What conversations are needed to plan the future?
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Chapter 9

Leading by example
Looking to the future for the shelter and settlements sector

Jake Zarins
Associate Director, Disaster Risk Reduction and Response, Habitat for Humanity International

The humanitarian shelter and settlements sector is by its very nature often driven by reactive tendencies, and is not always good at dealing with root cause problems such as poverty, lawlessness or weak regulatory systems. Despite this, there has been significant change over the past two decades, as organizations attempt not only to assist as many people as possible, but also to develop a broader definition of 'quality' in the support they provide.[1] These quality-driven attempts at improving shelter delivery often evolve as specific responses to particular issues such as gender, accountability or the use of cash. Approaches that incorporate these considerations into sectoral responses have gained prominence and favour with donors, resulting in an ever-diversifying range of essential skills and thinking among shelter practitioners.

Among the proliferation and prioritization of buzzwords that have led to much-needed sectoral advancement, some – such as environmental mainstreaming – have failed to make significant progress. In particular, limited consideration has been given to some much bigger questions of how the world may look in the near future, what the consequences might be for our ways of working, or what the sector should or could be doing about these. Given increasing needs, and constant financial limitations, the battle between thinking ahead and focusing on the quality and quantity of support given to affected populations is only likely to get harder over the next 20 years, if various trends continue along their current trajectories. These trends are global, complex and for the most part out of the hands of the sector, but if they are not given due recognition and focus by the entire humanitarian community – and by shelter and settlement agencies from their particular perspective – then we may miss the opportunity to identify solutions or mitigations ahead of time. This is where thinking and investment are required, so that the sector not only responds to what is confronting it now, but leads by example and prepares and adapts to be able to better deal with the likely effects of these trends in the future.

Population growth and urbanization

The world's population is continuing to increase, and is projected to grow from its current estimated 7.6 billion to reach 9.8 billion in 2050, and 11.2 billion by 2100.[2] A significant proportion of this growth will occur in low- and middle-income countries, which are often at higher risk of disasters and of suffering the anticipated effects of climate change. It is highly likely that such significant increases in population, when combined with the trends discussed in this chapter, will equate to greater vulnerability, with larger numbers of people living in poor conditions.

Most population growth is predicted to take place in cities, with 92 per cent of population growth over the next 20 years occurring in urban areas of Africa and Asia. This is equivalent to a city the size of Cape Town, Geneva, Dar Es Salam or San Francisco emerging every two weeks over that period.[3]

Humanitarian shelter providers already struggle to ensure assistance reaches those who need it most. Urban growth will further challenge a system still largely geared to working in dispersed rural settings. What meaningful role the shelter and settlement sector can play in a large-scale urban crisis remains to be seen. (See Chapter 6 for a further discussion on this.)

Competition for resources, and environmental degradation

Demands for resources inevitably increase with both population and economic growth.[4] Developmental and global growth measurements generally correlate closely to increased consumption, with very little connection to the sustainability of these increases in resource use and demand.

Humanity ultimately derives most of what it consumes from the natural world. But global consumption has been growing at a rate far beyond the ability of environmental and geological mechanisms to cope, regulate or replace. Data from the Global Footprint Network shows that humanity currently uses the equivalent of 1.7 planet Earths to provide the renewable resources we use and absorb our waste.[5] This means that it now takes the Earth one year and six months to regenerate what we use in a year.[6]

As well as limiting economic development, competition for basic resources such as water may fuel future conflicts.[7] The global demand for water has been increasing by about 1 per cent per year, while at the same time, the global water cycle is intensifying and altering due to climate change. Other global changes (such as urbanization, deforestation, intensification of agriculture) add to this phenomenon. Increased demand and the repercussions of these transformations could result in water shortages for 5 billion people by 2050.[8]

The construction of housing and infrastructure is a large consumer of materials. A significant volume of the resources required for construction is sourced from the environment, and in many instances the sources used by the extractive industries that supply these materials are struggling to meet demand. Construction-quality tropical hardwoods are becoming increasingly rare and expensive, with many species now commercially extinct.[9] Somewhat surprisingly, even basic commodities such as sand are becoming increasingly hard to source. Sand is the most widely consumed natural resource on the planet after fresh water, with annual global consumption estimated at 15 billion tons, with a trade value of US$70 billion.[10]

