SFPE EUROPE

AN OFFICIAL PUBLICATION OF SFPE

Fire in Humanitarian Settings: Holistic Approaches

By: Helen Underhill, Kindling, UK/USA

Approximately 110 million people worldwide have been forced to leave their homes, over 36 million of which are displaced across borders[1]. Although figures can vary quickly with a new crisis, UN estimates suggest around one-fifth of the world's refugees live in camps[2], a physical environment that presents very particular fire risk in local, national and global social and political contexts that adds significant complexity to how to address the problem. By bringing together expertise from urban/wild fire science, human behaviour, informal and non-formal education, urban development and disaster risk reduction to create a holistic approach to fire safety in humanitarian settings, new ways of thinking about fire risk reduction are possible.

The problem of fires in refugee camps

Figure 1: Aftermath of Fire in Cox's Bazaar, Bangladesh[3]

[1] UNCHR. *Refugee Data Finder.* 2023. Accessed: https://www.unhcr.org/refugee-statistics/#:~:text=Data%20on%20some%204.4%20million,estimated%20to%20be%20significantly%20higher.&text=69%20per%20cent%20of%20refugees,neighbouring%20their%20countries%20of%20origin.

[2] USA for UNCHR, *Refugee Camps Explained*. 2021. Accessed: https://www.unrefugees.org/news/refugee-camps-explained/#Howmanyrefugeesliveinrefugeecamps?

[3] Image credit: Paul Chamberlain/MOAS, 2021

- Between January and April 2020, 15 fire incidents affected 15,000 people in Borno state, Nigeria. Just one of these fires, in the International Secondary School Camp, killed 15 refugees, injured 15 others, destroyed 1,250 shelters and several community buildings, and displaced 8,000 people.
- In September 2020, a fire at Moria Reception and Identification Center in Lesvos, Greece, displaced almost 13,000 refugees.
- Several major fire incidents have affected the Rohingya refugee camps in Cox's Bazar, Bangladesh, since 2017: the March 22nd 2021, fire in Cox's Bazaar, Bangladesh, killed at least 11 people, injured another 560 and displaced over 45,000. This fire destroyed over 1,600 facilities including hospitals, distribution points, learning centers, and more. It was perhaps the largest and the most high-profile fire ever in a humanitarian setting[4].

Cascading fire risk in humanitarian settings

Fire problems in humanitarian settings emerge out of a complex set of socio-technical and contextual conditions, including but not limited to:

- Limited land means settlements are often densely packed, enabling fire to spread whilst also restricting access for what formal fire response services might be available;
- Various factors impact the materials for shelter construction (e.g., availability, funding and cost, speed of construction during an emergency response, degree of perceived permanence and political sensitivities) so they are often combustible (e.g., bamboo, wood, and plastic tarpaulin);
- Within households, energy poverty limits availability and choice of fuel for cooking, heating and lighting, causing reliance on methods prone to ignition (e.g., open fires/flame, unsafe informal electrical connections);
- There is insufficient knowledge of fire safety within households and across the sector, which can result in 'sensitisation' posters that place responsibility for behaviour change on residents;
- Lines of responsibility for fire safety in humanitarian settings are unclear.

In each of the areas that shape how humanitarians engage in the creation or management of a camp, whether in shelter and settlement design, camp management, in health and education programs, or as part of gender mainstreaming[5], there are opportunities to improve fire safety. However, the competing demands and complexities associated with humanitarian assistance and a preference for tangible and quantifiable and 'solutions' is unintentionally cascading fire risk through the system (see Figure 2). Where fire prevention and mitigation actions are enacted, they are rarely engaged with holistically nor evaluated. In a sector that centres on responding to urgent need and crises, a focus on

[4] Kindling / Global Shelter Cluster, *The State of Fire Safety in the Humanitarian Sector: A story of unintended consequences.* 2023. https://sheltercluster.org/construction-standards-working-group/documents/gsc-state-fire-safety-report

