



**Inter-Agency
Coordination**
Lebanon



**INTER-AGENCY SHELTER SECTOR COORDINATION
WORKING GROUP**

***Guidelines for the Fire Prevention, Preparedness,
and Response (FPPR)***

***Fire Prevention, Preparedness and Response in Informal
Settlements, Residential and Non-Residential Buildings***

**This document was developed by a
Temporary Technical Committee
Led & Developed by Save the Children International (SCI)
With contributions from
ACTED, Intersos, Medair, NRC, Lebanese Red Cross, PCPM,
Ministry of Social Affairs, UN-Habitat and UNHCR**

**Endorsed by the Ministry of Social Affairs on
*20-January-2018***

List of Acronyms & Definitions

BoQ	Bill of quantities
FEs	Fire Extinguishers
F-Kits	Fire Kits
FFKs	Firefighting Kits
HPQ	Household profiling questionnaire
HU	Housing units
IAMP	Inter-Agency Mapping Platform
INGOs	International non-governmental Organizations
IS	Informal Settlements
KAP	Knowledge Attitude and Practice
LCD	Lebanese Civil Defense
LED	Light-Emitting Diode
LRC	Lebanese Red Cross
MoSA	Ministry of Social Affairs
NGO	Non-governmental Organisation
OFC	Occupancy free of charge
PDM	Post-distribution monitoring
RAIS	Refugee Assistance Information System
SSBs	Substandard Buildings
SSUs	Substandard Units
WASH	Water, Sanitation and Hygiene

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1 Executive Summary

Lebanon is hosting at least one million Syrian refugees officially registered with the UN, many of them living in informal tented settlements and residential and non-residential buildings scattered around the country. Unfortunately, tented settlements and substandard buildings, due to their informality and spontaneity as they are built in an ad hoc manner, are at high risk of fire.

Persons with disabilities, elderly, woman and children are the most vulnerable to burn injuries especially when living in overcrowded structures, using unsafe cooking and heating appliances or open fires. Therefore, fire prevention and control initiatives are important and necessary in all shelter types (informal settlements, residential and non- residential buildings) where some or all of these conditions are found. Therefore, comprehensive, cost-effective and evidenced-based practices are needed to support and promote the safety, health and well-being of vulnerable populations.

Presently, there is no national regulation in Lebanon for site planning that incorporate appropriate fire mitigation. Ad-hoc fire prevention programs had been provided through Collective Site Management and Coordination (CSMC), UNHCR funded shelter programs and other shelter partners, providing fire safety trainings to a limited number of informal settlements. The Shelter Sector has taken an initiative to include fire safety indicators within the logical framework in the Lebanon Crisis Response Plan LCRP 2017 and LCRP 2018, when there was no sector in charge with the responsibility and authority around fire prevention, mitigation, preparedness, response, salvage and investigation.

Inadequate fire guidelines globally are due, in part, to the lack of estimates of the burden of fire-related injuries or structural loss in humanitarian settings. Fire prevention, preparedness and response (FPPR) activities shouldn't be looked at from a single sectoral perspective, rather from a cross-sectoral one. FPPR activities can and should be mainstreamed throughout the various Shelter, WASH, Education, Health and Protection sectors. Although the National responsibility and authority around FPPR lies with the Lebanese Civil Defense as a governmental organization, the extent of their resources and capacity have been overstretched and become limited, following the large influx of displaced into the country.

To address the above mentioned gaps, this guideline was developed by an initiative from the Shelter sector with an aim to promote best practices of prevention, preparedness and response that will reduce fire-related hazards among the residents of informal settlements, residential and non-residential buildings in Lebanon, and promote the development of long-term, harmonized cross-sectoral strategies of fire hazard reduction that will bring sustainable solutions and incorporate disaster resilience and mitigation into actions and decisions.

1.1. Introduction

As the crisis becomes protracted, the **socio-economic situation** of many displaced Syrians has worsened¹. Over a million displaced people are currently registered in Lebanon - the highest refugee population per capita in the world. Seventy percent of the displaced Syrian households and the entire population of Palestine Refugees from Syria are severely or highly economically vulnerable², with limited rights in the country. The accumulation of debt and depletion of assets and savings has caused many of the displaced to reside in hazardous, inadequate or overcrowded shelter conditions. The Government of Lebanon prohibits the establishment and construction of formal camp settlements, and restricts the types of shelter materials that can be provided to those displaced. These restrictions create barriers to agencies attempting to deliver safety improvements, and can obstruct the provision of less flammable and safer material to prevent fire outbreaks. Informal Settlements are defined as settlements that were established in an unplanned and unmanaged manner, which means they are generally unrecognized. The majority (73 percent) of the displaced population are residing in residential buildings. Twenty five percent of these shelters are deemed below minimum physical humanitarian standards³. Of the nine percent living in non-residential buildings – already considered below standard as they were not originally designed for residential use – more than 48 percent⁴ are considered so far below standards that they are deemed unsuitable for upgrading to adequate standards.

1.2. Humanitarian Response

Only recently has the harmonization and standardization of fire risk mitigation activities across humanitarian agencies taken place, prior to which interventions were conducted by agencies on a standalone basis, with little coordination between partners. In 2016, Save the Children and Operation Florian⁵ conducted a Fire Risk Reduction assessment in Syrian Refugee and vulnerable communities in Lebanon, the results and recommendations led to the development of the Temporary Technical Committee responsible for the development of the Fire Prevention, Preparedness and Response (FPPR) national guidelines.

¹ LCRP – Shelter Chapter - 2018

² Lebanon Crisis Response Plan 2017 - 2020

³ LCRP – Shelter Chapter - 2018 [This figure excludes overcrowding which is (<4.5sqm per person) in the shelter]

⁴ The condition of the non-residential shelters is claimed, for six percent, to be in dangerous conditions, and for 48 percent to be below the minimum shelter standard.

⁵ Operation Florian was established as a charity in 1995 (Charity Number 1054657). It is a UK Fire Service Humanitarian Charity working to promote the protection of life amongst communities in need, worldwide, by the provision of equipment and training to improve fire fighting and rescue capabilities.

During the development of the guidelines, a need for strengthening the soft component of the guideline (i.e. training and capacity building of both humanitarian staff, and refugee and vulnerable host communities) was identified. A fire training material workshop, funded by UNHCR, led by Save the Children, and conducted by Operation Florian was aimed to develop a holistic and standardized training package that caters to fire safety in informal settlements, residential and non-residential shelters among refugee populations. Organizations that contributed to the development of the material include UNHCR, Save the Children, Medair, NRC, PCPM, Intersos, PU-AMI, ACTED, UN-Habitat, LRC, and the LCD.

The below subsections elaborate the community, household and child-friendly approaches to fire safety, developed by the shelter partners as a result of the workshop. The outcome of the workshop also led to the development and launching of the [UNHCR-SCI Fire Safety Training Tools & Resources online platform](#), containing standardized training material to facilitate the harmonization of soft component fire risk mitigation activities across humanitarian agencies for residential and non-residential buildings, and informal settlements in Lebanon. The [UNHCR – SCI Fire Safety Training Tools & Resources Guidance Note](#) was developed also in order to facilitate the utilization of the training content, and can be accessed online. A thorough [training plan](#) tackling fire safety interventions on a community and household level while mainstreaming a child-friendly approach can also be found within the content on the online platform. A detailed overview of the training plan can be found in **Annex 2** of this document. A [Fire Risk Mitigation Standard Operating Procedure](#) has also been developed (initially designed for implementing partners in the Beqaa region) to give guidance on the minimum technical fire safety standards in informal settlements, residential and non-residential buildings. Technical guidelines for each shelter intervention is elaborated in the sections below.

