  - 80% of IFRC response is now kits
  - Transitional Shelter (TS) seen as a major leap and appropriate fit
- Solution can have unintended outcomes despite the rigour of standards (e.g. Haiti 'ghettos' created by the TS solution). Maverick operators are always a risk in a big disaster
- Success depends on functioning and vibrant communities of practice reaching across sectors and funding streams (e.g. Cash-based responses; UNDP/WB Recovery Framework); however,
- Placing inadequate emphasis on learning/in-house technical capacity runs the risk that the wheel will be invented again.
- The scale of need, and the emphasis on immediate needs over long-term reconstruction (a demand-led environment) has favoured a product focus.

---

[90] Interviewee comment "*a tent is an admission of failure*" reflects the common perception that the long-term challenges of the sheltering process are underappreciated in the innovation process.

Section 7: Conclusion

It can be asserted that the shelter sector is addressing the six general HERR recommendations by and large both formally and semi-formally, and that, in attempting to formalise the ecosystem, innovation is a key issue for the sector.

The sector and its innovation ecosystem have historically struggled with the tension between ensuring a sustainable *process* across the post-disaster intervention spectrum and the desire to produce and improve on the shelter *objects* which ensure the visibility of the sector and the ecosystem.

This dilemma persists despite the acknowledged primacy of process over object. Indeed the increasingly *urban nature* of humanitarian crises, demanding a multi-sector and *spatial* approach to the response, reinforces the process emphasis. This should encourage appropriate *process* innovations, in particular a move towards facilitation rather than action. The funding architecture, on the other hand encourages 'linear' project design, a short-term humanitarian response and an *object* outcome.

As a consequence, the innovation ecosystem is under-developed with an ill-defined strategic approach, but is by no means non-functioning.

While the constituent members of the ecosystem acknowledge the problem, the demand-led nature of shelter response impacts on poor staff retention, atrophied institutional learning and limited opportunities for the development of a cadre of shelter professionals. This results in a degree of amateurism and opportunism not seen (or permitted) in other technical sectors of the cluster system. These factors, when taken together, militate against a sustained and appropriate innovation effort.

The sector and the innovation ecosystem have attempted, with limited success, to bring to scale the expertise to be found at national level. It has also made significant efforts to mobilise funds for innovation from within, again with limited success.

There is, therefore, little to encourage the joining up of: the humanitarian aid community, best equipped for rapid response; the private sector, with access to very different financial and human resources for the desired long-term shelter outcome; and national and local governments who regulate the process and, in turn, have access to their own sources of long-term financing for reconstruction. And there is little to encourage regulated auto-recovery while publicly-available fund flows lag behind those made easily and quickly accessible through diaspora remittances.

With all this in mind, and with particular reference to an urbanising world, the attention of the shelter sector and its innovation ecosystem should turn increasingly to *facilitation* of the:

- functions of national partners and national and local governments in the shelter response and transition process;
- existing capacity of those affected by disaster, in particular through the mobilisation of affordable financial instruments and products for auto-reconstruction;

- participation of the private sector, being clear as to both the limitations of the humanitarian sector and what it wants of the for-profit community;

- resources for learning, to ensure both that there is a continual service improvement to affected populations and that further innovation responds to acknowledged rather than perceived needs.

Section 8: Recommendations

To the humanitarian practitioner community

1) Ensure investment in learning internally and with the assistance of academia. It must make a concerted effort to effectively harness the energies and inventiveness of the academic community to ensure enhanced professionalism and improved and systematic learning.

2) Encourage academia to become a *critical friend* to, and within, the sector and the innovation ecosystem. Academia needs to develop its value-added by further supporting education on humanitarian needs in engineering, urban planning and architectural studies. It must heed the opinions of the practitioners and direct research at the felt needs of the sector and affected communities.

3) Be clearer as to where innovation is needed, and what form that should take. The community needs to be more assertive in expressing its priorities, and more directive in the innovations it would like to see in both the *process* and the *object* aspects of shelter and sheltering.

4) Demand greater professionalism, both of the sector as a whole and of the constituent members of the innovation ecosystem- reduce the scope for non-specialists to enter the market.

5) Invest in skills development that permits a more holistic approach to shelter and sheltering, allowing a smoother transition to the reconstruction process.

6) Foster closer relationships between practitioners and researchers, ensuring both the process and the object develops in the direction envisaged.

7) Invest in the skills required for the transition from implementing to facilitating; actively support the development of national partner capacity to this end.

8) Support greater engagement of disaster affected communities in global and regional fora.

