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International Federation
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Shelter Research Unit
Innovating **shelter**

German
Red
Cross

Forecast-based Financing

Shelter Early Action Guidebook

Contents

GERMAN RED CROSS
SHELTER EARLY ACTION GUIDEBOOK

Introduction

Developing shelter early actions for use based on a forecast

Climate change and extreme weather events exert deep and cross-cutting impacts the built urban environment, safety, health and livelihoods. The poor and vulnerable occupants of risk-prone areas suffer most.

Over the past 30 years, natural hazards claimed over 2.5 million lives, primarily in resource poor countries. Regarding health, flooding acutely affects shelter occupants in areas lacking in water and sanitation services, resulting in higher exposure to preventable waterborne illnesses. Whereas, those with limited to no access to cooling or heating mechanisms, suffer from a higher likelihood of heat and cold-related illnesses, and even loss of life.

Shelter quality and location in relation to natural hazards exerts long-lasting impacts on livelihoods and settlements. In lieu of saving in financial institutions, resources are often held in "vulnerable assets", namely housing in urban and livestock in rural areas. Since 1980, according to the World Bank, extreme weather events caused 75 % of asset losses (World Bank, 2016)

Shelter comprises a vital sector of humanitarian assistance. Traditionally, assistance has occurred via an ex-post approach, in the form of relief and recovery after a disaster strikes. Fortunately, in recent years, humanitarian assistance has undergone a shift towards anticipation, rather than reaction. Forecast-based financing combines weather forecasts of extreme events and vulnerability data, cohesive planning and innovative finance mechanisms, to allow for early action. This manual provides an introduction on to how identify, integrate and implement early actions for shelter within a Forecast-based Financing program.

This guidebook is the first of its kind to address Early Actions for Shelter. We recognize this is a living document, and welcome further input, ideas and recommendations for improving the humanitarian outcomes.

Suggestions for improvement are welcome and can be submitted through the FbF website.

Forecast-based Financing aims to reduce the humanitarian impact of extreme weather events by releasing humanitarian funding for pre-agreed early actions based on forecast and risk information. The relevant forecast thresholds that trigger the early actions to reduce humanitarian impact, as well as roles and responsibilities of all involved in implementing the actions are defined in Early Action Protocols.

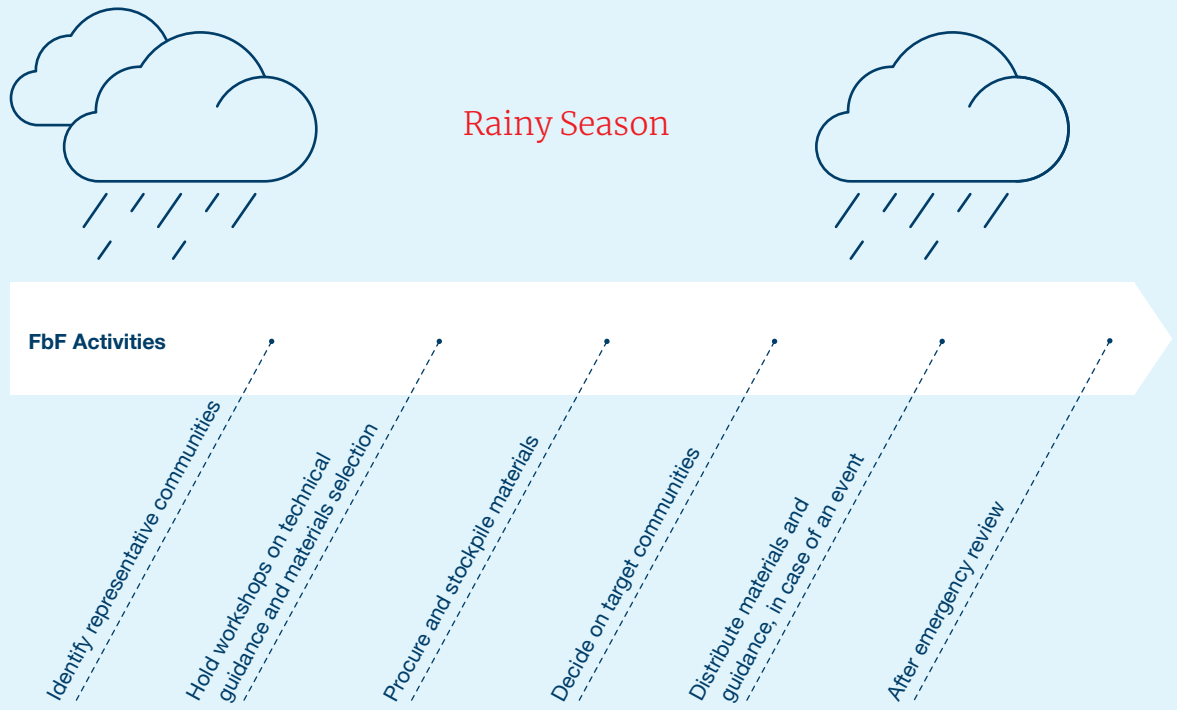
For an FbF mechanism to effectively reduce the impact of disasters, early actions must be chosen carefully based on strong analysis. To do so, FbF teams talk to communities, authorities and experts to gather information on the impact of past events and to get an understanding of relevant vulnerabilities, capacities and risks. In the course of these studies, talks and assessments, one impact that may be highlighted is the damage or destruction of housing and other infrastructure, which has a significant impact on the population. This book aims to provide guidance in the identification and selection of shelter early actions that can reduce this impact and can be implemented in the short time between the forecast and the onset of the event.

The objectives of securing shelter via early actions support families at risk from predictable extreme weather events in their ability to:

- mitigate/avoid damage to shelter
- reduce the loss of assets (through securing and reusing material and shelters that have been secured
- mitigate the risk of families investing in shelter or other assets, without having the effective chance to successfully reduce the impact of the disaster (by providing guidance on what can realistically be done and what cannot be achieved)

In addition, having a safer shelter during an extreme event can ensure, aside from reduced life losses, that families' assets, such as work tools, or household goods, are not lost, and that the families suffer less strain on their budgets, and can move more quickly and securely to recovery.

This Guidebook provides guidance to identify and implement early actions for safer shelter during extreme events. It support strategic and operational humanitarian shelter and cross-cutting coordination, in line with global frameworks (Sendai Framework for Disaster Risk Reduction (Targets directly **A B, C: D, G supporting E F and** Sustainable Development Goals 9, 11 and supports 3, 6, 7,10,) and augments ongoing Disaster Risk Reduction and Disaster Recovery Frameworks, including Build Back Better pre-disaster recovery planning (4b.1, 4b.2).



How this guidebook is framed

The guidance in this book is strongly linked to the guidance available in the FbF Manual. The Manual provides overall guidance on how FbF programmes should be set up and implemented, how EAPs should be developed and early actions identified, prioritised and implemented. EAPs can include early actions by different humanitarian sectors, in order to address different anticipated needs, and reduce different disaster impacts

SHORTLINK

https://manual.forecast-based-financing.org/

This book provides guidance for the Red Cross Red Crescent teams tasked with developing EAPs but is also of relevance to national coordination forums, provincial and municipal authorities, and those involved in disaster-preparedness activities in other humanitarian sectors. This booklet forms one part of a wider range of guidance within the FbF programme.

This guide is divided into two parts. Part A on “General considerations when developing shelter early actions”, that highlights key points to keep in mind in the identification and planning of shelter early actions and provides guidance on how to involve communities. Part B provides guidance on the technical aspects of identifying, selecting and planning shelter early actions per hazard.

Part A

Designing shelter early actions: general considerations for planning and implementation

A 1. General points to consider when identifying and planning shelter early actions

A 1.1. Ensure early actions can be implemented in line with the flexibility imposed by the FbF approach

FbF – as implemented by the RC/RC movement –aims to implement early actions in those locations where the forecast of an extreme event indicates the highest probability of humanitarian impact.

Thus, Early Action Protocols (EAPs) are not developed specifically for pre-identified communities, but rather are typically elaborated at the national level, through cooperative work amongst the Red Cross/Red Crescent movement, national authorities in relevant line ministries and civil defense or emergency-preparedness taskforces, hydro-meteorological services and other key stakeholders. Local governments and organizations can also use the FbF approach to develop an EAP for their own community, using own funds.

