Managing Fire Safety in Camps

CCCM Annual Global Meeting 2020: Practitioner's Day

Kindling

Save the Children

Maiduguri, Nigeria 2019. Photo Credit: Jessica Mamo, IOM

Agenda

- Fire risk and fire safety in humanitarian contexts
- Case study: Inter-agency coordination for fire risk reduction in Lebanon
- Quick insights from research into fire performance of plastic tarpaulins
- Opportunities to develop fire safety best practices through inter-agency and inter-cluster coordination

Bangalore, India 2019
Photo credit: Danielle Antonellis

Global estimates of annual lives lost from fire are up to 300,000...

Kathmandu Valley, Nepal 2016
Photo credit: Danielle Antonellis

…that means fire kills up to **5 times** more people than natural hazard related disasters (annual averages)

Photo Credit: Save the Children Lebanon
What is the **impact of fire** in humanitarian settings?

Camp in north east Nigeria
© 2018 European Union (photo by Samuel Ochai)

“Most of the local people cook their meals in the open space outside their tents during the dry season, and when the wind blows toward the direction, the shelters are easily razed by fire.”

– Yabawa Kolo, Chairperson of Borno State Emergency Agency

Camp in north east Nigeria
© 2018 European Union (photo by Samuel Ochai)

Mal Yusuf Gulumbo Mohammed
April 16 ·

Happening Now:
Today the 16/04/2020 fire outbreaks at Ngala IS Camp burned 1250 households, unconfirmed. Fourteen confirmed dead, 7 critical injury and 8 minor injuries.

Still on evacuation and assessment is going on.

115 50 Comments 89 Shares

Like Comment Share

Fire ravages Europe's largest migrant camp on Lesbos

By Elinda Labropoulou, Chris Liakos, Stephanie Halasz and Tamara Qiblawi, CNN

Updated 5:56 AM ET, Thu September 10, 2020

Europe's largest migrant camp destroyed by fire

Severe floods leave more than 100 dead in Vietnam

India sees increase in child trafficking amid pandemic

Image-based abuse has soared during the pandemic

Bizarre Egy police cade graduation

Athens, Greece (CNN) — Europe's largest migrant camp, Moria, has been devastated by massive fires that broke out early Wednesday at the overcrowded site on Greece's Lesbos island.

Greek authorities believe that the fires were started by Moria camp residents expressing "dissatisfaction" with coronavirus-related lockdown measures. The camp has been under lockdown after 35 people tested positive for Covid-19 earlier this week.

More from CNN

Smerconish: could rejected mail-in ballots affect election...

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BMT AllergyGuard

Easy to Clean

Discover The Window Screen That Blocks 99.9% Of Pollen ...

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Oakland, USA

Bekaa Valley, Lebanon

Idlib, Syria

Cox's Bazar, Bangladesh

Maiduguri, Nigeria

Kampala, Uganda (2005)