1.3. Objectives

This guideline aims to provide a holistic approach for all agencies, both national and international, on fire risk preventative and preparedness methods, responses to fire risks and post-event assessment. The co-development of this guideline will further ensure that national / international organizations are more actively engaged in this shelter response, and allow for best practices to be formulated for more effective and efficient fire risk mitigation techniques, training and capacity building. The objectives of this guideline are as stated below:

- Broad objective(s):
 1. To harmonize all fire related activities among shelter actors in IS, residential and non-residential buildings and their common areas,
 2. Strengthening the capacity of Lebanese institutions and national stakeholders regarding fire safety and prevention.
- Specific Objectives:
 1. To engage in the development of fire safety strategies to identify gaps within the LCD and LRC to enhance disaster risk management.

2. To engage in the development of long-term, harmonized cross-sectoral strategies of fire risk mitigation that will bring sustainable solutions and community resilience into fire programming.
3. To propose best practices that will reduce fire-related risks that may lead to destruction of possession, injury or loss of life among the residents of informal settlements, residential and non-residential buildings and their common areas in Lebanon.

1.4. Context Analysis

Shelter Context

Displaced Syrians and persons registered as refugees by UNHCR live across Lebanon in rural, semi – urban and urban areas. 44 percent of persons registered as refugees by UNHCR live in governorates bordering Syria: Akkar, Bekaa, Baalbek-Hermel, often in informal settlements. However, in the other five governorates, the overwhelming majority live in residential and non-residential buildings in suburban regions and in urban areas in and around the main cities of Tyre, Saida, Tripoli and particularly in the urban municipalities of Greater Beirut. The displaced population resides within existing, often densely populated communities, where they are less visible than those living in informal settlements. The Palestine Refugees from Syria are hosted by Palestine Refugees in Lebanon in their congested camps, adjacent areas and informally built gatherings.⁶

Approximately 253,418 displaced people live in IS at present. (IAMP 43) with 194,274 of those in the Bekaa/ Baalbek Hermel.

There are 7,056 active informal settlements mapped nationally as of March 29th, 2017, which typically range from 1 to 238 tents. 3,906 IS nationally have less than 4 tents. Informal settlements are generally constructed in an ad hoc manner. Approximately 400,000 displaced people live in SSB and SSU⁷. These often lack doors, windows, roofing, electricity and basic sanitation fittings. Sub-standard buildings / units house an average of 1.6 families per unit, are usually harder to reach for humanitarian agencies, and have not been mapped to the same extent as IS.

Fire Risk

The below data reflects the census of fires in residential and non-residential buildings, and informal settlements per governorates in 2016 and 2017, Data acquired from the **Lebanese Civil Defence** fire database reveals 1,024 fires in residential and non-residential buildings combined, and 60 fires in informal settlements for the year 2016. Fire data pertaining to 2017, specifically for January and February, reveal 202 fires in residential and non-residential buildings combined, along with 30 fires in informal settlements, which is alarming given a timespan of two months. The census of fire outbreaks per governorate can be found in Annex 1 of this document. There is a low level of fire safety knowledge among displaced

⁶ LCRP 2017-2020

⁷ VASYR 2017

populations in Lebanon. Vulnerable groups such as children and the elderly are particularly at risk.⁸ In Lebanon, increasing numbers of fire incidents, injuries and fatalities in IS, residential and non-residential buildings are being reported by both humanitarian agencies and the Lebanese Civil Defence (LCD).

1.5. Hazards, Risks and Vulnerabilities

Hazards

The primary cause of fire in informal settlements, sub-standard buildings and their common areas are electrical faults, cooking practices, children playing with sources of ignition, candles, heating, burning of wastes / cigarettes, and incidents involving household LPG⁹ tanks. Fire risks in all of the above mentioned residences are also affected by seasonal variability and structural hazards.

In informal settlements, weatherproofing materials to construct the tents, including timber, plywood and plastic sheeting are high-fire loading⁴⁹, in addition to the abundant tires used on roofs to weigh the tents down. For residential and non-residential buildings, some of the main elements pertaining to fire risks and outbreaks are the lack of good quality doors which increase fire hazards and vulnerability, hoarding of household furniture and belongings in rooms during rehabilitation phases / living areas during cold winters, that present high-fire loading risks, and flammable materials used as décor around within the shelter (i.e. curtains near stove in cooking areas).

Risks, Livelihoods and Impacts

Informal and substandard settlements are at high risk to fire outbreaks, with recent fire incident figures showing an increase in fatalities, casualties and loss of possession due to fire in last year alone. Since the production of the fire risk prevention, preparedness and response material resources (July 2017), there have been 4 major fire outbreaks (considered major due to loss of life recorded), including; a fire outbreak in Qab Elias in 2017, with approximately 100 tents totally destroyed and the death of one young boy; outbreak in Bar Elias in July 2017, with 15 tents totally destroyed and the death of one young girl; outbreak in Bebnine, North Lebanon in December 2017, with three totally destroyed tents, three fatalities (two women and one child), and seven injuries (suffered burns); and outbreak in Ghazze totally destroying 30 tents with 9 deaths (all recorded children under the age of 5). Data retrieved from the Lebanese Civil Defense showcases the below fire recorded incidents in Lebanon in 2016 and 2017.

2016		2017 excluding December	
Residential and Non-Residential Buildings	Informal Settlements	Residential and Non-Residential Buildings	Informal Settlements

⁸ *Improved Methods for Fire Risk Assessment in Low-Income Countries and Informal Settlements*

⁹ *Liquefied petroleum gas or liquid petroleum gas (LPG or LP gas)*

¹⁰ *Fire loading refers to heat output per unit floor area. It is used to assess hypothetical fire risk.*

1,024	160	777	142
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Fire incidents reported by the Lebanese Civil Defence for 2016 & 2017 in Residential & Non-Residential Buildings and Informal Settlements per governorate have been annexed¹¹. It is important to highlight that Beqaa and Baalbek / Hermel are the 2 governorates predominant in fire outbreaks in informal settlements, while Beirut and Mount Lebanon hold highest fire records for outbreaks in residential & non-residential buildings.

Fire Incidents in Lebanon 2016		
Governorate	Residential & Non Residential Buildings	Informal Settlements
Beirut	144	2
Mount Lebanon	335	18
South Lebanon	104	7
7Nabatiyeh	88	1
Baalbek / Hermel	119	31
Beqaa	93	84
North Lebanon	94	7
Akkar	47	10

Fire Incidents in Lebanon 2017		
Governorate	Residential & Non Residential Buildings	Informal Settlements
Beirut	130	10
Mount Lebanon	249	17
South Lebanon	71	6
Nabatiyeh	87	3
Baalbek / Hermel	73	37
Beqaa	94	57
North Lebanon	71	9
Akkar	32	3

In the case of Residential, non-Residential buildings and their common areas, upon inspection during the Operation Florian Fire Risk Assessment in July and August 2016, the team discovered that Residential and non-Residential buildings present different fire risks to Informal Settlement. They arguably present a higher risk of fire fatalities because of limited means of escape. Single levelled, simple layout tents are far easier to escape from than multi-levelled apartment buildings with only one stairway. Buildings of multiple occupation, particularly in medium to high-rise structures, place occupants at risk from the potential poor fire safety practice of other occupants.¹²

¹¹ Annex 1 - Fire Incident Records in Lebanon 2016-2017

¹² Operation Florian Situation Study and Needs Assessment, July – August 2016

The lack of coordinated and harmonized fire data (unified recording of number of fire incidents and their cause, number of resulting casualties (injuries / fatalities), number of tents totally / partially destroyed, etc.) makes fire risk assessments and response arduous. **Gaps in fire data** include, but are not limited to:

- Detailed number and circumstances of fires within refugee / vulnerable host communities.
- Harmonization of fire incidence recording (between humanitarian and national agencies) as the LCD does not use the P-code location system preferred by humanitarian agencies.
- Comparison of fire statistics between the refugee population and in country population.
- Inconsistent data and different reporting mechanisms of humanitarian agencies concerned with Fire Risk Mitigation in refugee / vulnerable host communities.