With this flexible approach, early actions need to be designed in a way that they can be efficiently implement in those regions region for which the forecasts indicate a high impact and completed in the short window of time between the forecast and the impact of the extreme event. Simultaneously, they must be informed based on local vulnerabilities and capacities of the target population, taking into account the existing ecosystem of response actors. The FbF team must therefore be able to synthesize input from the communities and strategise it accordingly.

Extreme weather events are closely linked to seasonal cycles, and EAPs will also need to be aligned with those cycles – both in terms of implementation, and in terms of updating and review processes.

A 1.2. Standardize material selection with care

One of the main challenges faced in this process is making selections of materials and technical information which will be appropriate over a wide geographic range given that within FbF the intervention communities are only determined once there is a forecast. On the other hand, it is crucial that communities are consulted during the design of early actions, to ensure they are adapted to needs and context, realistic and accepted.

At the same time, the specific forces exerted by high winds or waters upon common construction materials and building designs, are well documented.

Deploying standard global principles for technical guidance on strengthening housing against specific types of extreme events can shorten the time necessary for selecting materials and technical guidance information. This in turn can also accelerate the planning and procurement process. Standardisation of preparations and responses can also ensure equitability of responses for all who are at risk of an extreme weather event.

A 1.3. Upholding the "Do No Harm" Principle

The overriding humanitarian principle of 'Do no Harm' also applies to early actions. Here are a number of ways to avoid poorly planned early actions that can put target populations at risk.:

Ensure early actions do not interfere with evacuation plans and timeframes

The decision to evacuate must be based upon clear, agreed upon warning messages. In many contexts, this is guided by existing evacuation plans and decision-making mechanisms. Where no such plans are in place, the EAP should include warnings and instructions/support for evacuation. If in doubt do not encourage people to stay in unsafe areas, or create confusion overstay/evacuate decisions. Avoiding loss of life is always the number one priority, even if doing so may risk the loss of property through not having adequate time to strengthen housing structures, or through risk of looting from others.

Simulate shelter early actions to know when to choose safety over material support.

Timing shelter early actions throughout EAP development, from logistics and material deployment, delivery, to shelter strengthening measures, will enable response teams to assess risk upon EAP activation. In the onset of a disaster deliveries of materials, or the arrival of field teams to provide information and training, are often undertaken in increasingly bad weather, and chaotic circumstances, where delays may be unavoidable. If the materials or information represent a large value to the target families, they may choose to delay evacuation in order to receive the material support. Clear messages should be given that this may endanger lives and that waiting in unsafe areas is no guarantee that delayed support will arrive before the start of the disaster. Target families should be assured that they will be able to receive support after the disaster as well, as part of an agreed-upon Plan B.

Correctly target support (e.g. shelter rather than livestock/livelihoods, or vice versa).

Whilst mis-targeted support is not typically life threatening, in relation to delayed evacuation, it can nevertheless reduce the impact of early actions, ultimately delaying recovery. Determining well-defined priorities with target communities and acting in accordance with local risk-perceptions are central to identifying and planning early actions. The greatest positive impact comes from distributing needs-based materials or other support, which can reduce the impact of disaster on both housing and livelihoods or other structures, allowing target families to move swiftly to recovery.

A 1.4. Act as early as possible, and in accordance with forecast lead time

Depending on the type of hazard, a forecast with sufficient skill and probability can be available weeks, days or hours in advance. The period this forecast covers – or forecasts – is called lead time. Different types of extreme weather events can be forecasted with different general lengths of lead times. In the course of its trigger development, the FbF team, together with climate experts and the local hydro-meteorological offices will develop a Inventory of Forecasts that lists all available forecasts, including the lead time they provide (see section on trigger methodology in the FbF Manual). These lead times are not always exact, but they provide an indication of the time that should be available between the forecast and the extreme event. Setting triggers is integral to the EAP, as well as Forecast-based Action by the DREF, which unlocks funding for EAP activation when the EAP trigger has been reached. However, National Societies might also want to act outside of this system, for example for events that do not reach the magnitude addressed by the FbA, where there are sufficient funds for early action from other sources (e.g. government) or where EAPs have not been developed. However, independent of the source of financing, if these actions are forecast-based, they will also be subject to the constraints of lead times.

The available lead time strongly impacts the selection of early shelter actions. For example, an early action for repairs or retrofits might be ideal for reducing a severe humanitarian impact of a cyclone, but if it cannot be implemented within EAP activation and forecasted extreme event(e.g. a day or two), it cannot be used within the context of FbF.

If it becomes clear that not all of the necessary activities are possible to undertake during the available time between forecast and extreme event, then the FbF team should work with national authorities and local stakeholders, to advocate that a selection of activities are undertaken regularly at other points during the year, as components of Disaster Risk Reduction, or Durable Shelter Strategies, or Sustainable Development projects and programs for instead.

Distribution of materials that relies on release of FbF funds will be tied to certain probability thresholds in FbF EAPs, and therefore often not possible without these funds, but training events, or more general mass-media awareness campaigns for safer construction could be implemented by the RC/RC Movement and/or national DRM or other authorities using other channels of funding.

A 1.5. Combining early actions of different sectors

It is unlikely that at-risk communities will have only needs with regards to Shelter. Depending on the risk analysis, one EAP will likely include an array of cross-cutting sectoral early actions (WASH, livelihood, Cash-Voucher Assistance) to reduce different types of impact. In addition, take into account the probability that the DRM authorities themselves, or other organisations active in the area, carry out early action for other sectors as part of their contingency planning.

In terms of field implementation, combining shelter early actions with early actions for other sectors can take a number of general directions, according to the following key questions:

Questions for the FbF Team in-country	Key considerations
1 **Can lists of items from different sectors be combined, in order to avoid duplication – for instance, ensuring that both Shelter and WASH sectors do not distribute identical plastic sheeting or jerry-cans to the same households?**	• Consult with WASH team members to create a combined list, in consultation with representative communities • Develop IEC materials which show how the same item or material can be used for both Shelter and WASH purposes
2 **Can technical guidance information be broadened, to include guidance to support other sectors – for instance including guidance on strengthening the structures for buildings for live-stock in the same guidance packages on strengthening housing?**	• Work with key actors in other sectors, and where appropriate national ministries, to incorporate technical standards from those sectors into the guidance • If necessary, increase the amount of materials per kit, so that families can strengthen both their homes and other built structures
3 **Can delivery and distribution of items be combined, in the same delivery vehicles, and the same community-level distribution points?**	• Undertake joint procurement of packaging for kits • Plan with team members from other sectors, for joint distribution timelines and EAPs • Agree upon standards for spatial volume and maximum weight of kits and items, between all sectors
4 **Can lists of vulnerable or otherwise targeted households be cross-checked and combined, between different sectoral teams (taking into account the fact that household needs and vulnerabilities are not always the same in different sectors)?**	• Insist upon unified, multi-sectoral database of potential beneficiaries to indicate universal vulnerabilities (e.g. woman-headed household), as well as, separately, any vulnerabilities particular to one specific sector
5 **Can cash or market-based approaches be used as part of the EAPs, in order to give the beneficiary households more flexibility in their own priorities for support?**	• Ensure that any pre-disaster EMMA or cash programme planning is done with team members from all sectors, able to assess construction materials' markets from the quality additionally to the quantity point of view, as well as labour market, for the level of technical expertise additionally to the number of people available to work.
6 **Can shelter early actions be combined with Early Warning systems and evacuation plans?**	• Cross-check early warning systems and shelter vulnerability for enhanced efficacy for early warning communication and/or evacuation.

A 1.5. Taking into account local building techniques and materials

A clear and comprehensive preliminary assessment of local building techniques should be undertaken early in the EAP development process; ideally as soon as the risk analysis has shown that the impact of a type of extreme event on housing is a priority and that shelter early actions should be identified.