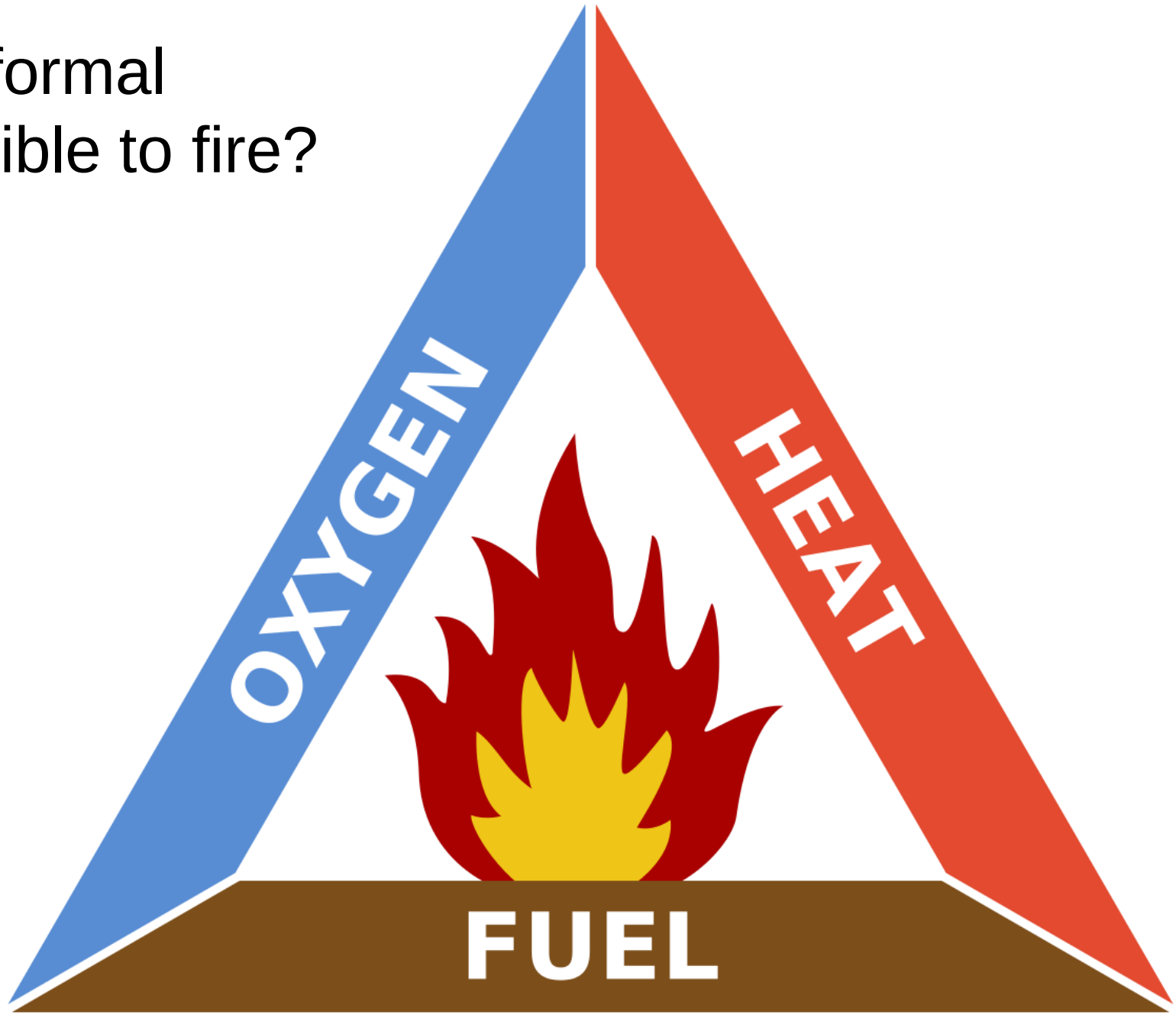
Sao Paulo, Brazil

Cape Town, South Africa

Who is most vulnerable to fire?

Photo credit: Pollinate Group

Why are camps and informal settlements so susceptible to fire?