[5] Within the humanitarian & development sectors, 'mainstreaming' refers to the practice of integrating a particular perspective in all aspects of a program (e.g., considering gender in how a program is designed, monitored, the language for reporting, etc). For 'fire risk reduction mainstreaming', see: Antonellis, D., Duloy, P., Kennedy, J. & Palmer, L. 2021. *A Burning Issue for Shelter Programming,* Opinion Pieces, Shelter Projects 8th edition, p.165-167. https://www.shelterprojects.org/shelterprojects8/ref/b04-aburningissueforshelterprogramming180821.pdf

fire response (suppression during a fire event) and sensitisation (e.g., posters) is expected, but alongside unclear ownership of the problem, this oversimplified approach undermines progress.

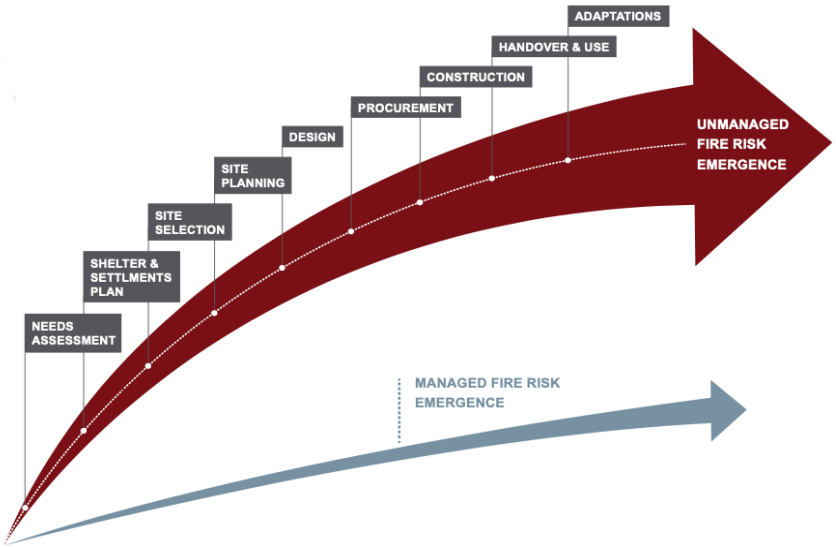

Figure 2: Illustration of cascading fire risk emergence in a planned camp[6]

As Figure 2 illustrates, there are opportunities to consider and plan for reducing fire risk within the different stages of preparing for and providing humanitarian assistance in planned camps: fire risk can be considered within needs assessments, shelter and settlement planning, site selection, shelter design, procurement, construction, and in the engagements with the people who live there as the settlement evolves[7].

Fire engineers have a critical role in developing technical understandings of fire in shelter and settlements, but there is an urgent need for this knowledge to be created within a holistic socio-technical framework that can enable the sector to an integrated approach of fire prevention, mitigation, preparedness, response and recovery.

Responsibility for promoting and maintaining fire safety mechanisms must be shared: for example, where extinguishers are distributed (see figures 3 & 4) there should be a plan for how different actors (including residents) are responsible for ensuring correct use and ongoing maintenance, and where fire safety education initiatives centre on behaviour change, they should be rooted in understandings of how people live, and the factors that enable or prevent change in the specific context.

[6] See Kindling / Global Shelter Cluster, *Fire Risk Reduction Guidance for Humanitarian Shelter and Settlements,* 2023, p.17-18. https://sheltercluster.org/construction-standards-working-group/documents/gsc-fire-risk-reduction-guidance

[7] Kindling / Global Shelter Cluster, *Fire Risk Reduction Guidance for Humanitarian Shelter and Settlements,* 2023, p.18. https://sheltercluster.org/construction-standards-working-group/documents/gsc-fire-risk-reduction-guidance

Figures 3 and 4: Empty fire extinguisher boxes, Lebanon[8]

Creating a holistic approach

A holistic approach to understanding and reducing fire risk in humanitarian settings connects social, environmental, economic and political understandings of risk with technical knowledge of fire. This socio-technical collaboration is essential to ensuring knowledge and practices around fire safety within the humanitarian sector are informed by understandings of how people understand, live with, manage, respond to, and recover from fire.