When planning the assessment of local building techniques and materials in representative communities, the following questions can be used as guidance ***(for more specific structural guidance, see Section 13, Types of Disaster):***

Questions	Key considerations
1 **In the neighbourhoods or communities selected for the assessment, what percentage of the housing is constructed from more traditional materials and methods, and what percentage is constructed from modern materials, such as concrete blocks? Is the ratio of traditional and modern housing typical and representative of a wider range of communities in the at-risk geographic zones?**	• If there is a significant percentage (> 25 %) of housing in a typical community which has been constructed in part as a mix of traditional and non-traditional materials, then this is typically housing which is not well connected together, and so more connective materials (strapping and bracing) may be needed in any materials kits or technical guidance.
2 **Have most of the houses – whether traditional or modern – been built all at once, or is there visual evidence that they have been built incrementally, with extra rooms or storeys added on over time? Are the different rooms or storeys all of the same construction materials, or are they of different materials? Are there strong joins between the different rooms and different materials?**	• Houses which have been built incrementally are less likely to be well bound together, and more at risk of collapse. There is usually no easy way to bind different storeys together, so then explore with communities the possibilities of strengthening external structures (e.g. storage sheds, or evacuation centres) instead.
3 **If there have been recent disasters, what were the most common types of housing damage, either according to visual observation, or the testimony of local community members? Did these mostly impact a particular part of the structure (e.g. roofs, walls, floors)?**	• If most of the damage was to roofs or upper parts of the houses, then strapping and tie-down ropes are the most likely construction items to be included in any EAP. If entire walls have been destroyed, look instead towards bracing or sandbags (against lower-wall undermining or erosion).
4 **What sorts of construction materials are easily available in local markets, of acceptable strength and quality, and within the cost ranges of local income scales for vulnerable community members? Roughly what percentage of the local community would be able to purchase at least some of these materials themselves, either immediately before or immediately after a disaster?**	• For communities with limited resources, it may be better to recommend that they buy larger quantities of cheaper items such as rope and strapping, which can be re-doubled or over-bound, rather than a small amount of larger items, such as timber bracing poles.

Additional factors to take into account include:

- Taking into account geographical location and topography
- Taking into account existing policies, building codes, standards and zoning
- Taking into account access (access regarding access to slums – e.g. in the case of Vietnam although EAs were planned, it is difficult to receive access from the government, also access in terms of potential access routes which could be impacted by a disaster and affect delivery plans)
- Taking into account local government cash-for-work programs and sources of potential contracted labor

A 1.6. Taking into account local markets and materials

Due to the very short lead time for most hazards, with little time for procurement, let alone quality assessment, materials for distribution as part of a shelter early action should be secured well in advance of a possible activation, or ensured via contracts with suppliers/virtual warehouses etc. However, if early actions include, for example, cash grants for beneficiaries to be used to purchase materials for strengthening houses, or if the early actions consist of distributing instructions or technical advice on how to take measures to protect one's home, then access to markets for the local population becomes highly relevant.

Although much guidance is available to assess markets after a disaster, less research exists regarding how to predict market capacities in the few days prior to a disaster, following public early warnings. However, there are some key considerations, which apply:

- If a certain item, or type of construction material is not present in local markets before a disaster, then it will not be present in local markets after a disaster
- If there is lack of local knowledge about how to correctly use a construction material before a disaster, there will not be any increase in the knowledge about its correct application in the short window of time prior to a disaster
- If materials are only available in low-quality variants before a disaster, they will not be available in high-quality variants after a disaster
- If certain items tend to sell out quickly before a disaster, they will also sell out quickly, and have limited liability, after a disaster
- If women, or marginalized population groups face barriers accessing markets before a disaster, it will not be any easier for them to access a market after a disaster

Pre-disaster local market assessments carried out during your early action identification process, should include:

Questions	Key considerations
1 **How many distinct steps, journeys or re-sales must common construction items make, in order to be available in the most remote communities?**	• Each extra journey or re-sale will increase the price of the items in the last village. The more journeys that an item has, the more likely that there will be multiple or parallel routes options available, so that the accessibility of the items in the last village will not be entirely dependent upon any barriers in one specific route.
2 **Are local retail sales dependent upon local re-packaging done by machinery?**	• If construction items need machinery to be re-distributed into smaller bags or boxes, then damage to machinery, and electrical power outages in worsening weather during the lead time for a predicted disaster, may impede accessibility.
3 **Do the vendors in the local markets come from and live normally in the local community?**	• If they live elsewhere, and travel in order to sell items or operate shops, then it is likely that they will return to their own homes and own communities before an oncoming disaster, and will not be available to receive, transport or sell key construction items in the last day before, or after, a predicted disaster.
4 **Can supply of items actually be increased during the lead time before a predicted disaster?**	• During the days before the predicted arrival of an extreme weather event , demand for key shelters will increase, especially if demand is accelerated through cash distributions by FbF teams or partners. In order for the supply to meet the heightened demand, it will have to not only maintain pre-disaster levels, but actually increase, and must do so during worsening weather conditions and worsening road conditions.
5 **For Early Actions Using Cash and Voucher, has a market assessment been conducted with prices, supply chain and trends. can financial service providers be precontracted? Do those in need have access to functioning markets and how shall the transfer value be defined?**	• If you consider cash distribution for purchase of shelter materials, consult the RCRCM CiE Toolkit and outline minimum standards for the set-up of cash-based early action (and a system that needs to be in place for flexible activation) and conduct research on market data that have been conducted during similar shocks in the past. • The response option analysis process will help you determine and document what are the most appropriate and feasible modalities and mechanisms most suited to the project's objective and context.
6 **Are there notice systems in place for markets to stock up?**	• Important to know / check the lead time/notice for restocking or scale-up for traders/services mentioned at the assessment phase. Notifying markets and traders when the early action is activated is key to ensure they markets and traders are aware of the cash injection in the area so they can prepare ahead and have relevant stocks/services ready.

A.2. Involving communities in the identification and planning of shelter early actions

Although there needs to be an overall national strategy to identify and prioritise key regions or areas in the country, and to oversee the large-scale procurement of materials, it is crucial to take the knowledge, capacities and coping mechanisms of communities in the most likely disaster-affected areas into account when identifying early actions and planning EAPs.

Thus, in addition to looking at sources like studies on past impact of extreme weather, available data on vulnerabilities and risks, and guidelines of different sectors and interviewing experts, when deciding on possible early actions, teams developing an EAP should always assign a lot of weight to the outcomes of assessments in communities that are representative for regions threatened by a certain type of extreme weather event.

The key areas of the EAPs consultations with potentially affected communities will inform are:

1. Identification of common community vulnerabilities and capacities, needs and priorities, identify which risks can be reduced by the FbF system
2. Appropriate selection of technical solutions and shelter materials
3. Choice of methodologies for pre-positioning and distribution
4. Methodologies of technical information transfer
5. Regular review of the consultation process

Local early warning systems

It will be the role of the FbF team, to guide these discussions, and to ensure that they inform and integrate with the overall national strategy.

As a principle, the more inclusive the planning process is, the greater the level of ownership, and likelihood of the effectiveness of the planned early actions.

At the same time, if a group is too large, it may be difficult to arrive at a clear set of decisions. It may be necessary to have introductory wider community consultations, and after first consultations create a smaller, more focused group.

A 2.1. Taking into account community's coping mechanisms

All EAPs need to take into consideration the ***community's coping mechanisms*** in the face of disaster. In the context of developing EAPs that depending on the forecast can be activated in different locations, this should be derived by working with selected representative communities, whose experiences can stand in for those of the wider at-risk population. The FbF team will need to first work at the national level to develop the internal guidance on how to ensure that the selected communities are indeed representative of the general at-risk population for each given hazard.