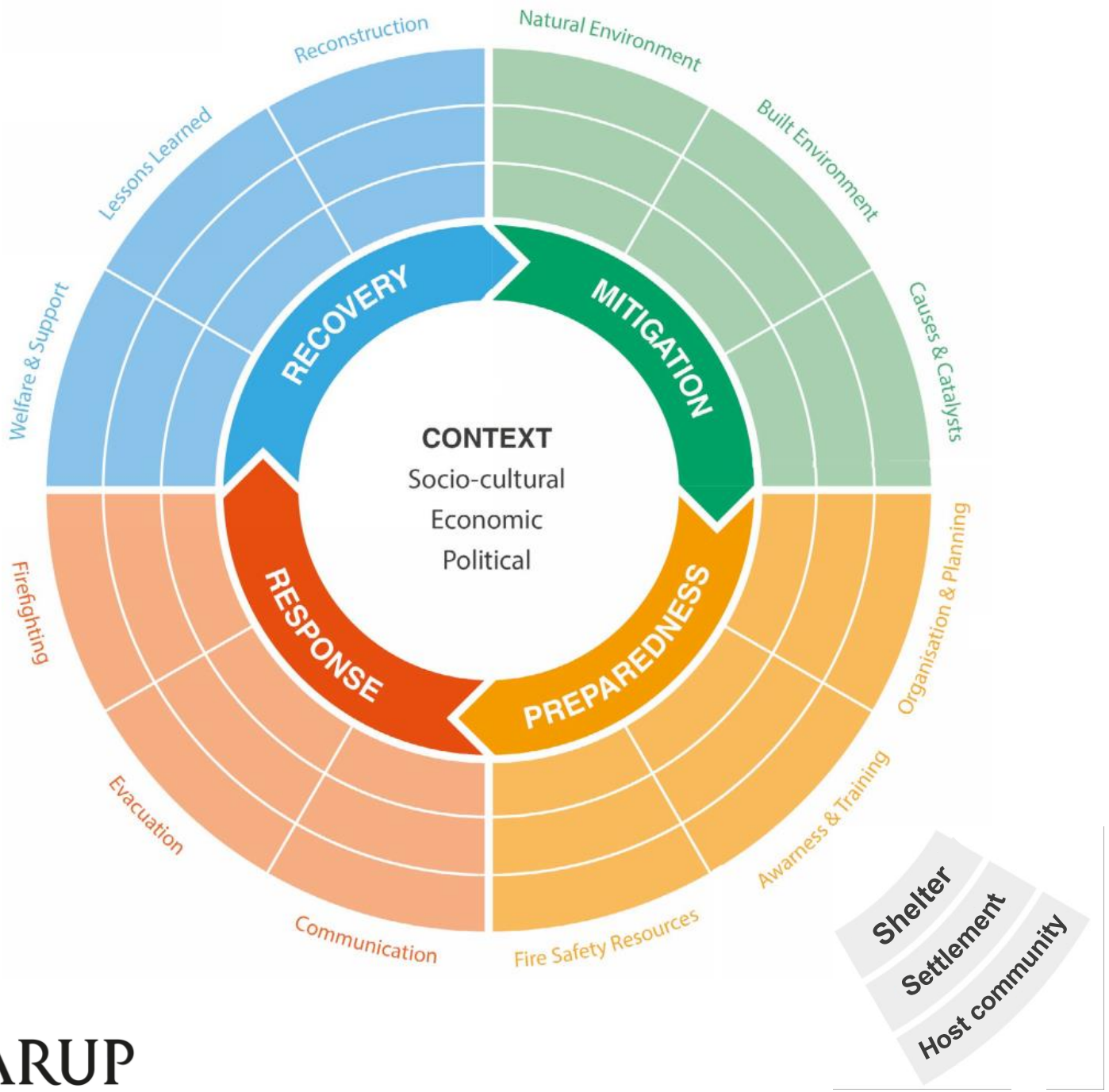
Prevention – Safeguarding against the outbreak of fire and/or limiting its effects

Detection and Communication – Investigating and discovering of fire followed by informing occupants and the fire service

Occupant Protection – Facilitating occupant avoidance of and escape from the effects of fire

Containment – Limiting of fire and all of its consequences to as small an area as possible

Extinguishment – Suppressing of fire and protecting of the surrounding environment.