The volume of sand extracted globally causes major degradation to rivers, deltas and coastal and marine ecosystems, resulting in loss of land through river or coastal erosion and lowering of water tables.[11] Despite the colossal quantities of sand and gravel being used, and the significant damage that their extraction causes to the environment, this problem has been mostly ignored by policy makers, and remains unknown even by many in the construction industry and shelter sector.[12]

Climate change

Climate change is a phenomenon of which the shelter sector is well aware, given the increase in regularity and severity of extreme weather events. As a result of climate change, severe weather has become more common and less predictable. From 2006 to 2015, there have been 6080 reported disasters, affecting about 2 billion people, the majority occurring in low- and middle-income countries.[13] Indications are that climate change will increase the exposure of many of the world's most vulnerable communities to extreme weather events. For example, projections suggest that, by 2025, more than 3 billion people – 70 per cent of the predicted global urban population – will be living in low-elevation coastal zones.[14]

But climate change is not just about extreme weather events. Changes to regular weather patterns – increases or decreases in precipitation or changes to the timing and frequency of these rains – have implications for agricultural seasons. Severe droughts are becoming more common in many parts of the world, and some scientists have made connections between drought and the roots of the Syrian conflict (through exacerbating urban migration).[15] Both drought and conflict have implications for the shelter sector, as they are significant factors behind migration or shelter need (for example, more than 3 million people are currently displaced in Somalia and Ethiopia due to a combination of these factors). This connection with climate change needs due recognition.

What is not in doubt is that the effects of climate change impede progress in reducing poverty. This is especially clear during emergencies, which almost always disproportionately affect the poorest and most excluded populations, who may, for instance, live on poorer-quality land and have fewer choices of where to live. Such communities are also less able to cope with climate change through adaptation or risk reduction, because of their limited human, financial and institutional capacity. As one World Bank report put it, 'Poor people suffer only a fraction of economic losses caused by disasters, but they bear the brunt of their consequences… As climate change magnifies natural hazards, and because protection infrastructure alone

	Top ten risks in terms of likelihood	Top ten risks in terms of impact
1	Extreme weather events	Weapons of mass destruction
2	Large-scale involuntary migration	Extreme weather events
3	Natural disasters	Water crisis
4	Terrorist attacks	Natural disasters
5	Data fraud or theft	Failure of climate change mitigation and adaptation
6	Cyber attacks	Large-scale involuntary migration
7	Illicit trade	Food crises
8	Man-made environmental disasters	Terrorist attacks
9	Interstate conflict	Interstate conflict
10	Failure of national governance	Unemployment or underemployment

Categories

Economic

Environmental

Geopolitical

Societal

Technological

Figure 4 **Top ten risks: likelihood and impact.**[16]

cannot eliminate risk, a more resilient population has never been more critical to breaking the cycle of disaster-induced poverty'.[17]

The *Global Risks Report 2017* rated extreme weather events as the number one risk for likelihood and number two for impact, naturally triggered disasters at number three for likelihood and number four for impact, while the failure of climate change mitigation and adaptation ranked at number five for impact (see Figure 4).[18]

Extreme weather events have ranked in the top two for likelihood for the past four years, with climate and naturally triggered disaster-related risks appearing and ranking highly in a variety of forms across all years. Related and relevant societal upheavals such as large-scale involuntary migration have also ranked highly over the past two years.

Disaster risk reduction, and climate change adaptation and mitigation

Despite the very real threats posed by climate change, society, politicians, the shelter sector and the broader humanitarian community are not acting with due urgency to adapt ways of working to mitigate some of the projected effects. Any idea that shelter and settlement agencies can simply do more and do it bigger shows that, despite this being our business, we are not immune to the boiling frog syndrome.[20]

Disaster risk reduction (DRR)[21] and now climate change adaptation (CCA)[22] are spoken about in the sector, but neither accounts for a significant proportion of budgets for humanitarian shelter sector programming or of donors' humanitarian portfolios, despite the often-quoted World Bank statement of 'for every one dollar

2013	2014	2015	2016	2017
Severe income disparity	Income disparity	Interstate conflict with regional consequences	Large-scale involuntary migration	Extreme weather events
Chronic fiscal imbalances	Extreme weather events	Extreme weather events	Extreme weather events	Large-scale involuntary migration
Rising greenhouse gas emissions	Unemployment and under-employment	Failure of national governance	Failure of climate-change mitigation and adaptation	Major natural disaster
Water supply crises	Climate change	State collapse or crisis	Interstate conflict with regional consequences	Large-scale terrorist attacks
Mismanagement of population ageing	Cyber attacks	High structural unemployment or under-employment	Major natural catastrophes	Massive incident of data fraud or theft

Categories

Economic

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Figure 5 **Top five global risks in terms of likelihood, 2013–2017.**[19]

invested in DRR, seven dollars is saved'.[23] Unfortunately, activities that bring lasting benefits such as increased energy efficiency or durability are generally omitted from shelter sector programming, usually for reasons of cost.