For more information on coping capacities, please see

SHORTLINK

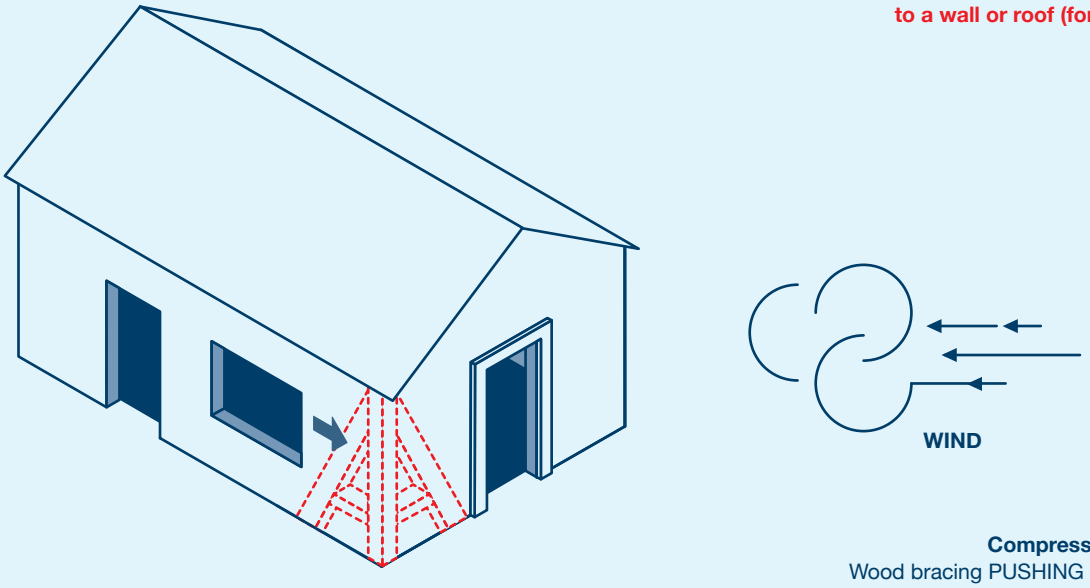
Annex – Coping Mechanisms.

Categories of community coping mechanisms
Although there is a wider range of ways in which communities cope with such damage, these too can be grouped together into some general, typical categories. Most of these categories are according to:

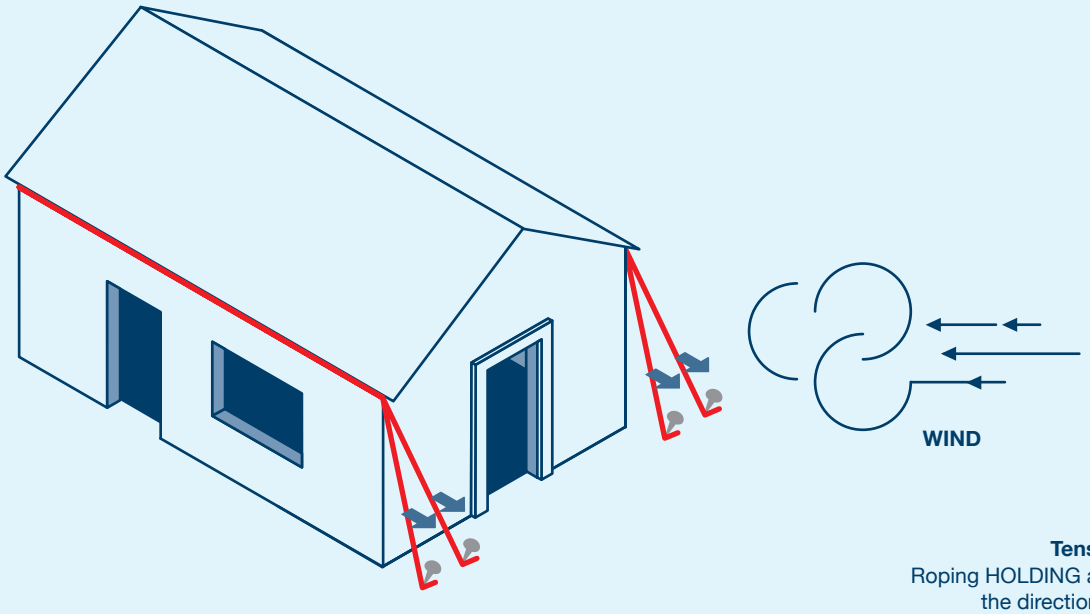
Strengthening.
The addition of extra materials in order to make the shelter more resistant to the force of the hazard. The types of strengthening can include extra bracing, or stronger tie connections for roofs and walls, or extra layers or material added to walls or foundations.

Strengthening can be done through the addition of rigid materials designed to increase the resistance to compression by forces of disaster, and the addition of materials through secure connection or binding, to resist forces of disaster though tensile strength, or holding the shelter together.

The difference between compressive strength and tensile strength in construction items added to a wall or roof (for high wind):



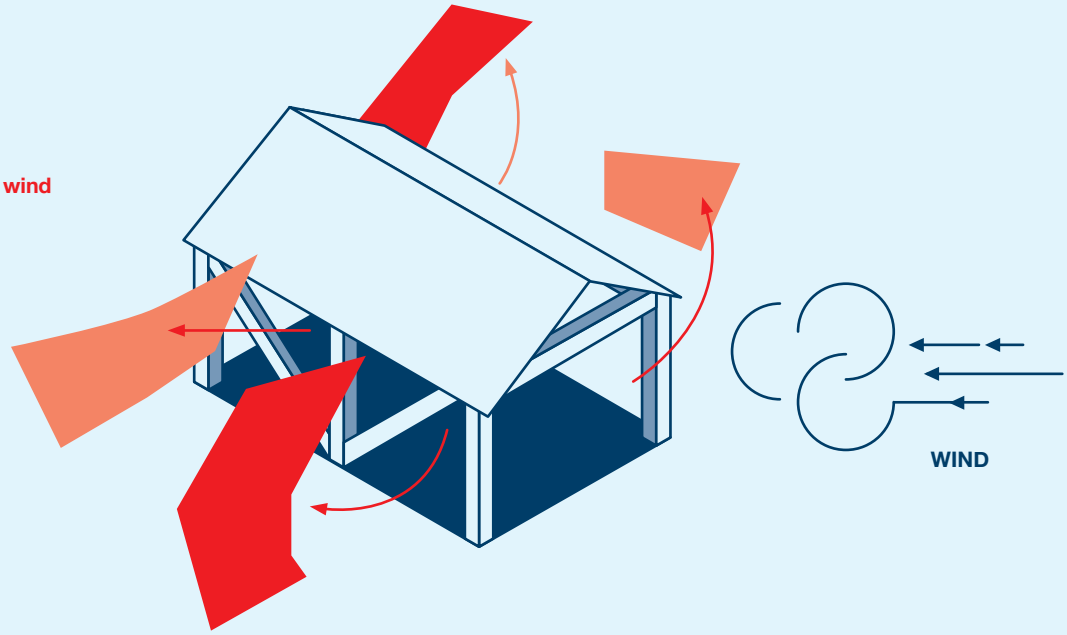
Compressive strength
Wood bracing PUSHING back against the direction of the wind



Tensile strength
Roping HOLDING away against the direction of the wind

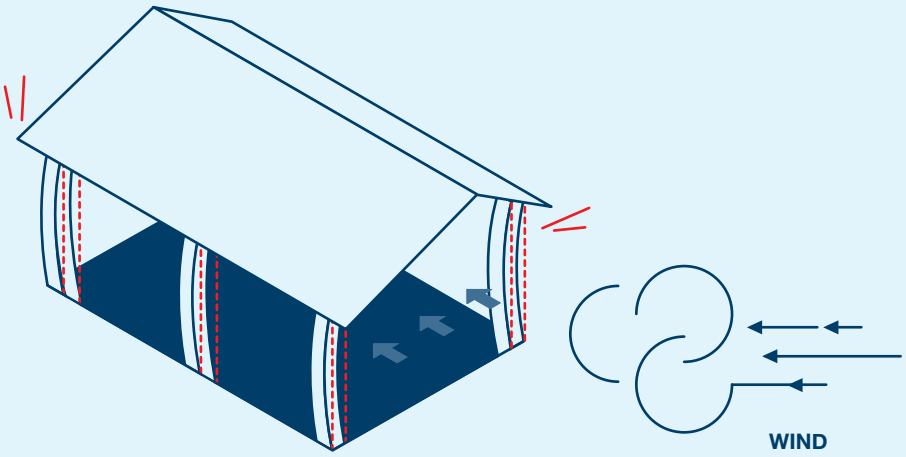
Sacrificial.
Parts of a shelter such as walls, may be intentionally left weak, so that they will likely collapse allowing key structural parts of the core shelter, such as columns or diagonal structural wall braces, to withstand the impact of the disaster (wind, water), by reducing their exposed surface.

The sacraficial elements of a shelter (for both high wind and for flooding):



Flexibility.
In many areas, communities construct their shelter using entirely or in part materials and designs which are designed neither to fully resist the forces of the hazard, nor to be sacrificially removed by the forces of hazard, but instead are designed to be flexible or bend, so that the force of the hazard is temporarily reduced, and so that those parts of the house can return naturally to their previous position, once the disaster subsides.