	Natural Environment	Built Environment	Causes & Catalysts
	Fire risk can be greatly influenced by natural conditions. For example, arid and hot climates present additional risks over wetter and cooler environments in terms of ignition and readily burnable fuel sources (e.g. dry vegetation). Informal settlements built at the Wildland-Urban Interface (i.e. where homes are built near or among lands prone to wildland fire) have an increased fire risk. Weather and topography can influence fire behaviour, particularly the direction and rate of fire spread. Fire spread could be exacerbated by strong winds or the position of settlements on hillsides or sloping sites. Other natural disasters, such as flooding, can impact fire escape routes or firefighting access routes, increasing a community's vulnerability to fire.	Construction typologies of informal settlements vary widely depending on the local context and availability of suitable construction materials. Combustible construction materials (e.g. timber) and linings (e.g. plastic sheeting) can increase both the likelihood and severity of fires. Poor building stability can exacerbate fire spread through an informal settlement. Limited space is a common issue in informal settlements, resulting in minimal separation distances between dwellings. Fire spread between dwellings and through entire settlements is therefore common. Limited access through settlements is also common causing significant challenges with evacuation and firefighting.	The cause of a fire is the way a fire physically starts (e.g. ignition source). Human behaviours that may influence the likelihood or severity of fire are considered catalysts to fire risk. Fires in informal settlements are most commonly caused by open flame sources (for cooking, heating, and lighting) and overloaded or poorly maintained (and often illegal) electrical connections. Fire risk may change with seasons. For example, an increased reliance on heating devices during cold seasons can increase fire risk. Examples of catalysts include children playing with fire, alcohol intoxication and smoking. Fire safety training can help create awareness of the risks associated with these types of behaviours and activities (see Preparedness). The above description of catalysts relates to accidental fires. Arson, the human act of maliciously and deliberately starting a fire is, in fact, a cause of fire.
Household	- Remove dry vegetation from around and between dwellings - Avoid building in areas where access for firefighting vehicles may be challenging, such as in areas prone to flooding - Avoid building on steep hillsides, where fire may spread rapidly upwards	- Use construction materials (structure and linings) which do not propagate rapid fire growth (e.g. avoid plastic sheet walls and roof coverings) - Provide multiple escape routes from each dwelling - Maximise separation distance to adjacent dwellings	- Replace open flame cooking, lighting and heating appliances with safer alternatives - Practice safe storage of fuels used for cooking, lighting, and heating - Use surge protectors, circuit breakers, insulated electrical wiring and equipment with fuses - Store waste safely and remove waste regularly
		- Establish and maintain fire breaks, evacuation routes, and vehicle access routes - Maximise separation distance between dwellings and minimise density of dwellings - Avoid settlement development near high hazard areas, such as landfills and industrial premises	- Organise refuse collection services where not officially provided
		- Implement policies relating to land tenure and land use - Implement policies that allow for upgrading of informal settlements and the use of robust building materials - Commit to city planning which promotes and supports the use of appropriate building materials and fire safety principles for dwelling and settlement design	- Provide safe electricity - Provide refuse collection - Subsidize cost of safer cooking, lighting and heating appliances and/or promote market-driven distribution to communities - Implement standards for safer cooking, lighting and heating appliances and enforce regulations to help prevent unsafe appliances entering the marketplace