Vulnerability

There are many categories of vulnerability when it comes to fire risks. This guideline will focus on the identification of vulnerabilities in informal settlements, residential and non-residential buildings, and communal areas both on a community level and household level. This guideline will also give reference to the Vulnerability Assessment Framework used in Lebanon by NGOs and the UN, and the Refugee Assessment Information System (RAIS) that is used to record data within the framework. However, the House Profiling Questionnaire contains few questions which could identify persons who fall into the different vulnerability categories. A report conducted by Operation Florian mission to UNHCR described categories of vulnerabilities at the household level. Women, predominantly seen as the cook, are vulnerable to fire risks since they work with flammable and fire causing tools and materials on a daily basis. Vulnerabilities for boys and girls reside in their lack of knowledge on overall fire risks. People with disabilities and the elderly are highly vulnerable due to their health, sensory and mobility issues in the case of fire outbreaks. Yet those that have mostly sustained burn injuries are usually children and / or young males who attempt to put out or fight the fire.

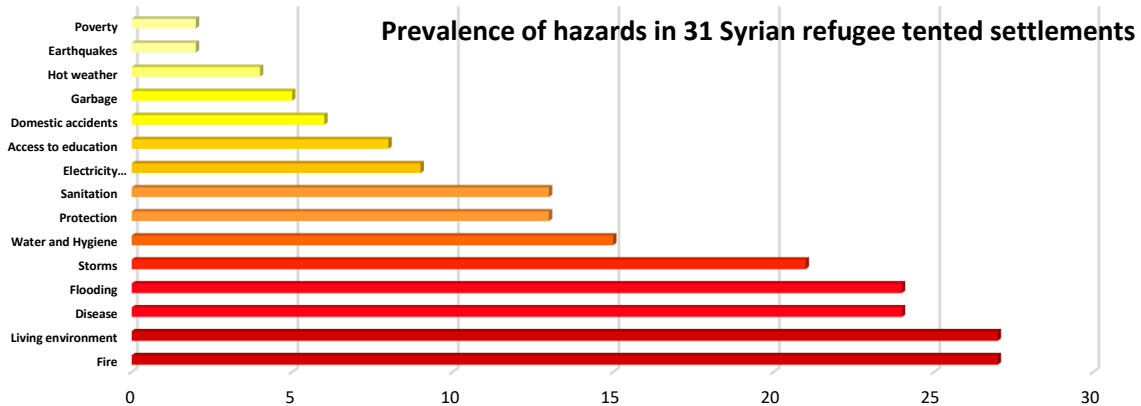
On a community level, there is a higher vulnerability for smaller IS, specifically those under 10 tents, which are less likely to receive fire extinguishers, training or support for fire prevention and preparedness. Although the occurrence of fire outbreaks are less probable than in highly dense IS, in the case that a fire does breakout these areas are often physically isolated making them harder to reach and therefore extremely vulnerable.

Risk Perception

The Fire Risk Reduction Assessment conducted by SCI in informal settlements gives way to interesting development in households' perception towards fire risks. All displaced people interviewed expressed concerned about fire, even those from households that has not experienced previous fire incidents.¹³

¹³ *SCI Fire Risk Reduction Assessment of Vulnerable Displaced Syrian Populations and Host Community in Lebanon*

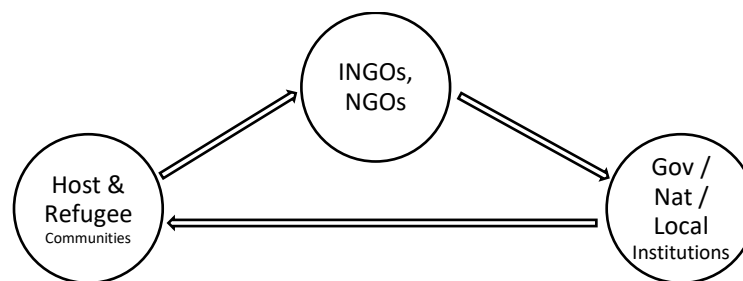
To date, the Lebanese Red Cross is the only agency to have made a formal assessment of risk perceptions. The Hazard Vulnerability and Capacity Assessments conducted by the Lebanese Red Cross (Disaster Risk Reduction program) revealed that across 30 IS, fire was perceived by the local population, to be the joint first most concerning hazard. Reportedly even higher priority than health and child education. Refer to the diagram below:



Since the general population recognizes the dangers of fires, it makes them more likely to respond positively to fire safety assistance. That, along with the fact that the humanitarian response is moving towards a stabilization phase, creates an opportunity for agencies to prioritize fire risk reduction, and provides evidence to work more closely with communities on improving sustainability of programmes and approaches.

2. Coordination

In order to sustain fire prevention, preparedness and response in vulnerable host and refugee communities, coordination must be considered on a threefold level:



- *INGOs / NGOs*: as of 2017, FPPR has been mainstreamed within shelter interventions across Lebanon. FPPR (soft component) should be further cascaded and integrated across remaining humanitarian sectors (WASH, EDU, Health, Child Protection, etc.), initiation to which may take place on interagency level.

- *Governmental (Lebanese Civil Defense) / National / Local Institutions*: coordination with INGOs, NGOs can be considered through capacity building of governmental, national and local institutions concerned with fire safety mitigation in both host and refugee communities.
- *Vulnerable Host and Refugee Communities*: as a result of the coordination between the above mentioned stakeholders, host and beneficiary communities receive continual and sustainable fire risk mitigation interventions that reduce loss of life, possession, and assets due to fire outbreaks.

3. Prevention and Preparedness

Formulated by in-depth research, evidence shows the importance of the roles communities and local organizations in disaster risk management. As in the case of community-based / lead initiatives, disaster risk management responds to local problems and needs, capitalizes on local knowledge and expertise, is cost-effective, improves the likelihood of sustainability through genuine ‘ownership’ of projects, strengthens community technical and organizational capacities, and empowers people by enabling them to tackle disaster related and other challenges.¹⁴

The following section elaborates on the technical and soft components of fire prevention and preparedness in informal settlements, residential and non-residential buildings. The technical (hard) component extrapolates fire risk mitigation activities as set in the Beqaa Fire Risk Mitigation SOP, and referenced in this document as fire risk minimum technical standards. The soft component reflects the developments and achievements of the UNHCR – SCI Fire Safety online training platform, and has been segregated to suit the corresponding approach within the relative subsections below.