The flexible elements of a shelter (for high wind):



Addition.
Some communities cope with extreme events by constructing additional safe rooms or structures to their homes, specifically designed to protect family member and/or their belongings, if the rest of the house is damaged or destroyed during a disaster. This coping mechanism can also include the construction of additional shelter, temporary or permanent, in remote locations on land which is safer that the location of the main house.

A shelter, along with a remote addition on higher ground (for flooding):

Evacuation
Depending on the forecasted intensity of the extreme event, communities are, at times, faced with little to no choice other than to evacuate their homes. In these cases, it is important comprehensive and clear signals are disseminated to those affected regarding where community members typically seek safe shelter (e.g. cyclone shelters, or community centers, or less-risk prone topographical zones of the community. In cities, families often "urban self-settle", taking matters into their own hands and stay with families or friends. For heat or coldwaves, people may temporarily evacuate, for example, to climate controlled community centers, with heating or cooling infrastructure.

A 2.2. Points to consider when planning community consultations

Following risk analysis, analysis of data on past events and research, community consultations should be planned so that input by representative communities can add value to the EAP development process. In order to do this, the team developing the EAP at the national level must be able to undertake the following tasks:

1. Select a community, and individual members of that community, whose projected needs in case of a disaster, and whose understanding of how to prepare for a predicted disaster, are within typical range of the wider at-risk population as a whole.

2. Develop the tools to be used during the engagement with the representative communities – questionnaires, focus-group guidance, and other consultation activities, which can effectively map the impact of past disasters on the community, including:
   - **a.** changes in local building practices or housing designs as a result of any recent disasters
   - **b.** priorities
   - **c.** capacities and coping mechanisms,
   - **d.** needs and gaps

Learnings should be fed into the EAP to serve as representative for the wider at-risk population.

3. Frame all the contributions so that a 'bigger picture' emerges, providing clear choices at the national level.

4. A 2.3. Sample questions guiding community consultations on identification of shelter early actions

In order to frame the contributions from the representative communities, and guide the strategic discussion, the following questions can be used:

1. Which hazards have produced damages in your communities' infrastructure/houses?

2. What actions did the community take to prepare for the most recent previous extreme event (both for individual houses, and for community structures)? What actions were the most common?

3. What materials and tools were needed for each of those actions (make a detailed list)? Were all the materials and tools easily available on the local market, right up to the day of the emergency? (Note exactly which ones were or were not available) Were there any materials or tools which were not available specifically for most vulnerable members of the community for any reason? How did the community know that the materials or tools were of good enough quality?

4. Were there any actions which members of the community would have liked to take, but were not able to, or didn't? What was the reason for not taking those actions?

5. Are there any actions which the community is already thinking about changing, in preparation for the next time? Why?

6. For each common action that the community took last time, how many houses were targeted, how many people were needed to support which type of activities , how many tools were needed, what is a realistic amount of materials needed (per house), and how many hours did each action take, on average per house?

7. What were the most common types of damage to the houses, during the most recent emergency? (work with the community members to divide the list into 'light/repairable damage' and 'heavy/structural damage')

8. Which types of damage can be prevented/ mitigated by the actions which the community already knows and undertakes? Which types of damage cannot be easily prevented?

9. Does the community preposition materials? If so, where? Are stocks sufficient?

10. Show the community the graphics and list of materials, tools and actions for the specific type of emergency, from Part B of this booklet. Ask the community members to indicate any actions or materials which they would not use, and to explain their reasons why.

11. After showing the relevant graphics and lists from Part B of this booklet, ask the community, are there any other additional actions not included in this list, which you would want to do next time?

12. From all the materials and tools which the community listed as an answer to Question 2 above, combined with the lists from Part B of this booklet, if the community could only choose three priority tools, and three priority materials for each family, what would those tools and materials be?

A 2.3. Available resources on community consultations

The community consultation events must be adapted to each specific context. Guidance on how to establish and manage the consultation process can be found in the following IFRC publications:

Participatory Approach for Safe Shelter Awareness (PASSA)

SHORTLINK

www.ifrc.org/PageFiles/95526/publications/305400-PASSA%20manual-EN-LR.pdf

VCA Toolbox with reference sheets

SHORTLINK

www.ifrc.org/Global/Publications/disasters/vca/vca-toolbox-en.pdf

How to do a VCA. A practical Step-by-step guide for Red Cross Red crescent staff and volunteers

SHORTLINK

www.ifrc.org/Global/Publications/disasters/vca/how-to-do-vca-en.pdf

A 2.4. Community involvement in development of IEC materials

Warning the population of a coming event and providing guidance on early actions which they can take to protect themselves, can be crucial to reduce the humanitarian impact of extreme weather. Hence, IEC materials are part of many EAPs. Consulting with communities representative of the population at risk to support the development and review of IEC materials will help creating effective, appropriate IEC materials as part of an EAP and ensure the following:

1. The information reflects the needs of the at-risk population
2. The information is presented visually and aurally, in a way that is clearly comprehensible and memorable for all members of the community
3. The materials or channels for transmitting the information, are appropriate and accessible for all members of the community
4. The communities can take subsequent ownership for further distribution and adaptation of the information

At-risk communities will need information, as well as relief items kits or shelter materials. Without this information, there is a risk that materials will not be used effectively, and that target populations will remain vulnerable to oncoming disaster, or with less capacity to recover afterwards.

This information and technical knowledge transfer can include:

- How to take steps to prevent/reduce damage to housing
- How to build shelters, either with newly distributed or with recovered materials
- How to effectively repair damaged houses
- How to 'build back safer' in permanent reconstruction
- How to adapt public buildings to emergency collective shelters
- How to plan and maintain evacuation routes
- Other necessary information may include:
- The detailed content list of all items to be distributed
- Confirmed beneficiary lists (to be available publicly during the planning and review phase)
- Locations, and layout of the distribution points
- How to give feedback or information to the local or national RC office

A 3. Things to do once the EAP with shelter early actions is finalized

A 3.1 Keeping EAPs alive and up-to-date

An approved EAP is valid for five years. However, EAPs and the information they contain will need to be updated annually and/or each activation to ensure lessons learned and changes in underlying data or assumptions on risk and vulnerability included.

During this review, communities, national development plans and authorities, should be consulted to see if the situation has changed significantly.

In particular, in reviewing the representative community-level input in the EAP review process, the following specific considerations will need to be taken into account over time:

Changes to prevalent housing designs, or choices of materials.
Although these trends may only be visible in the longer-term, it is possible that disasters can make sudden, widespread changes to the way people design their houses, or the materials which they choose to use in reconstruction. At times this may occur with little quality control or technical expertise, thus actually weakening their houses, and making their houses more difficult to strengthen and protect. Similarly, as disasters may heavily impact livelihood, lasting negative economic effects can lead to the reconstruction of weaker, lower-quality materials.

Changes in land use and urban development
Development can either amplify or mitigate vulnerability to hazards. For example, newly built infrastructure such as dams, changes in land use (e.g. deforestation, or agriculture), and urban development exert hydraulic effects. For example, the increase in impervious surfaces (e.g. densification of buildings, roads, airports, ports or logistic centers), coupled with removing vegetation and soil, accelerates water runoff. Such changes to the built environment can lead to over-capacitated storm-water channels, and increased vulnerability to floods. Alternatively, wider ecosystem-based climate adaptation measures, have the potential to mitigate the impact of hazards.

Changes in both technical repair knowledge, and communications technology.
It is unlikely that there will be notable changes in either technical knowledge or communications technology from one 12-month period to the next. More commonly, this aspect of the plan review will concentrate upon how the quality of the materials distributed in the previous disaster was decided upon and controlled, or whether the dimensions of the items were correct.

A 3.2. Monitoring, Evaluation, Accountability and Learning

Monitoring and evaluating early action interventions for shelter should remain in line with standard FbF M&E Guidance. The following tools below serve to support the identification, selection, monitoring and evaluation of early actions within FbF project programming.