SCAN ME

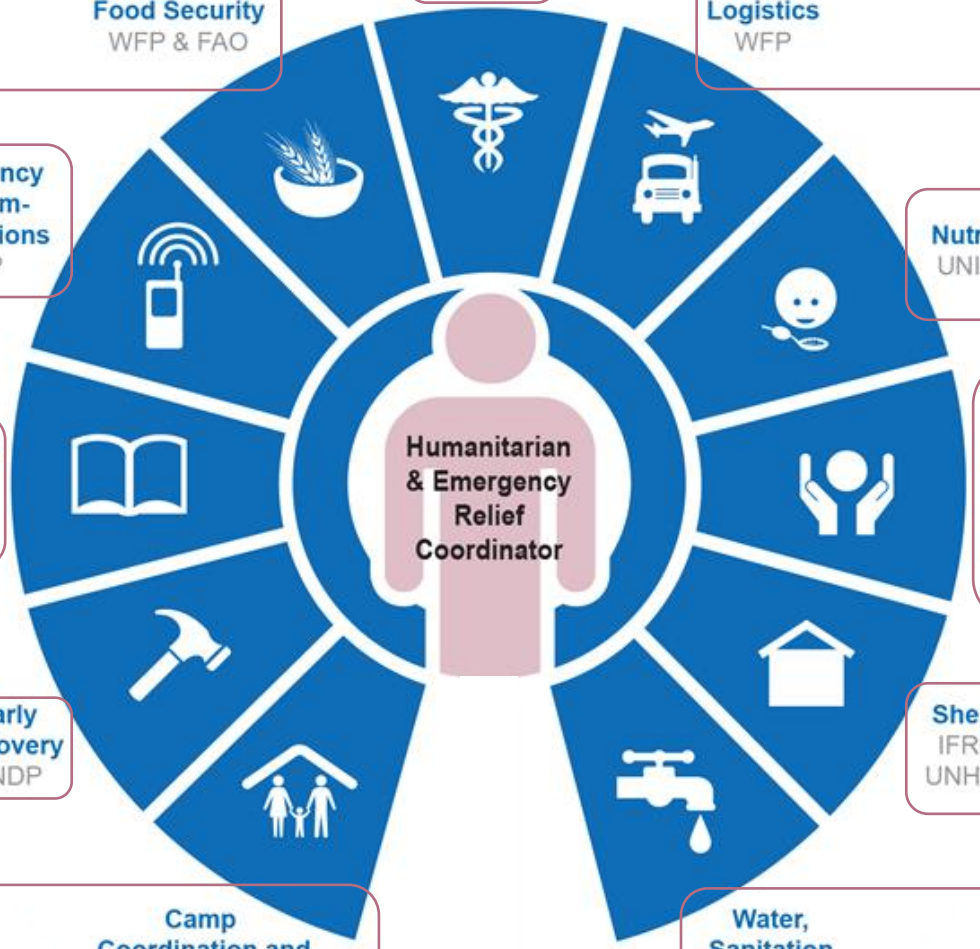
ARUP

Location and settlement planning

Fire Safety: **Fire risk assessments should inform site planning.** Include 30-metre firebreaks every 300 metres in built-up areas in camp settings. The space between buildings should be at least 2 metres; ideally it should be double the building height to prevent collapsing structures from touching adjacent buildings.

Consider local cooking and heating practices (such as type of stoves and preferred location). Consider providing safe stoves, fire safety equipment and awareness training to residents. Prefer fire-resistant construction materials and household items. Inform residents (including those facing mobility or accessibility barriers) about fire prevention, management and evacuation plans.

What is the current state of fire safety knowledge and practice in the humanitarian sector?



Data on fire deaths and injuries, treatment of fire injuries & protection of healthcare facilities

Health
WHO

Protection of livelihoods, market fire safety, protection of food store warehouses

Food Security
WFP & FAO

Logistics
WFP

Plastic sheeting and other NFIs, fire safety product distribution

Emergency communications and coordination

Emergency Telecom-munications
WFP

Nutrition
UNICEF

Cooking methods and intersection of fire risk with cooking fuels (firewood, gas, etc.)

Fire safety education and protection of schools

Education
UNICEF & Save the Children

Protection
UNHCR

Fire is a protection issue and like other disasters, a fire can cause and worsen protection risks such as child protection and GBV issues. Certain groups are exposed to higher fire risks daily (e.g. women cooking)

Fire undermines early recovery and fire safety supports early recovery

Early Recovery
UNDP

Shelter
IFRC[1]/ UNHCR[2]

Settlement planning, shelter construction materials & methods, NFIs, fuel and appliances for cooking, heating, and lighting

Inter-cluster coordination for fire safety programming, linkages to emergency services, fire suppression, site layout/ egress, appointment/ election of wardens, drills, waste management

Camp Coordination and Camp Management
IOM[1]/UNHCR[2]

Water, Sanitation and Hygiene
UNICEF

Water for community firefighting & municipal emergency response, waste management, fire resistant sanitation corridors as fire breaks