The goal of this subsection is to reduce the risk of injury, mortality rates, loss of assets and possessions in vulnerable refugee and host communities due to fire. The objective is to standardize and harmonize fire risk mitigation interventions across humanitarian agencies, national and local institutions in residential and non-residential substandard buildings and informal settlements in Lebanon through:

- Strengthen awareness, capacity, resilience and response in vulnerable communities
- Ensure that all partners use guidelines, developed tools and materials, and best practices
- Improve partners’ credibility with refugees by standardizing fire risk mitigation interventions

3.1. Understanding Key Fire Hazards

The table below summarizes key hazards in refugee and vulnerable host communities, on both community and household level, as well as the level of humanitarian intervention per hazard. Corresponding mitigation techniques per hazard are also defined (in addition to their accessibility).

¹⁴ United Nations International Strategy for Disaster Reduction 2004

1. Electrical faults

Unprotected and bare electrical cabling/wiring that is exposed to water or contact with flammable materials are the main causes of electric faults in IS. Humanitarian agencies are generally restricted from intervening with electrical wiring / cabling in IS, and therefore it is crucial to raise awareness on their hazardous assembly and connection throughout the IS's layout.

Corresponding mitigation measures: *Awareness raising to covering bare wiring using quality electric insulation tape or cache cables; raising wiring from contact with shelter material / wet surfaces. It must be communicated that 'only trained electricians should mitigation measures on community level'.*

2. Cooking practices

Cooking fire risks can be divided into equipment and behaviors. The target audience should be persons that prepare and cook food (predominantly women and girls). In informal settlements, this awareness can be rolled out during the Hazard Walk session. However, for more effective training, awareness must be rolled out at household-level, with focus to:

- Use of equipment (overloaded electric sockets, gas tanks, positioning of the stove; high risks of LPG gas cylinders).
- Behaviours (smell of gas; loose clothing; reacting to cooking-oil fires)

Corresponding mitigation techniques: ensure awareness on the use of single sockets / fuses for electrical equipment; keep matches and lighters out of reach; children turning knobs on the oven; turning in pot handles so children cannot grab them; never leaving cooking unattended; closing kitchen doors; turning everything off after use; clearing up spillages to prevent accidental falls; clothing that may catch fire when cooking near to a naked flame.

3. Use of Gas Cylinders

It is recommended that NGOs explore, identify and raise awareness on the proper use of gas containers, the importance of sealing them shut when not in use, and how to properly react to the smell of gas in the home.

Corresponding mitigation techniques: *bearing in mind that gas is extremely combustible and can cause serious injury or death through inhalation (different from fire risk but worth mentioning). Also, it is importance to raise awareness, on community and household level, on the proper ways of checking for gas leaks when connecting to ovens using soapy water, where gas generates bubbles (common incorrect and dangerous practices includes using lighters).*

4. Use of candles

Candles are common household items due to long black-out periods in rural areas in Lebanon, and Best practices for this hazard should primarily

Corresponding mitigation techniques advocate for the safer alternatives uses such as the use of ghee tins filled with either soil or sand. This makes them less likely to be knocked over, and the contents can be used as firefighting medium for small fires.

5. Surrounding foliage

Accumulation of combustible or flammable materials (potential 'fuel') – e.g. solid waste such as paper/card, plastic, wood, dead plants during summer seasons can be hazardous and lead to tents catching fire in the case of outbreaks.

Corresponding mitigation techniques: collection of clusters of dried leaves, flowers and plants and storing them in fire retardant materials / containers away from tents or shelters.

6. Flammable materials

Best practices for this subsection includes the issuing of safe and fire retardant materials in IS, residential and non-residential areas, and their common areas. The issuance will result in a reduction in fire spread through existing, flammable household materials.

Corresponding mitigation techniques: Refer to section 3.3 for further insights on fire retardant specifications for substandard shelters.

7. Other key hazards and corresponding mitigation measures include:

1. Inadequate space between tents
2. Improper installation of stoves and gas tanks
3. Chimneys incorrectly extended out of the tents should be restructured fixed for increased safety.
4. Flammable materials surrounding heating zones
5. Unprotected and bare electrical cabling/wiring
6. Damaged circuit breakers
7. Plastic and cloth used for electric wire insulation
8. Diesel not correctly stored
9. Children playing with fires or near fires

3.2. Prevention and preparedness – Technical Component

Overview of Site Planning Minimum Standards from leading Humanitarian agencies

Sphere Project	Assess fire risks to inform the site planning of temporary communal settlements and the grouping of individual household shelters.
Sphere Project; UNHCR	Provision of a 30 m firebreak between every 300 m of built-up area, and a minimum of 2 m (but preferably twice the overall height of any structure) between individual buildings or shelters to prevent collapsing structures from touching adjacent buildings.
NRC	Sites should have regular firebreaks. Shelters should ideally be spaced at a minimum of twice their height apart.
USAID	Proper spacing and arrangement of all buildings to provide firebreaks. Minimum shelter space of 3.5 m ² /person. Minimum total site area of 45 m ² /person for temporary planned or self-settled settlements.
UNHCR	There should be a bare minimum figure of 30 m ² surface area per person. Firebreak (area with no buildings) 30 m wide is recommended for approximately every 300 m of built-up area. In modular settlements, firebreaks should be situated between blocks. If space allows, the distance between structures should be a minimum of twice the overall height of any structure. If building materials are highly inflammable (straw, thatch, etc.) the distance should be increased to 3–4 times the overall height.

The Fire Risk Mitigation procedures and considerations are for all partners conducting fire risk mitigation interventions in vulnerable Refugee and Host communities, whether it be in residential and non-residential buildings (SSB), and informal tented settlements (IS).

3.2.1. Technical Component – Informal Settlements

The following subsection includes technical guidance on the technical guidance on fire risk mitigation equipment and distribution criteria in informal settlements.

1. Regulated Fire Break

A regulated fire break is taken into consideration at the design phase of a formal settlement. The regulated fire break necessitates at design level to isolate a group of residential structure or tents from fire risk. The isolation method is to create additional space between a group of structures or tents vertically or horizontally in order to prevent fire from spreading. Informal tented Settlements due to their informality and spontaneity as they are built in an ad hoc manner are difficult to incorporate a regulated fire break, this requires community engagement and awareness campaign to highlight the risk from having congested tents in one settlement.

2. Distribution Criteria

The distance between a fire point and a tent should never exceed 50 metres. The recommended distance is 25 metres, unless there are natural obstacles (e.g. hills and water channels) in the site. In which case, even shorter distances / more frequent fire points will be necessary.

Package A- Fire Points	Package B- Fire Break Points
Fire Stand	Fire Stand

Fire Extinguisher Cabinet	Fire Extinguisher Cabinet
Fire Extinguisher	Fire Extinguisher
	Fire Beater
	Fire Hook

1:4 Modality: this includes the distribution of one FE for every four tents. This relates to results from challenges faced in the field, budget / funding cuts, and attempts to strengthen liability and monitoring of distributed FEs.

Package A: A preliminary design was developed by UNHCR, Save the Children, and Medair that concludes the distribution of a fire point for every 5 tents in an Informal settlement setting.

Package B: fire break points shall be distributed for every 5 fire points installed within informal settlements. For small settlements (i.e. IS having less than 10 tents), one fire break will be installed.

Recommended Specs for FE: Fire extinguishers procured and distributed in informal settlements, residential and non-residential buildings must have the specification of 6 kg 40% ABC Dry Powder. Distributed FE's should include visibility sheet showcasing date of production, date of distribution, date of refilling (if applicable), and agency responsible. FE's should also have a metallic seal on the discharge head of at least 3mm thickness, and include engraved production code and Notified Body Identification Number - CE marking 0036 (with temperature range -30/+600C).