Formulating how disaster impacts will be reduced
The suitability of shelter early actions will depend on the analysis of anticipated impacts. Early actions for shelter will thusly be selected based on evidence. The programming team shall formulate a theory of change (TOC) for each selected early action to test its logic and assumptions (e.g. dissemination of shelter strengthening kits, verse Cash and Voucher Assistance (CVA) and or evacuation). This will help at a later stage to measure the impact of the intervention.)

SHORTLINK

TOC example

Designing a MEAL process for the EAP
The M&E plan and EAP Monitoring template are central components of an Early Action Protocol. Prior to the completion of the EAP, it is imperative early actions for shelter be tested via simulations (see A.1.1). As part of any EAP, if shelter actions are selected, it needs to be considered before the design is finalized, how their impact will be measured. Sound M&E enables practitioners to track whether shelter early actions were implemented as planned, as well as to identify learnings to improve future early action and response via the Early Action Protocol. Results from simulations (e.g. timing logistics and shelter strengthening implementation with relevant stakeholders), and activations should be inputted into the M&E Plan(s), as well as revised in the EAP for increased efficiency and effectiveness.

SHORTLINK

FbF M&E plan example &

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M&E plan template

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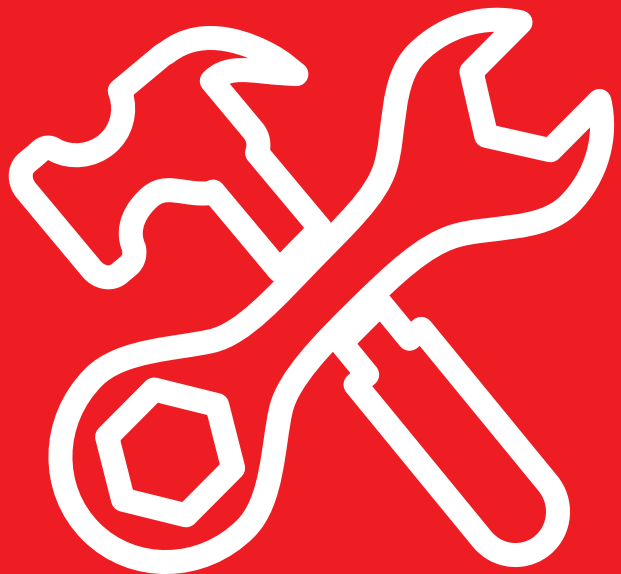
EAP monitoring template

Part B

Shelter Early Actions – The Toolkit



B 1. Identifying the most appropriate shelter early actions – Preliminary questions and types of support

B 1.1. Preliminary questions

Shelter early actions are framed by the following interlocking questions:

- What is the most likely type of extreme weather event and what are the most likely set of forces from this event against housing and shelters?
- What are the prevalent types of housing, and the key strengths and weaknesses of the housing, in the face of the most common extreme weather events?
- What was the main impact of a certain type of extreme event in this area on housing?
- What has been done in previous recent disasters by the local communities, to both strengthen their housing before a disaster, and then repair or reconstruct after a disaster? What has worked, in terms of 'build back safer'?
- What are the capacities, including materials' and labour's market – and limits of capacities – of the at-risk communities?
- What are the local market and livelihoods constraints for preparedness and resilience?
- What are practical limits for delivery of materials, information or other interventions, during the lead-time before a predicted disaster, on the routes to most likely affected communities?
- What are the most useful materials and other interventions, as the first steps towards longer-term recovery after a disaster?

These practical and technical questions are then in turn framed by the general questions that need to be considered when identifying and prioritising forecast-based early actions, such as (see also FbF Manual):

- What is the likely scope of a future natural disaster in terms of population in need?
- What are the overall, national profiles for vulnerabilities and targeting amongst the wider population at risk?
- What is the funding available for an EAP activation, either for blanket support methodologies, or for targeted approaches?
- What are the likely constraints for various materials options, in terms of national procurement and delivery routes?
- What types of activities are foreseen in existing contingency plans of RC or DRM authorities?
- What are the assumptions in place, in already existing national strategies for post-disaster reconstruction, for the types of materials and other support which the disaster-affected communities will be able to access in the first phase?

B 1.2. Types of support – What sorts of Shelter early actions (materials, cash, kits and information) are realistic?

Early actions aiming to reduce the humanitarian impact in the shelter sector can be divided into three categories:

1. Structural strengthening of housing and other buildings
2. Pre-positioning of emergency-relief materials
3. Safety and evacuation of the affected population

For both Structural Strengthening and Pre-positioning, bundling Shelter items or other relief items into kits or toolboxes (with a combination of shelter materials, household construction tools, and information leaflets or booklets) may be the most efficient way to deliver the maximum number of materials to the maximum number of families, in worsening weather conditions during the very limited time between forecast and onset of the extreme event. Materials packaged into kits and toolboxes may also be part of ensuring that evacuation centres and evacuation routes are safe, as well as accessible and dignified.

Examples of specific kits and toolboxes which can be adapted to a local context, are given in detail in Sections B 2., Types of Disasters, Actions, materials and tools usable for individual houses, can be used for community-level EAPs, as well. For further guidance see B 2., Types of Disasters.

Although variation is possible in the materials which are combined for either technical information sharing, construction tools, or shelter materials and NFIs, the selection and combination should be done according to the following principles:

Durability.
If the impact of a disaster is severe, the materials provided during EAP activities may be the only support, which targeted communities receive for some weeks. Therefore, as well as needing to be strong enough to resist the force of the disaster, materials should be durable enough to last for sufficient time until more durable repairs or reinforcements are possible. A selection of materials might be purchased upon validation of the EAP and prepositioned until further notice of EAP's activation. Materials should be durable when stocked/prepositioned for longer periods and stored correctly, e.g. so that plastic does not get brittle or wood moldy.

Package-ability.
In order to enable distributions which are efficient, rapid and safe for both volunteers and beneficiaries, items in the kits or toolboxes need to be packaged into smaller boxes or bundles, especially if they are loose items, such as nails or bolts. Pre-packaging such items during the pre-positioning phase also makes it easier to conduct monitoring of distribution to ensure that all beneficiaries are getting all of the items to which they are entitled.

Appropriateness to the response.
In choice, combination, design and strength, all the items should be appropriate for the type of hazard which is predicted. ***(Note that in many countries with short cycles of disaster, communities are actually vulnerable to a number of different types of hazards at the same time.)*** The choice of items should also be appropriate to the targeted communities' capacities, and preferred mitigation and coping methods. Heavy, prefabricated and remotely manufactured items are almost never appropriate to FbF response.

Flexibility of use.
Combinations of items which can be used for multiple purposes – for example strengthening of shelters or household water and sanitation structures, or livelihoods structures – will be used more often, and will be more likely to be used appropriately from a structural and engineering point of view.

Transportability.
The kits or toolboxes themselves must be of standard dimensions designed to fit onto wooden transportation pallets, and into the transportation vehicles used by the NS and its partners, without wastage of space. If the kit weighs more than 20kg, then each kit must be capable of being broken down safely into smaller parts for transportation, with equal numbers of all components being deliverable by one vehicle.

Use-ability by all members of the community, including those with physical disabilities.
Having both items and kit-packaging with large handles, simple openings to the packages, broken down into lightweight sub-components, and with clear, large-print instructions and information can help the usability by all members of the community. ***See Sections 6.1 and 7.2 for more detailed guidance on making interactions with communities accessible for everyone.***

Equitability in distribution, if there are limited resources.
Before the actual arrival of the extreme event, it is very difficult to predict which shelter or house will suffer what type of damage, and how severely. Therefore, all kits or toolboxes should be standardised. In order to avoid tensions in the community, all members of the targeted community should receive the same set of items.

Key construction items which make a larger difference to the strength of a house.
With limited time, limited capacity for transport, and in stressful situations, it is unrealistic to encourage communities to strengthen every single weakness in a shelter or house. Often, focusing on one or two key parts of the shelter, which (a) are supporting other parts of the house, or (b) which are the weakest links for the shelter or house structure as a whole, is more effective, and can reduce the impact of the disaster better, than trying to spread limited materials across all parts of the shelter at once.

Connection to public information campaigns or technical-knowledge transfer in the targeted communities.
Make sure that the lists, narratives and graphics in information materials clearly match the actual items in the kits or toolboxes, even if the information is being distributed separately, or is being shared by radio, TV or social media.