FIRE RISK ASSESSMENT AND RESPONSE: LEBANON

Inter-Agency Coordination Lebanon

Situation → Response

1,801 fires in residential and non-residential buildings combined

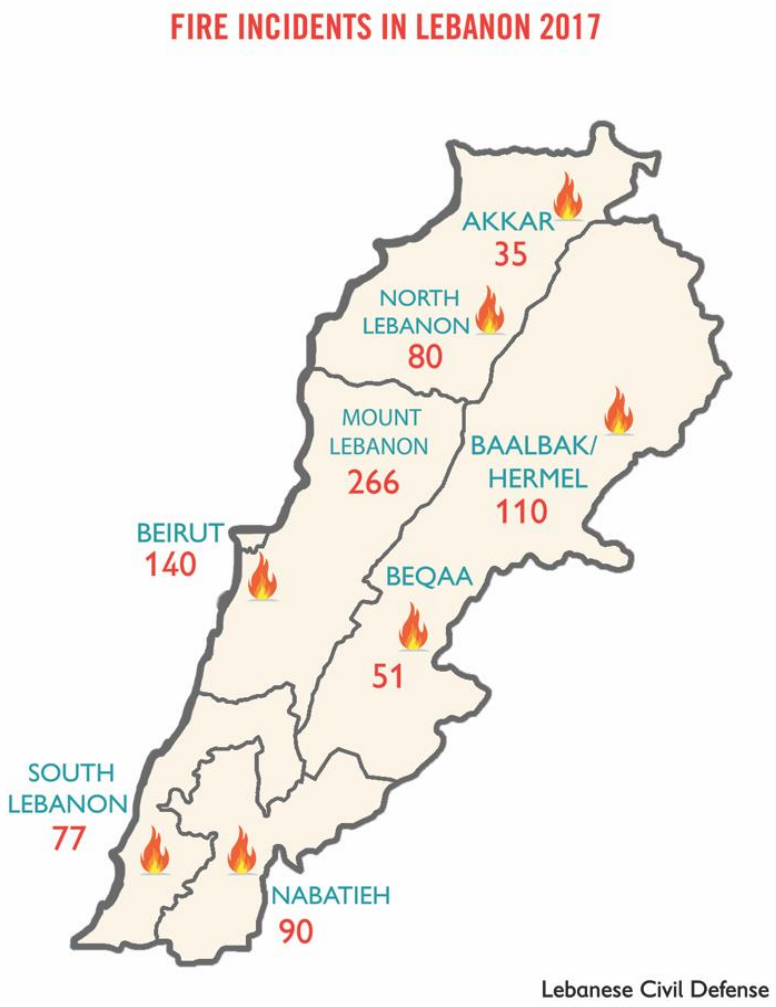
302 fires in informal tented settlements: more than 300 tents completely or partially destroyed.

2016 loss of 21 lives

14 of which were Children under the age of 5

2017 loss of 14 lives

12 of which were Children under the age of 5



2016

Save the Children Fire Risk Reduction Assessment for Refugee and Vulnerable Host Communities in Lebanon

2017

- Temporary Technical Committee (TTC 5) for Fire Prevention, Preparedness and Response in Informal Settlements, and Buildings (FPPR)
- Beqaa Fire Safety Workshop for NGO, UN, Lebanese Red Cross and Lebanese Civil Defense
- Harmonized Fire Safety Tools & Resources online training package