3. **Fire Break Technique**

Mostly used when a large fire erupts. Much focus should be given to educate on **fire break technique** in informal settlements. To create a **spontaneous fire break**, community firefighting teams (described in section 3 of this document) must be aware to disassemble the third tent / structure to a tent / structure afire, taking into consideration wind direction. The risk of the adjacent tent / structure catching fire in a short period of time (less than 2 minutes) is high, and therefore to remove fuel to the fire as well as create the ability to tackle the fire at ground level in time, fire breaks can serve as a life-saving technique.

4. **Inspection Modality:**

With regards to the findings of the Fire KAP conducted by Medair and SCI, as well as through post-training assessments, PDM cycled for refilling / replacement of FEs (either damaged or used) should take place **every 12 months** upon distribution of FEs. The recommended period of time an FE can be on the field (without monitoring, and assuming no fires have broken out in the settlement, agencies

have not received complaint from beneficiaries / landlords, and FEs are ensured to be stored away from direct sunlight) is 12 months. **See annexed 'FE Sticker'**

5. FFK Item Maintenance & Sustainability:

In order to sustain the lifespan of the FE (FEs are generally produced with an approximate 10-15 year lifespan. However, exposing the FE to direct sunlight, or meddling by children decreases an FE's lifespan). The inclusion of the package A & package B modalities will ensure the above mentioned risks are mitigated, however, this should be complimented by a rigorous monitoring modality in order to ensure all FEs are accounted for). **See annexed 'FE Leaflet'**

6. Refilling Modality:

Refilling upon inspection will take place per 12 months. FEs that have been severely damaged, relocated or taken (households that relocated / were evicted and took the FEs with them) will be refilled / replaced. In the case FEs have been used / severely damaged and reported by beneficiaries, immediate refilling response will take place upon reaching **30% of distributed FEs per informal settlement.**

- Re-filling costs and logistics: Refilling costs are between 8 – 10 USD. The 6 KG 40% ABC Dry Powder Fire extinguisher costs around 19 USD when requested at wholesale prices.

FEs, fire stands, cabinets, hooks and / or beaters that have been stolen shall not be refilled in order to ensure sustainability of distributed FFKs and as not to encourage selling of the kits.

7. Consensus Fire Safety Minimum Standards

As it is technically impossible to impose a minimum standard for fire points within informal settlements due to varying layouts of the campsites, the agreed upon distance between fire points will be considered according to the following:

- 1) Good distance between tents (Above 1.5 meters between tents) will be allocated a minimum of 30 - 50 meter distance between fire points. It is important to note that the distance between fire points in any layout should never exceed 50 meters.
- 2) Congested site (between 0.5 - 1.5 meter spacing between tents): FP will be allocated a minimum of 20 - 30 meters distance between fire points.
- 3) Very congested site (less than 0.5 meters between tents): FP will be allocated 15 – 20 meters distance between fire points.

Raising awareness and engaging informal settlement communities on required / minimum fire safety standards allows for planning with the community post fire to ensure a 'build back safer' modality is

adopted. This is one possible modality to ensure sustainable fire risk mitigation practices are adopted by vulnerable communities in high risk settlements / shelters.

3.2.2. Technical Component – Residential and Non-Residential Substandard Buildings

1. Key Distribution Criteria

FFK Distribution criteria for interventions in residential and non-residential substandard buildings have been segregated to cater for budget allocation of interventions in each shelter setting.

A. Firefighting Kits (FFK) Distribution Criteria in Residential Substandard Buildings (activities included in Upgrading of Residential Structures)

2 FEs and 2 smoke detectors shall be distributed for residential units (apartment or similar) which have been rehabilitated and typically include (on average) 3 households and above. Based on the residential unit (apartment or similar) smoke detectors shall be placed outside the kitchen entrance and outside the common area (hallway) between housing units. FEs shall be placed along both ends of hallways. However, the criteria will be reduced to **1 FE and 1 smoke detector (total)** per residential unit for shelters with less than 3 households).

B. Firefighting Kits (FFK) Distribution Criteria in Non-Residential Substandard Buildings (activities included in Upgrading of Non-Residential Structures)

1 fire extinguisher and 1 smoke detector shall be distributed for each shelter unit containing 1 household or more.

2. Key Criteria Selection and Distribution of Key Items

• Fire extinguishers (IS & SSB)

- Residential buildings: fire extinguisher(s) shall be placed in hallways (outside kitchens and common areas within the shelter units), and shall be the responsibility of the tenant for refilling / repurchasing in case of damages. Shelter actors must note that this is critical information for beneficiaries to know, and elaboration during distribution should be included in the household assessments.
- Awareness raising materials: costs can be covered within budgets of each partner's shelter interventions.

• Fire alarms (SSB):

- 2 fire alarms should be placed in every shelter unit (more than 2 households). One alarm should be placed near the kitchen away from the stove and other cooking equipment so that the alarms don't activate regularly. The second alarm should be placed in the living area where heating equipment (used during the winter seasons) and other fire creating apparatuses are used making the space susceptible to fire outbreaks. The assessment team at Operation Florian has

recommended the most suitable specification of detectors that prevent nuisance activation, are tamper proof and come with a ten year warranty. Cost of the batteries are in the region of \$10.¹⁵ Cost of Fire Alarms are at an approximate 16 USD.

The above is also catered for interventions in Non-Residential Buildings, in accordance to the Key Distribution Criteria.

3.3. Prevention and preparedness – Soft Component

The soft component of the guideline refers to 1) harmonized training and capacity building of humanitarian staff, and 2) awareness raising education training for refugee and vulnerable host communities.

The objective of developing the component, including material available online, was to tackle the need for standardized implementation of fire safety activities to strengthen credibility of implementing partners, as well as the harmonization of humanitarian partner approaches through the access to 'standardized and shared' tools and resources used to conduct fire safety activities.

The component tackles fire risk mitigation on community and household levels, and integrates a child friendly approach aimed to capacitate men, women and children in informal settlements and substandard buildings. The following subsection defines soft component applications in informal settlements and substandard buildings (residential and non-residential) to cater to the fire safety awareness needs of men, women, and children in fire risk settings.

As a result of lessons learnt gathered from soft component roll-out in 2017, FPPR training developed for informal settlements was redesigned to cater to the individual capacity building needs of men, women and children, respectively. In early 2018, fire safety implementing partners in the Beqaa developed the FPPR Gender Focused Training. The gender focused training tailors key fire messages found most prominent to each gender, highlights of which include:

- Male focused: capacity building focused on fire breaks, evacuation drills, and how to use the FFKs
- Female focused: capacity building focused on household level hazards & risks (cooking oil fires, household level electrical fires, responding to burns and scolds, and how to use FEs)
- Child-Friendly: incorporates all key fire messaging, catered to suit child audiences.

[FPPR - Gender Focused - Field Tools](#)

All household (SSB) / community (IS) members (men, women and children) should be targeted for fire safety awareness, and subject to the soft components of fire safety activities to decrease the tendency of fire outbreaks and ensure most vulnerable household members are accounted for and supported. The soft component of fire safety activities should be implemented prior to the distribution of the firefighting kits

¹⁵ *SCI Fire Risk Reduction Assessment of Vulnerable Displaced Syrian Populations and Host Community in Lebanon*

(FFKs), in which the head of the household (preferably) is trained on how to operate the main items of the FFKs, in the presence of the household members (preferably).