Procuring materials on a large scale, using international supply chains, may realistically take 45-60 days, and this should also be factored in to the timeline planning, and into the selection of the materials themselves. Refer also to procurement guidance produced by the local NS, and any guidance given by a national Shelter Cluster. Check with the Shelter Cluster coordinates or provides information about any joint procurement pipeline or any other multi-organisational procurement mechanism.

B 1.3. Types of support – Selection of key materials

Once it has been decided to distribute items as part of an EAP, then the selection of the actual items, to be done following research, and taking into account expert advice and consultations with representative communities, should be according to the following principles. ***See Section 12.1.3 below, for guidance on combining materials into packages or kits:***

Climate.
How much protection from the sun, rain or snow is needed, as well as protection from extremes of hot or cold temperatures, both day and night? How is this affected by the likely weather and temperature ranges in the yearly seasons with the highest risk of natural disaster?

Type of disaster.
See B 2., Types of Disasters, for more detailed guidance on how the types of disaster can affect both housing damage and community coping mechanisms.

Common housing and shelter types.
Be aware than in the majority of communities, there will be a mix of housing types, with some houses built from traditional materials, some houses built from more 'modern' materials including concrete, but more often with the majority of houses built from a mix of traditional and modern. ***Make sure that there is a way for items such as plastic sheeting, CGI sheets and wooden planks to be fixed to both wooden and concrete or brick structures, for instance.***

Commonly found weaknesses in housing and shelter.
See Section 13, Types od Disasters, for more detailed guidance on how the types of hazard can affect both housing damage and community coping mechanisms.

Local capacities for delivery, stockpiling and distribution.
If communities tend to have a number of smaller stockpiling locations, rather than one larger location, or if the location(s) are difficult to reach by road, then a decision may need to be taken to select smaller items which are easier to transport and stock. Decide with the local community, which items, if any, can be stocked safely outdoors, leaving indoor space for items, which truly need to stay dry.

Remember that materials distributed as part of EAPs, whether alone or in shelter kits, are primarily intended to provide:

- Key strengthening immediately prior to a predicted disaster, or
- The means to construct emergency shelter, with the materials alone, with those materials plus re-covered items from destroyed houses, or as part of make-shift repairs to damaged houses, in the immediate phase after a disaster

The materials distributed are therefore intended to be used in combination with salvaged elements from de-stroyed houses to construct an entire durable shelter.

Standard items commonly distributed are listed here, in a table which shows their common uses, while highlighting their strengths, and their limitations:

Item	Strengths	Limitations
Plastic sheeting and fixings	Versatile, flexible, can be folded into small packages for transportation, relatively large shelter coverage area for the material cost, waterproof and windproof, low flammability.	Limited life-span, no compressive strength, needs fixings and other construction materials in order to optimise performance, lack of rigidity, no insulation capacity.
CGI sheets	Rigid and potentially able to provide shelter coverage area without fixings, longer-lasting, re-usable for post-disaster permanent repair or reconstruction	Inflexible and difficult to cut to measure, more difficult to securely attach to other materials, machinery or tools for making holes for attachments, heavy and unfold-able for transport.
Plywood	Rigid and giving high degree of physical protection, especially to house apertures, can easily be used for both walling and roofing of shelter, potentially able to provide shelter coverage area without fixings.	Relatively heavy, may need extra waterproofing, cannot be cut without tools, inflexible.
Selection of nails, bolts, brackets and straps	Necessary in order to maximise the potential use of all the other items on this list.	Provides no actual shelter coverage space without other items in the kit, or recovered items from damaged or destroyed housing, needs other materials in order to be packaged and distributed.
Wooden planks	Can be used for both short-term shelter and for permanent housing repair or reconstruction, durable, can be used for a variety of elements of a house, including as part of structural, self-bearing elements.	Heavy and difficult to transport, especially by foot, from the distribution point, relatively costly, sources may come with environmental restrictions, re-use dependent upon not being cut or shortened during the initial shelter phase.
Nylon rope	Easy to store, relatively low-cost, flexible and can be used together with many other materials.	Provides no actual shelter coverage space without other items in the kit, or recovered items from damaged or destroyed housing, some communities may prefer to use the rope for livestock/livelihoods purposes.

Amounts of materials: almost every house is of different dimensions, and therefore will have some variation in the amount of key materials needed to strengthen it. However, EAP teams will need to make some sort of calculation for an average amount of each material, in order to initiate the national-level procurement and stockpiling process. This calculation should be based upon observation of as many actual houses in at-risk geographical zones as possible. Remember that it is more important to calculate the average material needs of lower-quality houses, and houses of the type usually occupied by most-vulnerable households, rather than the average of all houses of all qualities, good and bad.

Key questions to guide these calculations are:

1. What are the standards in national building codes, for specific key materials?
2. How many vulnerable points, or vulnerable areas, does an average house have?
3. What is the minimum amount of each material which could make a significant difference in strengthening a house – and why?
4. How many actions could an average household actually complete, within the last 48 hours, or last 24 hours, before the arrival of a predicted disaster, or before they decide to evacuate?

B 1.4. Types of support – Using Cash and market-based approaches

Cash and market-based approaches can provide more flexibility to individual households, to select the items which they wish on the local markets and choose those materials that are most appropriate for their house, and also to pay where necessary, for the manual labour to install materials to strengthen their housing. Cash based approaches are thus popular with at-risk communities, and can reduce wastage and duplication in providing resources to target communities.

Undertake cash or market-based approaches only if a market analysis (see the guidance in Section A 1.7.) indicates that the local markets typical in the communities in the at-risk regions, will have all the necessary quantity and quality of materials, and will be accessible to all during the lead-time before a predicted disaster.

The most common advantages and disadvantages to using cash-based methodologies for EAPs, specifically in response to shelter needs during the lead time before a disaster, are as follows:

Advantages	Disadvantages
Allows wider adaptation of materials to the design of each individual house	May be stored, or held back by beneficiaries for later use, and not used directly for disaster-preparedness activities
Requires fewer heavy vehicles, and can be delivered electronically, or via multiple light vehicles	Difficult to monitor how much of the cash will be used for shelter-related disaster-preparedness activities, nor their standard
Allows flexibility of timing for individual beneficiaries, for when they will select, transport and install any materials	Requires all transfer channels and markets to continue to fully function in the lead time before, during, and in the immediate phase after a predicted disaster
	Less assurance over quality and strength of construction materials, and of standard level of implementation of preparedness measures.

B 1.5. Types of support – Using shelter kits

Shelter kits are groups of items (See Section 12.1.1, Selection of Key Materials) which can be used to either strengthen housing and other structures before the arrival of a disaster, or used to repair damaged housing, or build basic shelters in the period after a disaster.

Generally, shelter kits must be more adaptive to the local context than relief item kits.

Relief item kits are groups of NFIs intended to be of use in the immediate days after a disaster. Here are lists of standard relief item kits often referred to globally:

- ***IFRC Shelter kit:*** this is a minimum package of plastic sheeting and basic fixings, which is relatively easy to distribute to a large number of families, but may need additional fixing materials in order to attach the plastic sheeting to all variations of local housing

- ***MSF kits:*** the shelter kit is much like that of the IFRC shelter kit, but with options for additional cooking items kits, and washing items kits. Neither of these can be used for pre-disaster strengthening of housing, and may also be at risk of damage or destruction unless the local storage space is secure from disaster.

- ***IOM RSK kit:*** this example was used for post-disaster repair, and is the heaviest of all the examples shown in this section, as it also includes CGI roofing sheets. These should only be included in pre-disaster distributions if they can be securely attached to houses by the families, and if there is the resources to complete the full distribution.

These kits can be adapted to the local context, and the choice of kits or kit items should be approved in the previous planning processes, by groups which include members of the target communities. Likewise, the items in the kits will need to be compared to any standard kits or item specifications provided by the national government, or national humanitarian-response coordination forums. However, the further the selection differs from the standard global kits, the more likely it is that this will cause longer delays in procurement, and fewer costing advantages of procurement at large-scale.

Tool kits: In many cases, after a disaster, affected households will be able to re-use construction materials from damaged houses, but may not have the hand tools available to make most effective use of those materials for house repair or shelter construction.