9) In the transition to facilitation, ensure that critical evaluations of shelter projects support this new approach by presenting learning from both success and failure.

10) Ensure a proportion of agency unrestricted funding is apportioned to investment in new approaches/products. Where this is not possible, lobby effectively for loosely-earmarked donor contributions for the same purpose.

To the private sector

1) Encourage partnership in those skills areas where it has a clear comparative advantage (in particular logistics and large-scale permanent shelter project management).

2) Investigate partnership arrangements with both for- and not-for-profit organisations, national and international, for the greater professionalism of the shelter sector.

3) In association with the humanitarian community, continue to develop affordable insurance products for post-disaster reconstruction.[91] [92]

To the donor community

1) Develop a less *linear* approach to shelter funding from humanitarian crisis to final sheltering solution, appropriate to an urbanising world, and ensuring humanitarian funding, that of development banks and sources available to national governments work in collaboration to ensure rapid reconstruction and settlement.

2) Place greater emphasis on the development of innovations which respond to the need for rapid, permanent reconstruction and resettlement.

3) Develop multi-year funding frameworks for innovation, loosely tied to mutually-agreed desired outcomes, and not necessarily taking the form of a *challenge fund*.

4) Ensure that a formal environment for the discussion of shelter issues of humanitarian concern, the innovative responses they might prompt and the development of such responses is maintained.

5) Establishment of land property rights is a pre-condition to programme delivery and the space for innovation. Work with governments and landowners of disaster-affected and disaster prone countries to circumvent or simplify land ownership issues for rapid reconstruction.

6) Provide incentives for a more productive relationship between the humanitarian and private sectors in shelter response and reconstruction (to include enhanced frameworks for affordable insurance provision).

---

91 Kazuko (2013).
92 Swiss Re (2014).

Bibliography

Bessant, J.; Ramalingam, B.; Rush, H.; Marshall, N.; Hoffman, K.; and Gray, B. (2014) Innovation Management, Innovation Ecosystems and Humanitarian Innovation, University of Brighton [CENTRIM], 51 pp.

Burnell, J. and Sanderson, D. (2011). Whose Reality Counts?: Shelter After Disaster. *Environmental Hazards*: 10(3-4), pp.189-192.

Haas, T.C.A. de Cox, M.G.D.M. and Gijsbers, R. (2013). Why (shelter) innovation in the humanitarian sector is scarce: integrate building resilience in the emergency and recovery response. In M. Hall, D. Amaratunga, R Haigh, B Ingirige, K Keraminiyage, U Kulatunga and C Pathirage (Eds.), Conference Paper: *International Conference on Building Resilience 2013 : individual, institutional and societal coping strategies to address the challenges associated with disaster risk.* (*2013, pp. 428-1-428-15*). Salford, UK: University of Salford.

Clermont, C., Sanderson, D., Sharma, A. and Spraos, H. (2011). *Urban disasters – lessons from Haiti: study of member agencies' responses to the earthquake in Port au Prince*, Haiti, January 2010. Disasters Emergency Committee (DEC).

Crawford, C.A. (2010). *Urban shelter guidelines: assistance in urban areas to populations affected by humanitarian crises.* Norwegian Refugee Council and Shelter Centre.

Crawford, C. and Chaytor, S. (2013). *Data, Decision-making and Disasters: The Effective Use of Engineering Research and Consultancy in Disaster Response and Recovery.* UCL Briefing Paper, September 2013: London: UCL.

Crowley, F. (2014). *Report on the first six months of the emergency response* (November 2013 – April 2014) – DEC Philippines Appeal.

Davis, I. (1978). *Shelter After Disaster.* Oxford: Oxford Polytechnic Press.

Davis, I. (2011). What Have We Learned from 40 Years' Experience of Disaster Shelter? *Environmental Hazards*: 10(3-4), pp. 193-212.

DFID (2011). *Humanitarian Emergency Response Review (HERR).* Department for International Development (DFID), 28 March 2011.

Fan, L. (2013). *Disaster as Opportunity? Building Back Better in Aceh, Myanmar and Haiti*, Humanitarian Policy Group. London: Overseas Development Institute.

Flinn, B. (2013). Changing Approaches to Post-Disaster Shelter, *Humanitarian Exchange Magazine*, Issue 58. Humanitarian Policy Group. London: Overseas Development Institute.

FONDEN (Mexico's National Disaster Fund) (2013). *An evolving inter-institutional fund for post-disaster expenditures*, Global Facility for Disaster Risk Reduction. [Online] available: https://www.gfdrr.org/sites/gfdrr.org/files/documents/Mexico_FONDEN_final_GFDRR.pdf [accessed 19 January 2015].