All households household (SSB) / community (IS) members (men, women and children) should be made aware of the location and operation of firefighting kits, and should have sufficient knowledge on the dangers of not complying with standard safety procedures in the case of an outbreak. Affixed within the annexes of this document are the Hazard Walk document, SSB Hazard checklist, and Fire Leaflet.

3.3.1. Soft Component – Male Focused Approach

The community level – male focused approach, caters to strengthening preparedness, response and resilience of vulnerable communities to fire risks through capacitating (men) on the following key community level fire messages:

1. Community Level – Male Focused Approach

1.1. ITS Hazard Walk: This approach is guided by the Hazard Walk, a guidance note on how to conduct a hazard walk to identify “community level” hazards and risks, how to conduct the awareness session to the IS population (male focused session), and materials required for practical demonstrations. The hazard walk should include Shaweesh, male community members and, if identified, community firefighting teams / fire focal points.

1.2. Identifying Hazards and Risks: as described in section 3.1 of this document, the below highlights key hazards on a IS community level. For this approach, implementing partners should allow community members to identify hazards, risks and corresponding mitigation measures. The below are most predominant hazards in vulnerable settings:

- *Electrical Wiring*: one of the most common causes of fire outbreaks recorded in IS in Lebanon. Restructuring of electric cables it outside the scope of this document, and thus humanitarian agencies should advise on corresponding mitigation measures¹⁶ (section 3.1).
- *Burning of wastes / surrounding foliage*: raising awareness of all community members on the risks burning of dry wastes and foliage near tents. Humanitarian agencies must advocate for sorting, storing dry wastes and foliage in sealed waste containers.

1.3. Fire Breaks and FFKs:

- *Training on FFKs (fire extinguishers)*: it is preferred that this training session compliment the distribution of FFKs in IS. Fire extinguishers are generally used to contain / extinguish small fires

¹⁶ UNHCR – SCI Fire Safety Tools & Resources /

before they spread, and so audiences include all community members. Corresponding training and distribution can be found on the online platform¹⁷.

- *Fire Break Techniques*: audiences should be capacitated on how to use the FFK items (fire hooks and beaters) to create a fire break during a fire outbreak, or smother flammable material surrounding / inside of shelters.
- *Fire Loading Materials / Minimal Spacing*: assembly of shelters in IS are the responsibility of the Shaveesh and men in the community. Training should focus on raising awareness on ad hoc assembly of tents (made of wood and plastic) at minimal spacing creates fire loading structures that have the potential to wipe out tens of tents by the hour.
- *Firefighting training*: Training can be held by shelter field staff or local partners that have been capacitated on fire safety activities. The soft component to the training is annexed (Annex 3 & 4 pertaining to training manual and fire safety leaflet). As in the case of residential and non-residential buildings, and in any intervention that includes preventing risks of harm, it is imperative that women and children receive the training since they constitute a high percentage of vulnerable persons.

3.3.2. Soft Component – Female Focused Approach

The audience of this approach are females within vulnerable communities. Main supporting documents for this subsection are the 'SSB Hazard Checklist' (includes majority list of fire hazards and risks most commonly found in the household) and the 'Fire Leaflet' (developed by UNHCR, SCI and Medair, incorporates visual / text content on key fire safety messages), household level focus. For interventions in SSBs, community level focus includes quick hazard walks (external / internal) to the buildings. Hazards identified in SSBs should be communicated to landlords and beneficiaries.

2. Household Level – Female Focused Approach

2.1. SSB Hazard Checklist: the checklist includes a list hazards (section 3 of this document) that are commonly identified within households. This facilitates shelter field teams' interventions by allowing to cover all possible hazards in the household, record identified hazards, and document for follow-up visits to ensure households implemented the appropriate mitigation methods.

2.2. Identifying Hazards and Risks: as described in section 3.1 of this document, the below highlights key hazards on a household level to be communicated to females of the household (however, male audiences interested in this approach should be encouraged to participate):

- *Cooking Oil Fires & LPG tanks*: predominantly focused towards women and girls, awareness training should focus on loose clothing around flames, never attempt to extinguish a cooking oil fire using water, remove any flammable material surrounding stove & gas tanks, cooking away from the tent walls(preferably outside tents), and always secure gas tank shut after use.

¹⁷ UNHCR – SCI Fire Safety Tools & Resources / UNHCR Fire Leaflet – LRC Fire Leaflet

- *Electrical Wiring*: ensure bare and faulty wiring is insulated and raised from contact with children / wet surfaces, or direct contact with flammable material (this risk can be mitigated either by using insulation tape or placing insulation material between wires and surfaces).
- *Heating Equipment*: ensure that household members are aware of flammable materials surrounding the equipment, never to use to dry clothes, and extinguish the flames / heat before bedtime (this risk can be mitigated by placing insulation material between the heating equipment and flammable surfaces in direct contact).

2.3. Fire Leaflet: designed by UNHCR / SCI / Medair, in collaboration with the LCD, the fire leaflet helps to educate beneficiaries on FPPR principles and is handed to households to keep.

2.4. Firefighting Items :

- *Firefighting training*: for residential and non-residential buildings, and households in IS, shelter staff can include a brief capacity building on the effective use of the firefighting items distributed (FE, smoke detector, etc.); this is considered the hard component of fire risk mitigation. The soft component incorporates awareness sessions and capacity building, the main tool of which is the Fire Leaflet. Both hard and soft components of fire safety are conducted at both household and community levels. It is imperative that the elderly, persons with disabilities, pregnant women and children receive the training since they constitute a high percentage of vulnerable persons.

3.3.3. Soft Component – Child Friendly Approach

Child Friendly Component includes all soft component material, catered towards a child audience. The most effective method of educating and capacitating children on all components is through the ‘fire story’. This includes a series of pictures, each picture representing a fire risk mitigation component, that shelter staff go through with children front to back and vice versa. The objective of this method of training is informing children on the dangers of fire, and relaying ‘child-friendly’ key fire messages, including:

- What to do if a fire breaks out
- How to call emergency services
- How to effectively communicate locations to emergency services
- How to respond to clothes catching fire
- How to escape Carbon Monoxide Poisoning
- Evacuation drills and safety / assembly zones
- Never playing with lighters, matches or any sources of ignition.

3.4. Prevention and Preparedness – Minimum to Quality Standards

1. Cost Effective Fire-Fighting Kits (FFK)

Below is a list of the most adequate and cost effective items in FFKs to be issued in informal settlements. The list (which includes priority items / equipment) ~~that~~ was created by shelter actors in the Bekaa region who formed a sub-national fire committee to take initiatives to streamline fire safety across implementing agencies, and drafted a set of minimum guidelines drawn up with inputs from different agencies¹⁸.