DRR and CCA have their own communities of practice, terminologies, science and arguments. For shelter sector practitioners however, their programmatic responses to either will in many regards amount to much the same range of activities. The shelter sector is therefore likely to focus on 'strengthening' buildings and infrastructure (physically engineered solutions) or communities (increasing awareness and preparedness) to cope better with whatever hazards may have affected them in the past, or are expected to in the future.

This focus on 'strengthening', although useful, has limited applications when trying to solve some of the root causes of the problem and the effects of humanity and settlements on the global environment. Indeed, in some instances it is actively detrimental, by promoting the use of ever more materials. Climate change mitigation (CCM)[24] activities and other approaches aiming to reduce emissions, or change behaviours to make better use of the local environment to reduce exposure to risk, are rarely considered in humanitarian circles, or when they are considered, are thought to be niche activities, or extravagant.

Ultimately, programming will need to include mitigation activities that – at the bare minimum – tackle or offset programme activities that contribute to the causes of climate change, as well as adaptation components to tackle the effects of the phenomenon and their associated risks. More training on DRR, house designs with more cement or cross-bracing, or micro-insurance schemes may reduce some of the damage caused by disasters, but they will do nothing to change the trajectory of increasing greenhouse gas emissions, a warming planet and a worsening risk profile for much of the global population. So, rather than simply accepting the facts that the climate is getting warmer and more variable, that increasing numbers of dwellings will be destroyed by extreme weather, and that more people will displaced by conflict, the shelter sector should be asking the following questions:

- How can doing our work differently reduce environmental harm (primarily greenhouse gas emissions) caused by housing construction and use (energy needs and consumption)?
- How can we promote behavioural change and more sustainable approaches to the use of materials and resources?
- How can project design tackle the broader causes of communities' increased exposure to risk and hazards?
- How do shelter practitioners work with others to consider community risks and hazards – and their developmental requirements – at a higher and more effective level?

Given the close relationships between livelihoods, risk reduction and the environment, we should devise a multi-pronged approach to solving complex problems. This could also bring a range of 'multiplier' benefits.

Conclusion

The issues raised in this chapter present the shelter sector with a wide range of difficult questions. Should shelter responses include broader social and economic measures, to acknowledge the need to reduce or mitigate construction-related emissions of greenhouse gases while still meeting shelter needs? Should shelter responses promote sustainable development, or automatically include climate change adaptation and mitigation? How long can the shelter sector continue to hide behind arguments of urgency, ignoring the longer-term repercussions of its work, or the implications of local actions for global problems? Does the sector carry on as usual? Or should we try to change and lead by example?

The answer to the last question should be 'yes'. Ultimately, the shelter and settlements sector has a responsibility to lead by example, rather than focus only on the immediate shelter problem needing a response. Saving lives is vital, but does not provide an excuse for leaving assisted populations living in situations that are not conducive to the healthy existence of future generations. The shelter sector is aware of the complexities, and for this reason has no excuse not to be at the forefront of making the necessary changes, and of finding ways to apply sustainability-based thinking to society and our economies. If appropriately resourced, the sector is well positioned to think ahead, innovate, experiment, champion and use technology to bridge gaps by, for instance, promoting energy-efficient design and materials or including access to clean household energies in our programming. Equally, the sector needs to grasp the role of humanitarian response in setting the future direction of post-crisis recovery and development, and take ownership of some of these efforts. In its settlements approach, the sector should acknowledge and embrace the needs of the home and inhabitants beyond the physical structures, and become a leader in pushing the messages of sustainability into the humanitarian mainstream.

1 Agencies include those of the United Nations, the Red Cross and Red Crescent movement, national and international NGOs, and donors.

2 United Nations Department of Economic and Social Affairs (2017) *World Population Projected to Reach 9.8 Billion in 2050, and 11.2 Billion in 2100*. www.un.org/development/desa/en/news/population/world-population-prospects-2017.html

3 C Setchell (2014) Presentation with data originally sourced from UN Population Division's World Urbanization Prospects. https://esa.un.org/unpd/wup/DataQuery.