Harvey, P. (2007) *Cash-based responses in emergencies.* Humanitarian Policy Group. London: Overseas Development Institute.

ICAI (Independent Commission for Aid Impact). (2014). *Rapid Review of DFID's Humanitarian Response to Typhoon Haiyan in the Philippines.* ICAI: London.

IFRC (2010) *Review of the International Federation's shelter cluster commitment.* Geneva: IFRC.

IFRC (2014) How we do shelter, International Federation of the Red Cross [online] available: http://www.ifrc.org/en/what-we-do/disaster-management/responding/services-for-the-disaster-affected/shelter-and-settlement/how-we-do-shelter/ [accessed 18 September 2014].

InterAction and USAID (2006) *Gaining a Sense of the Sector: A Participatory Workshop on Shelter and Settlements Activities*. Workshop Report, 22nd September, Washington DC.

IOM (2014) *Improved Shelters for Responding to floods in Pakistan. Phase 1: Study to develop a research methodology*. The Hague: International Organisation for Migration.

Lewis, James: *Continuum or Contiguum? Development for Survival and Vulnerability Reduction. Fifth ESA Conference 2001: Helsinki Session VI: Disaster and Development: A vital connection*; [Online] Available: http://www.dcscrn.org/cms/uploads/esa2001/lewies%20-%20continuum%20or%20contiguum.pdf ; accessed 13 April 2015

Lloyd-Jones, T. (2006). *Mind the gap! Post-disaster reconstruction and the transition from humanitarian relief*. London: Max Lock Centre, University of Westminster.

Kazuko, I. (2013) Disaster Losses and Economic Consequences towards a Comprehensive Risk Financing Strategy. In *First Arab Conference on Disaster Risk Reduction*. Aqaba, Jordan, March 2013. [Online] available: www.preventionweb.net/files/31093_kazuko.ppt [accessed: 12 November 2014]

MercyCorps (2014) *Microinsurance Catastrophe Risk Organization (MiCRO) created to help protect Haiti's micro entrepreneurs*. [Online] available: http://www.mercycorps.org.uk/press-room/releases/microinsurance-catastrophe-risk-organization-micro-created-help-protect-haitis [accessed 19 January 2015].

Oxfam America (2011) *Horn of Africa Transfer for Adaptation: HARITA Quarterly report*, October 2011 - December 2011.

Ramalingam, B., Gray, B. and Cerruti, G. (2013) *Missed Opportunities: The case for strengthening national and local partnership-based humanitarian responses*. London: Christian Aid.

Ramalingam, B., Rush, H., Bessant, J., Marshall, N., Gray, B., Hoffman, K., Bayley, S., Gray, I., and Warren, K. (2015 forthcoming). *Strengthening the Humanitarian Innovation Ecosystem*, University of Brighton, CENTRIM.

Saunders, G. (2004) Dilemmas and Challenges for the Shelter Sector: Lessons Learned from the Sphere Revision Process, *Disasters*: 28(2), pp. 160-175.

Shelter Project (2005) *Transitional Settlement, Displaced Populations*. Cambridge: University of Cambridge.

Sphere Project (2011), *Humanitarian Charter and Minimum Standards in Humanitarian Response*.

Swiss Re Foundation (2013) *Annual Report*.

Swiss Re (2014) *Bangladesh flood victims benefit from first index insurance payout*. [Online] available: http://www.swissre.com/global_partnerships/Bangladesh_flood_victims_benefit_from_first_index_insurance_payout.html [accessed 18 November 2014].

UNDRO (1982) *Shelter after Disaster*. New York: Office of the United Nations Disaster Relief Co-ordinator.

UNHCR (2014) *Global Strategy for Settlement and Shelter 2014-2018*. Geneva: UNHCR.

UN OCHA (2006) *Exploring Key Changes and Developments in Post-Disaster Settlement, Shelter and Housing, 1982-2006.* Geneva: United Nations Office for the Coordination of Humanitarian Affairs.

World Bank (2010). *Safer homes, stronger communities: a handbook for reconstructing after natural disasters.* New York: The International Bank for Reconstruction and Development and the World Bank.

World Bank (2011) *Microinsurance Catastrophe Risk Organisation (MiCRO - Haiti).* [Online] available: http://www.ifc.org/wps/wcm/connect/industry_ext_content/ifc_external_corporate_site/industries/financial+markets/retail+finance/insurance/micro?presentationtemplate=ifc_ext_design/AlternatePresentationTemplate [accessed 7 January 2015].