FFK Item	Description of FFK Items	Prioritization of FFK items
Fire Extinguisher	All fire extinguishers within informal settlements should have stickers / visibility material printed in Arabic in order for users to understand the instructions.	Top Priority
Fire Beaters	Designed for extinguishing fires in rural areas and settlements. Fire beaters are easy to use, highly efficient, and allow for rapid response to halt the expansion of fires.	Top Priority
Fire Hooks	Designed to disassemble structures that have caught fire. Hooks are fairly inexpensive, highly efficient specifically to tents in informal settlements, and help create fire breaks and stop spread of fire to other surrounding tents.	Top Priority
Wiring insulation / tape	this item of the firefighting kit can be rendered an effective intervention especially in the case of IS. It is inexpensive, small and easy to transport, and therefore less likely to be sold. It is a quick and simple mean to decrease fire risk. The only associated disadvantage is the possibility that it may be used for alternative reasons. To be distributed to each HH?	Top Priority
Stove protection	Many fires and fire related injuries start from contact with vinyl and exhaust pipes. This item provides insulation / protection and is less likely to be sold because it is inexpensive and has only one purpose.	Priority
Home information leaflet	The information in the home information leaflet, which has been translated into Arabic makes it suitable for the context, provides excellent fire safety information that has already been presented to the LCD and has been acknowledged as an excellent source. The modality for this item should form part of the shelter and cross-sectorial interventions, and is to be distribution via shelter technicians during visits. One leaflet should be distributed per household.	Top Priority
Fire safety stickers and information posters to be applied to long-	Location of fire extinguishers should be identified clearly on the outside of shelter (avoid connection to “camps”) material. Although stickers are a preferable alternative, they have a tendency to slide off during winter seasons. Designing the information posters with	Top Priority

¹⁸ Bekaa Fire Safety Minimum Standards – SCI 2016

<i>standing materials (fabric of tents)</i>	durability will provide a long-lasting awareness among the displaced population.	
<i>Sandbags and / or rocks to replace tires on rooftop shelters:</i>	Tires are mainly used to weigh roofs down because they can be obtained for free, yet provide additional fire loading and fuel. Sandbags provide extinguishing media and a reduction in fire fuel. The minimum standard for this intervention is 6 bags per shelter.	Top Priority
<i>Shovels</i>	Sends the message that simple sand/dirt is sufficient for fire suppression. However, they might be used for alternative reasons and are potentially expensive.	Not Priority
<i>Buckets</i>	Sends the message that simple sand/dirt is sufficient for fire suppression. However, they might be used for alternative reasons and are potentially expensive.	Not Priority
<i>Gloves</i>	Gloves serve as a good reminder for fire safety in the home. They are also inexpensive, small and easy to transport.	Not Priority
<i>Metal containers with lids for rubbish / waste storage</i>	Although extremely unideal, IS residents tend to burn their wastes, often taking place near tents and public areas. It is highly recommended that metal containers with lids be provided so that wastes can be burned in a container away from flammable structures.	Not Priority

It is important to note that the “not priority” items listed in the above table may be considered as add-ons to each agency’s list of FFK items, in accordance to budget allowance and feasibility. The respective advantages and disadvantages of the additive list in order for each organization to determine which items best suit their interventions.

2. Fire Retardant Specification for material distributed by the Shelter partners

Item	Minimum standards
<u><i>Furniture</i></u>	Furniture and mattresses are made of foams which pyrolyze at low temperatures and burn readily. Mattresses have been issued by NGOs and it is suggested that future support is with a flame retardant mattress conforming to BS7177:2008+A1:2011.
<u><i>Plastic sheeting</i></u>	REINFORCED PLASTIC TARPAULIN – UNHCR item number 02617 (sheet 4x5 m). Flame retardant under Pass CPAI84 (section 6) with maximum 10s after flame average and maximum 30s after flame per test piece. Ageing under ISO 4892-2, type A, 360 hours.

<u>Insulation kits</u>	Structure : Alu foil/XPE foam 8mm/PE white anti-flamming film- Dimension : 1,20m width and roll of 15ml"
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3. Prevention of the misuse of firefighting kits

- Holding the whole community accountable is essential for preserving fire safety materials in the field, this could be done through:
 - Dissemination of success stories for other sites that used FE and survived a fire.
 - Mobilization of community monitors that ensure FE are still in place, away from children but still easy to reach, ready to use, and inform the community a month in advance to replace soon to be expired extinguishers.
 - Spot checks by staff from time to time is also recommended.
 - Training community members to teach children on the dangers and consequences of touching the fire kits, and placing child locks and making the F-kits child friendly and difficult to access / use unless done by a trained adult, thus prevent children from touching the kits.
 - Including Fire stands and lockable boxes in IS to provide security and protection of the fire prevention material from being stolen, damaged, or used for other than its purpose, and making the F-kits easily spotted and accessible, increasing the response rate to fire outbreaks.

4. Response

Fire risk response should target all community / household members (men, women and children), and should account for the most vulnerable populations (elderly, persons with disabilities, pregnant women, and children). This subsection describes the response techniques in case of fire outbreaks in IS, Residential and Non-residential SSB.

4.1. Informal Settlements - Community Firefighting Teams

Unique to IS, it is recommended for humanitarian agencies to encourage the development of community firefighting teams. The objective is to train community based firefighting teams to enable and capacitate them to respond to fires on the local level, and advocate for fire safety within the sites. This will result in improved fire safety and awareness, and reduced fires and injuries. The team should be comprised of men and women¹⁹, and where appropriate shaweesh, and should be responsible for promoting fire safety, FE training, and maintaining fire points and signage.

¹⁹ SCI Fire Incident Report – July 2017 – “Upon investigation of the camp fires in Qab Elias and Bar Elias in early July and through direct questioning of shaweesh it was understood that the community views women as important community members especially in the case of preventing and responding to fire.”

An efficient mechanism for the induction of both community firefighting teams and training on field (as per lessons learned and developed best practices in Lebanon to date) should consist of the below:

1. Focal points for fire safety related activities should be identified and designated. Field staff should set a meeting with the committee and/ or volunteer residents in the sites with men, women and children to discuss fire safety risks and hazards through:
 - Community discussions on fire safety hazards and risks refugees face in their daily lives
 - Identifying hazards through a “Hazard Walk” in all the site to detect fire risks inside and outside of tents.
 - Propose assembly point/s (safety zones) in case of a fire outbreak and ensure children are know where assembly zones are and more importantly in the case the tent catches fire to NEVER RETURN TO THE TENT.
 - Resume meeting and list action points on particular risks in the site and commit deadlines for implementing mitigation measures to reduce fire risks.

Firefighting training: Once firefighting teams are created, the community members who have received training on both the soft and hard components and have become capacitated to ensure preventative measures are being taken, community members are fully capacitated to properly respond to a fire, and FFKs are neither damaged nor sold. This gives the teams a sense of ownership on the general safety of the community, and allows sustainability of the intervention.

4.2. Response – Key Fire Safety Messages

It is important to note that response for different (community / household) level hazards have been referred to and discussed in section 3 of this document (referred to as mitigation measures). The below responses are generally suited for fire incidents, and best practices in the case of fire outbreaks. The key messages have also been developed for the child-friendly approach.

4.2.1. Fire Exiting (evacuation strategy)

- Exiting the shelter: beneficiaries must exit the shelter as soon as a fire breaks out. If feasible, important documentation (registration documents, etc.) as well as valuable possessions (money, gold, etc.) must be stored in a ‘grab bag’ that can be easily retrieved upon exiting the shelter.
- Children & vulnerable first, firefighting later: it is imperative that parents and caregivers evacuate children, from the shelter, before attempting to fight the fire. Children should also be very aware never to return to the shelter once evacuated.
- Avoiding Carbon Monoxide poisoning: all household members must be made very aware of the dangers and fatalities caused by carbon monoxide poisoning. In the case of smoke spread

throughout the household, members must be trained on 'getting low' (as to avoid severe smoke inhalation), and stay low until they have exited the shelter.

- Creation of assembly points (safe zones): once children and household members have evacuated the tent, assembly points must be created for safe zones.