4 E Stallman (nd) *Human Population and Consumption: What are the Ecological Limits?* Ecological Society of America, Washington DC. www.esa.org/esa/science/reports/ecological-limits

5 Global Footprint Network (2018) *Ecological Footprint*. www.footprintnetwork.org/our-work/ecological-footprint/#worldfootprint.

6 This does not include non-renewable resources such as fossil fuels or mined commodities.

7 Pacific Institute (2018) *Water Conflict*. www.worldwater.org/water-conflict.

8 UN Water (2018) *World Water Development Report*. www.unwater.org/publications/world-water-development-report-2018.

9 E Meier (2018) *Restricted and Endangered Wood Species*. The Wood Database. www.wood-database.com/wood-articles/restricted-and-endangered-wood-species.

10 S Goicoechea (2014) *Building an Economy on Quicksand*. ejolt: Environmental Justice Organisations, Liabilities and Trade. www.ejolt.org/2014/08/building-an-economy-on-quicksand.

11 P Peduzzi (2014) *Sand, Rarer Than One Thinks*. UNEP Global Environmental Alert Service. https://na.unep.net/geas/archive/pdfs/GEAS_Mar2014_Sand_Mining.pdf.

12 Ibid.

13 International Federation of Red Cross and Red Crescent Societies (2016) *World Disasters Report*. www.ifrc.org/en/publications-and-reports/world-disasters-report/world-disasters-report.

14 JC Armstrong (2016) *Defining the Architecture and Attributes of 'Successful' Climate Change Adaptation Surrounding Long-Lived Infrastructure in the Coastal Zone*. PhD thesis, Loughborough University. https://dspace.lboro.ac.uk/dspace-jspui/bitstream/2134/25483/1/Thesis-2017-Armstrong.pdf.

15 J Selby et al (2017) 'Climate change and the Syrian civil war revisited'. *Political Geography* 60, pp. 232–244.

16 World Economic Forum (2017) The *Global Risks Report 2017: 12th Edition*. Insight Report. WEF, Geneva. Figure 3. http://reports.weforum.org/global-risks-2017/.

17 S Hallegatte et al (2017) *Unbreakable: Building the Resilience of the Poor in the Face of Natural Disasters*. Climate Change and Development Series. World Bank, Washington DC. https://openknowledge.worldbank.org/handle/10986/25335.

18 World Economic Forum (2017) The *Global Risks Report 2017: 12th Edition*. Insight Report. WEF, Geneva. http://reports.weforum.org/global-risks-2017/.

19 Ibid, Figure 2.

20 Wikipedia (2018) *Boiling frog*. https://en.wikipedia.org/wiki/Boiling_frog.

21 DRR is the concept and practice of reducing disaster risks through analysis and management of their causal factors. It reduces exposure to hazards, lessens the vulnerability of people and assets, improves management of the land and environment and preparedness for adverse events. JE Hay (2009) *Institutional and Policy Analysis of Disaster Risk Reduction and Climate Change Adaptation in Pacific Island Countries: Final Report*. United Nations International Strategy for Disaster Reduction, and the United Nations Development Programme, p. 1. www.unisdr.org/we/inform/publications/18869.

22 CCA is defined in the United Nations Framework Convention on Climate Change as 'adjustments in natural or human systems in response to actual or expected climatic stimuli or their effects that moderate harm and exploit beneficial opportunities. This can include: (a) adapting development to gradual changes in average temperature, sea level and precipitation; (b) reducing and managing the risks associated with more frequent, severe and unpredictable extreme weather events'. Cited in JE Hay (2010) *Disaster Risk Reduction & Climate Change Adaptation in the Pacific*. United Nations International Strategy for Disaster Reduction, and the United Nations Development Programme, p. 2. www.unisdr.org/files/26725_26725drrandccainthepacificaninstitu.pdf.

23 I Kelman (2014) *Disaster Mitigation is Cost Effective*. World Development Report Background Note. World Bank. https://openknowledge.worldbank.org/handle/10986/16341.

24 Climate change mitigation is 'an anthropogenic intervention to reduce the sources or enhance the sinks of greenhouse gases'. Intergovernmental Panel on Climate Change (2001) *Climate Change 2001: Synthesis Report*. www.ipcc.ch/ipccreports/tar/vol4/index.php?idp=204.