2018

Development of FPPR National Guidelines and consequential elements

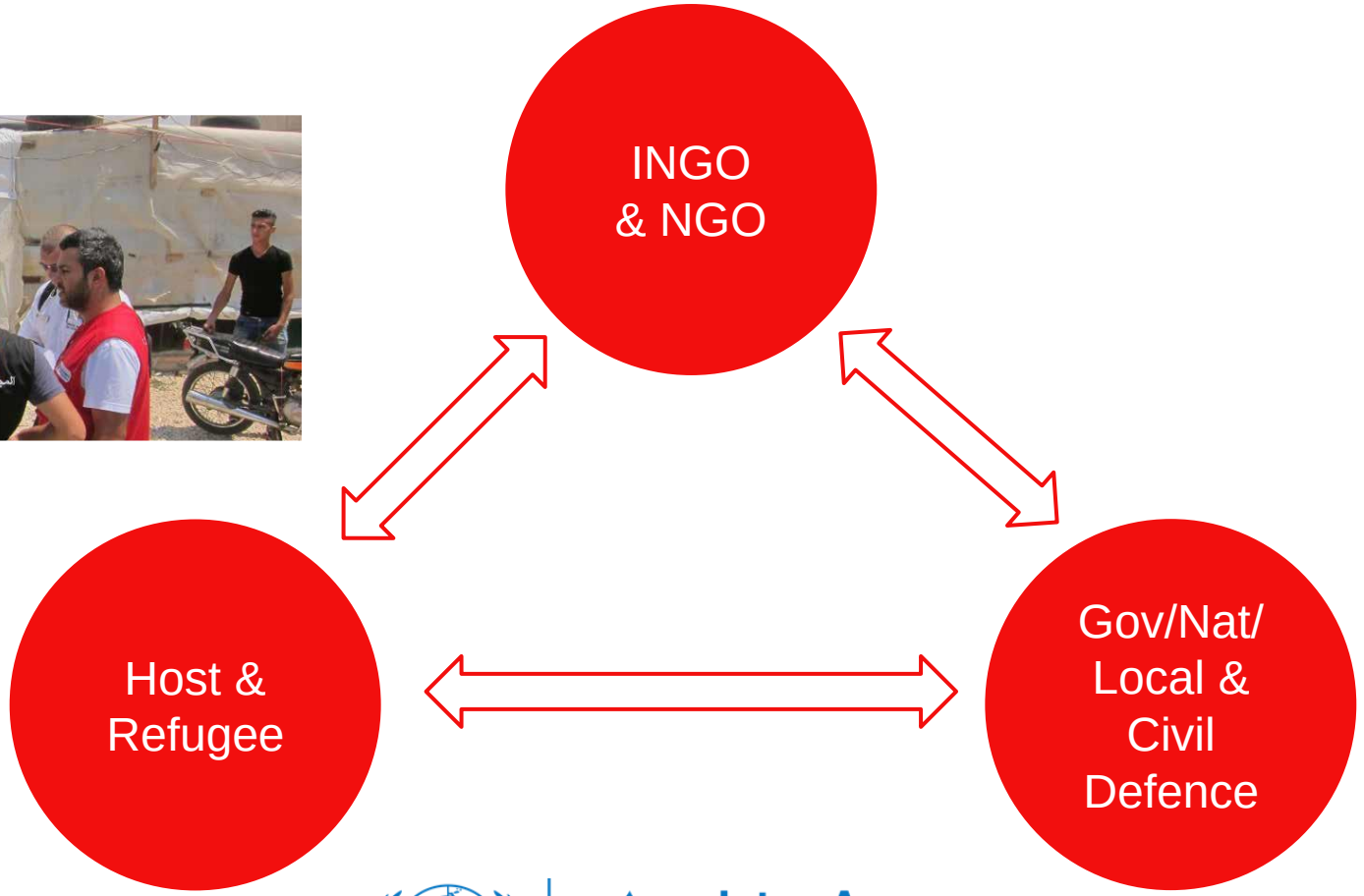
Development of the **Beqaa Fire Risk Mitigation** in IS & SSB – **SOP**

Save the Children

FPPR National Guidelines

Multiple stakeholder approach

1 **Coordination**



Inter-Agency Coordination Lebanon

Save the Children

FPPR National Guidelines
Multiple stakeholder approach

2 **Prevention and Preparedness: Strategy**

1. Strategy: Fire Risk Mitigation SOP and Standards
2. Informal Settlements ***Firefighting Kit Distribution Criteria***
3. Informal Settlements ***Firebreak Technique***

Structure afire	Adjacent Structure	Structure to dissemble

Wind direction

4. Buildings ***Fire Fighting and Detection kit***
5. Community engagement ***Gender focussed Approach***

Save the Children جمعية إنقاذ الطفل

UNHCR The UN Refugee Agency

In case the pressure gauge indicates on the RED color, please retain the fire extinguisher and call the Save The Children hotline 81/700202

In case the fire extinguisher has been used, please retain the fire extinguisher and call the Save The Children hotline 81/700202

Please keep this Fire extinguisher out of direct sunlight and out of reach of children at all times

FPPR National Guidelines
Multiple stakeholder approach

Focused training for men, women, boys & girls

3 Prevention and Preparedness: Training and Awareness

1. **Awareness** of Fire Risk with all communities, responders
2. **Hazard mapping** with communities
3. **Training** Evacuation, Fire wardens