4.2.2. Calling Help Services

- How to call the LCD / LRC: this is mainly highlighted during the child friendly approach, and as a key recommendation from Module 2 of the Fire Safety Workshop, children and other beneficiaries not familiar with smart phones should be made aware of the ease of making 'emergency calls' without accessing the hardware. The numbers of the LCD & LRC are left within the shelters visited (written down on a piece of paper and given to the head of the household could suffice if visibility material is not distributed).
- How to communicate location to LCD / LRC: this key message focuses on ensuring that beneficiaries (especially children through the integrated child friendly approach) know detailed information to iterate to help services in the case of an emergency. Input from the LRC & LCD included difficulty in pinpointing certain locations (Online GPS in rural areas of the country are not completely and always accurate) and thus added information (for example, identifying a landmark within the area) would decrease response time.

4.2.3. How to Extinguish a Fire

- Preliminary actions: during site visits (whether to informal settlements, residential or non-residential buildings), beneficiaries should be briefed on preliminary and critical steps in the case of a fire outbreak. This includes cutting off all electric power within the shelter once a fire is identified. Next steps include identifying the type of fire and combustible material (oil fire, gas fire, electric fire, etc.) each type of fire has a specific distinguishing method, all of which are covered with the 'Fire Science' section of the online SCI – Fire Safety Tools & Resources OneDrive.
- Creation of fire breaks (Informal Settlements): this key message is designed specifically for informal settlement settings, however, knowledge on the effectiveness of fire breaks' can be applied in all fire related situations. The objective of a fire break is 1) to starve the development of the fire by removing the fuel source, and 2) to be able to distinguish the fire at a practical level (the more the flames rise, the more likely other tents will quickly catch fire due to radiation and convection). The implementation of fire breaks is taking down the second standing tent from the tent that has already caught fire.

4.2.4. How to Respond to ...

- People catching fire: it is imperative that beneficiaries and host communities understand the dangers and long-term impacts of improper response to a person catching fire. The correct response is to teach beneficiaries how to 'stop, drop and roll'. Once the victim is on ground level, gentle pats onto the body completely extinguish the heat and flames. It is also important

that the target audience understand never to remove the clothing off a fire victim, due to the risk of peeling off burnt skin in the process.

- Burns and scalds: depending on the level of the burn / scald injury, beneficiaries are advised to run cool water on and around the area of the injury for a duration of 20 mins. The injury should then be covered in an impermeable material (for example, cling film) and rushed to medical attention.

5. Post Monitoring, Evaluation and Incident Reporting

Post fire monitoring and evaluation may be conducted through MEAL activities on quarterly intervals. The objective of monitoring and evaluation is to assess the impact on the knowledge and capacity of the beneficiaries with regards to the hard and soft component training conducted during the prevention and preparedness phases of this guideline. It is also used to ensure that FFEs have not been sold, have not been damaged, and are fully operational.

Annex is the Post Distribution Monitoring (PDM) resident survey provided by NRC that is being utilized at field level and catered for residents in informal settlements. Similar assessments can be used for interventions in residential and non-residential buildings, including the Pre-KAP assessment (shared in the materials along with this guideline).

Monitoring cycles vary according to each partner's MEAL quarterly assessment.

Other soft component material of fire safety activities include PDM & KAP surveys, and baseline assessments, which allow organizations to capture the level of knowledge and existing practices of fire safety at the household level.

5.1. Post Distribution Monitoring & Refilling Cycles

It is the responsibility of operating humanitarian agencies for the refilling / replacing of damaged / used fire extinguishers in IS. It is the responsibility of the landlords for the refilling / replacing damaged / used fire extinguishers in SSB. Smoke detectors / batteries are the responsibility of the tenant to renew. There are two very important tools to consider in this section:

- Fire Extinguisher Sticker: includes manufacturing date, date of refilling, date of inspection and date of next inspection.
- Fire Extinguisher Leaflet: raises awareness on how (beneficiaries) identify if fire extinguishers are empty / damaged or not valid for use.

5.2. Evaluation of Fire Safety Programming

1. It is recommended to conduct a baseline assessment during its introductory shelter visits. A section on fire awareness at the SSB household level is designated within the shelter baseline assessment to capture the basic knowledge and awareness of beneficiaries regarding fire safety. Baseline assessments are conducted for minor repairs and rehabilitation shelter interventions of SSBs.
2. It is also recommended to include (KAP) survey during introductory shelter visits to understand the level of community knowledge and identify gaps and needs.

Upon introductory visits, shelter teams can conduct baseline assessments and pre-KAP surveys in order to assess the level of success of the interventions and the satisfaction of beneficiaries, once all activities have been conducted the shelter team conduct end line assessments and post-KAP surveys.

5.3. Internal Reporting – Fire Incidents Data

The below are the indicators used to collect required data for post fire incidents in IS. :

- P-Codes (of the IS location)P-Code Name
- District Cadastre
- Latitude coordinates
- Longitude coordinates
- Cause of the fire (electrical, gas tank, etc.)
- Number of Tents totally destroyed
- Number of Tents partially destroyed
- Number of Injuries (disaggregated age / gender)
- Number of Fatalities (disaggregated age / gender)
- LCD response time

It is recommended to use a three phased modality for post fire monitoring which include desk research, field visit questions and post visit actions. The steps are conducted as follows:

1. Desk Research:
 - Who is the fire focal point in the settlement? Contact him/her to set up a visit.
2. First visit Questions:
 - When/where/how the fire happened? What allowed the fire to spread? (ask neighbours, too)
 - Are all FEs still efficient? Check all FEs (pressure, hose, holes, expiry date, stickers)
 - a) Do all refugees know how to use them?
 - b) Do they know where the FEs are located?
3. Retrain refugees: use the fire as an example for all parts of training, and redistribute FEs as needed (swap old for new; record numbers of collected and distributed FEs)

Once the field visit has been conducted, a follow up with the focal point is done about his/her role and what further support is required. Additional questions for the focal point include:

- How confident does he/she feel as a focal point?
- Should a committee be set up? (option for additional support)

The below are the indicators used to collect required data for tracking FE distribution in IS. This tool can also be used to capture information regarding distributed FE's in residential and non-residential buildings and their common areas. Key indicators include:

4. P-Codes (of the IS location)P-Code Name
5. District Cadastre
6. Latitude coordinates
7. Longitude coordinates
8. Status (Active, Inactive)
9. Number of Tents
10. Number of Individuals
11. Number of Grouped Tents
12. Date of FE's distributed
13. Number of FE's distributed
14. Expiry date of FE's distributed

6. Annexes

- 6.1. [Annex 1 – Consensus of Fires in Informal Settlements, Residential and Non-Residential Buildings in Lebanon](#)
- 6.2. [Annex 2 – Fire Safety Training Plan](#)
- 6.3. [Annex 3 – FPPR Gender Focused Training Procedure & Checklist](#)
- 6.4. [Annex 4.A – UNHCR Fire Leaflets](#) & [Annex 4.B – LRC Fire Leaflets](#)
- 6.5. [Annex 5 – Knowledge, Attitudes and Practices \(KAP\) Survey](#)
- 6.6. [Annex 6 – Post Distribution Monitoring \(PDM\) Survey](#)
- 6.7. [Annex 7 – Fire Incident Reporting Tool](#)
- 6.8. [Annex 8 – Fire Extinguisher Leaflet](#)
- 6.9. [Annex 9 – Fire Extinguisher Sticker](#)