For instance, due to the increasing length of time that people live within camps and the evolving nature of their living situation (e.g., births, deaths, health issues, fluctuations in income, etc.), consideration of fire risk cannot be limited to initial planning and design. Just as urban populations in formal housing adapt how they live in their homes (e.g., buying new electrical products or installing solar panels, etc.), people and communities within humanitarian settings adapt individual shelters because they live in them, often year after year after year. For example, figure 5 shows decorative fabric attached to the inside of the shelter to cover the donor agency logos who provided the tarpaulin or sheeting and enable "beautification"[9] of the home.

Conditions around shelters and within settlements also change: winter necessitates warmth so wood is stored alongside the walls of the shelter, while waste management fluctuates so piles of rubbish build up in the settlement (see figure 6). While it is essential to understand how these factors contribute to increased risk of ignition or fire spread, this knowledge alone will not help us to understand how to prevent the drivers of fire risk: for example, working with settlement residents and actors within the humanitarian sector to develop prevention and mitigation strategies (such as the upkeep of fire breaks) can create knowledge through collaborative and problem-posing education and help us to understand why such adaptations are necessary and what other socio-technical 'solutions' are needed and might be possible (or not) in those contexts.

[8] Image credits: Participant photography, Dr Helen Underhill, 2021 (see Hirst, L., & Underhill, H. (2023). Fire Safety in Informal Settlements: A Gendered Framework of Fire Justice. *Fire Technology*, 1-16.)
[9] Interview with participant, Dr Helen Underhill, Lebanon, 2019

Figure 6: Storing and disposing of waste in camps is a challenge for managing fire risk, Lebanon[10]

<u>Advancing knowledge through collaboration</u>

Where technical solutions (whether in shelter and settlement planning or design, or for fire response, etc.) are implemented for humanitarian settings, they must be underpinned by contextual knowledge. Interventions designed for high-income contexts and the built environment applied to camps are not always appropriate or relevant and can lead to unintended consequences[11][12]. A holistic socio-technical approach seeks greater understanding of the physical risk factors that lead to many ignitions and/or extensive fire spread, and the social, environmental, political and economic conditions that generate these risk factors.

Figure 5: Fabric covering internal walls and electrical cabling, Lebanon

There is an urgent need for more technical data and knowledge of fire, fire risk and fire safety in humanitarian settings to understand how these specific fire problems are created and what opportunities for reducing risk are being missed[13], and for this to be brought into conversation with residents' experiences of the before, during and after stages of a fire. This is critical to ensure that, fire safety interventions – whether technical, social or a combination – are appropriate and do not depend on education for behaviour change that fails to recognise the complexities and dynamics of daily life in humanitarian settings.

Across the world, different people in different contexts experience fire risk in different ways, so a new collaborative and holistic approach needs to reflect this dynamic problem and respond with openness to new ways of thinking. In this context, fire safety professionals should heed the call to contribute valuable experience, expertise and knowledge of the complexities of fire to a complex and dynamic problem that impacts the daily lives of some of the most vulnerable people in the world.

---

[10] Image credits: Participant photography and Dr Helen Underhill, 2019

[11] Hirst, L., & Underhill, H. 2023. Fire Safety in Informal Settlements: A Gendered Framework of Fire Justice. *Fire Technology*, 1-16.)

[12] Kindling / Global Shelter Cluster, *The State of Fire Safety in the Humanitarian Sector: A story of unintended consequences.* 2023. https://sheltercluster.org/construction-standards-working-group/documents/gsc-state-fire-safety-report

[13] Kindling / Global Shelter Cluster, *The State of Fire Safety in the Humanitarian Sector: A story of unintended consequences.* 2023. https://sheltercluster.org/construction-standards-working-group/documents/gsc-state-fire-safety-report