How to use a fire Extinguisher
How to react to cooking oil fires
How to reduce fire risk in the home
How to response to clothes catching fire
How to create a fire break
How to reduce the risk of Carbon Monoxide poisoning
How to treat a burn
Teach Children what to do (raise alarm, use phone, escape, etc)

4. **Frequency of Fire Safety Awareness** sessions, priority focus groups etc

FPPR National Guidelines

Multiple stakeholder approach: Urban and Camp Response

4 Response

	Community Level Approach	Household Level Approach	Child Friendly Approach
Informal Settlements	• Creation of Community Firefighting Teams • Delegating Fire Focal Points • Evacuation Drills • Assembly points / safe zones • Methods of extinguishing a fire • Fire breaks	• SSB Hazard Checklist • Escaping Carbon Monoxide Poisoning • How to extinguish a fire • Accounting for most vulnerable community members	• Community level (over 15 children) • Child Friendly Fire Safety Story Book
Residential and Non-Residential Buildings	• Clearing & Identifying Escape Routes • Calling Emergency Services		• Household level (<10 children) • Child Friendly Fire Safety Story Book

FPPR National Guidelines
Multiple stakeholder approach

5 Post Monitoring, Evaluation and Incident Reporting

1. Monitoring

- Post distribution of kits, usage and effectiveness
- Fire Extinguisher testing and refilling cycles
- Improved materials for reducing fire risk

2. Evaluation of fire safety pre / post KAP

3. Internal Reporting – fire incidents data

- # of tents totally / partially destroyed
- # of casualties (injuries / fatalities)
- disaggregation (age / gender)
- Causes of fire (electrical, cooking, heating equipment, etc.)

UK
UK
UK
UK
UK

Quick insights from research into fire performance of plastic tarpaulins

- The ability to retard the spread of fire through the addition of chemical compounds during the production of the sheeting, might possibly make some contribution to fire-safety in camps, but should not be seen as being a complete solution unto itself
- Too much attention paid to the narrow question of fire-retardancy in plastic sheeting might divert attention and resources from the larger question of fire-safety in camps overall
- There has been too little evidence which could currently provide confident guidance on any potential trade-offs in terms of all of the other aspects of the performance of the sheeting, not least of which: the environmental impact; the overall durability of the sheeting; and aspects specific to the logistics of the plastic-sheeting distribution

Quick insights from research into fire performance of plastic tarpaulins (cont'd)

- Producers of plastic sheeting refuse to disclose either the precise chemical compounds which they use, or the dosage levels to which those compounds are added to the basic plastic. This has required humanitarian shelter technical standards for plastic sheeting, to be framed exclusively in terms of 'performance' rather than in terms of 'content'
- The testing of plastic sheeting is challenged by the fact that those tests which are feasible for monitoring in the field may not give the full range of data necessary to understand how whole shelter structures with the plastic sheeting will behave in a fire, whilst those tests which focus upon whole shelter structures are the least likely to be undertaken at the field level.

Potential activities to improve fire safety in humanitarian settings:

- Research the current state of fire safety in the humanitarian sector (collect existing evidence and insights from sector and identify gaps)
- Develop Inter-Agency Coordination Guidelines for Fire Safety
- Develop fire safety training, such as mobile training aids for field staff
- Develop Fire Safety Toolkit with methodologies and tools (e.g. for risk assessments), fire safety guidance, case studies, training materials, advocacy materials, etc.
- Integration of fire safety considerations into existing guidance and tools used by the various clusters
- Identify future research and development needs

Our goal is to develop best practice to reduce deaths, injuries and losses from fire in humanitarian contexts through inter-agency and inter-cluster coordination

Photo credit: EC/ECHO/Dina Baslan / flickr

Photo credit: Save the Children Lebanon

We want to hear from you!

Please take 5 minutes to respond to our survey on fire safety in humanitarian settings. You can also sign up for email updates and express interest to get involved through this link!

https://www.surveymonkey.com/r/8V8Y77H

Thank you for joining us today!

Kindling
FIRE SAFETY FOR ALL

Save the Children

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