Here are examples of standard hand tool kits, which may be distributed immediately before or immediately after a disaster:

- ***IFRC Shelter Tool kit:*** this is a larger kit of tools, but without actual construction. materials, and if often intended for post-disaster debris removal and repair, rather than pre-disaster strengthening. Depending upon the situation, this kit is often distributed to a group of families to share, rather than one kit per family. Note that in some countries the machete cannot be included, for security reasons.

- ***Habitat for Humanity kit:*** also a tool kit, but comes with a durable plastic storage box and a bucket, for easier transport and safe storage, as well as two different saws, for both metal and wood, and so often more appropriate for an urban area, or an area with mixed housing types.

Ensure that as part of the planning process, there is agreement amongst the community on how many families can use or share the same tool kit, and how that will happen. In order to see if this is possible, and to make the calculation for how many families per tool or per tool kit, the RC team needs to ask the following two sets of questions together with the targeted community:

About the tools themselves:

1. Will all families in the community need to use them?
2. How much time will each family need – before the disaster and after the disaster – for the use of each tool?
3. How durable are the tools – how long can they be used without breaking?

About the relations between the families:

1. What is the average number of related households in an extended family within the community?
2. Are there any already existing small-group cooperative projects in the community (such as a mutual savings group), and if so, what is the average number of families in each small group?
3. Have there been any previous projects in the community which required the sharing of tools? If so, how many families per tool? And what were the lessons learned, in terms of families-tools ratios?

Do no harm: in some countries, the distribution of tools which could also be used as offensive weapons (e.g. machetes) is not permitted.

In some cases, the combination of items may be intended for community projects (such as the strengthening of a communal cyclone shelter), rather than for individual household use. Such an approach should be agreed upon with each community, during the earlier planning phase.

Here are some of the items which may be included in such combinations:

- Larger-width plywood, for protection of larger apertures in public buildings
- Large water tanks for communal use
- Technical information on adapting public buildings into emergency collective centres
- Metal frames to drape plastic sheeting or blankets, in order to create family privacy barriers within the centre
- Fire extinguishers

B 1.6. Types of Support – Designing IEC Materials

At-risk communities often need information and capacity building, as well as relief items kits or shelter materials. Without this information, there is a risk that materials will not be used effectively, and that target populations will remain vulnerable to oncoming disaster, or with less capacity to recover afterwards.

This information and technical knowledge transfer can include:

- How to take quick steps to strengthen house or parts of the house to reduce the impact of forces related to extreme weather
- How to build shelters, either with newly distributed or with recovered materials
- How to adapt public buildings to emergency collective shelter
- How to plan and maintain evacuation routes
- How to effectively repair damaged houses
- How to 'build back safer' in permanent reconstruction

Other necessary information may include:

- The detailed contents list of all items to be distributed
- Confirmed beneficiary lists (to be available publicly during the planning and review phase)
- Locations, and layout of the distribution points
- How to give feedback or information to the local or national RC office

Technical messages should be prioritised according to the following principles:

Construction methods already understood by the community.
Build upon pre-existing coping strategies. This may be a mix of methods which are understood by all members of the community, and methods which are better understood by the group of skilled craftsmen (professional carpenters or masons) who may be relied upon by the other members of the community to undertake more complex construction tasks.

Depending upon the situation, it may be necessary to create two sets of guidance on safe shelter construction methods – one for general members of the community, and one for craftsmen or specifically trained project staff or volunteers.

Materials which are effective, and widely available.
There is little use in providing information on how to use materials which are not available, either through restricted markets, high costs, or because they are made using new, 'innovative' technologies. Effective materials are those which are not only available, but also able to perform a number of different functions, for different types of shelters or houses.

Measures which are effective, but which take only short amounts of time to implement.
Some measures, such as filling and stacking sandbag barriers, are extremely labour-intensive, with members of the targeted community reluctant to undertake them voluntarily during the stressful time within the few days before a predicted extreme event. Instead, measures which will make a difference to the disaster resistance of the shelter or house, but which are quick to implement, should be focused upon.

Measures which can be repeated rapidly amongst many households.
For many of the measures which are recommended in technical guidance, it will be necessary for more than one person to help in completing the tasks, and those other people may come from other families in the community, meaning that everyone will need to take a turn in helping everyone else, if all members of the community are to complete the FbF preparedness tasks before the arrival of a predicted disaster. This also means that these tasks need to be easy and quick to repeat, and complete-able by groups of people with varied skills and levels of physical strength.

Measures which can be undertaken even without the distribution of shelter items by the RC NS, or other humanitarian organisations.

In extreme situations, the technical guidance messages will have been distributed to the communities, in the forms of trainings, leaflets or other methods, in the earlier stage of an EAP activation, but then, because of worsening weather and road conditions, the distribution of the materials or kits is delayed. In this case, the community still has a valuable resource, in terms of the knowledge in the technical guidance, but that will only be of value if members of the community can follow the guidance with other materials at hand, either from local markets, or adaptation of materials already within the shelter or house.

The development of all technical messages needs to be reviewed by all stakeholders participating in the EAP planning process as well as being reviewed by members of the target population prior to finalisation, printing and distribution. The timeline for doing so should be included in the previously agreed overall planning timeline.

As with all other technical messages, those provided for radio or other media should be done in language and using concepts which the target populations find easy to understand, in the middle of stressful situations. In this case, a review of both the messages, and the actual voices used, should be done with members of the targeted communities. It may be necessary in some countries to produce the same messages in multiple languages.

When asking the communities to review any draft radio or audio messages, it is best to play those draft messages to the communities using a prior recording on a computer, tablet or smartphone, so that community members can concentrate upon what they are hearing, and are not reacting to any visual signals given by someone who is reading out the message from a piece of paper 'live' in front of the community.

In the case of shelter early actions specifically, radio or other audio messages are limited in that they can describe recommended shelter-strengthening techniques, but they cannot give the same detail of information, or the same clear simultaneous information on how all parts of the shelter or house connect, as can be given in visual materials.

Therefore, for shelter early actions, it is usually best to use radio or other audio messaging in support of visual messages, or a reminder of key visual messages, rather than as a substitute for visual messages.

Refer to previous public message campaigns done in the same country, even if they have not been for disaster-related messaging, in order to understand which way of conducting messages – through songs, short dramas, documentary material or other – has been most effective and popular, and the maximum number of messages, which can be carried to the targeted communities within one broadcast. ***See the FbF Manual for further guidance on of such materials used in different contexts.***

It is likely that national authorities, and other national emergency offices will also be using the same media, with messages on some of the same topics. Ensure that all messages created are consistent with those produced by other actors. Any Cluster in the country will have an active role in ensuring this consistency of messaging. It is increasingly common to use phones, or other forms of social media, in order to communicate key warnings, or other short, mass-scale messages to at-risk communities.

Because of the type of media used, short, easy to understand messages are likely to be chosen for this sort of communication. This form of communication is therefore more likely to be relevant to planning for evacuation, than for other parts of an EAP. If this sort of messaging is undertaken as part of an EAP, care needs to be taken to ensure than such activities support, and do not interfere with, any similar efforts by either the national government, or by any Clusters present.

Agreements will need to be in place before the disaster season, with national authorities, and with national phone service providers. Consultation should be made with the legal counsel of the national offices of the RC NS, regarding the terms and legal framework for any such agreement.

Be aware that immediately before and after a disaster, local usage of phones may peak, and there may be delays in messages being sent or arriving in phones. This may be made worse by any damage to phone communications infrastructure occurring during the disaster.

B 2. Possible shelter technical interventions by type of extreme event

Shelter early actions fall into a number of different categories, based upon the needs, and the local context. The main categories of response will then be more closely informed by the specific type of disaster, and they include:

Structural strengthening – practical methods for rapid strengthening of houses or other household built structures, such as those for livestock, in order to increase the resistance against a known type of disaster. It is important to remember that due to the short lead-time for most extreme weather events, the fact that the strengthening may be taking place in already worsening weather conditions, and the limited amount of materials which may be available to each family, any structural strengthening will need to be of a targeted nature – not of an entire house, but of the specific elements of a house where the largest difference of strength can be made, based upon the limitations of time and materials.

Pre-positioning – the moving of disaster relief items to a previously agreed, safe and secure location(s), in order to enable rapid distribution, post-disaster. Pre-positioning is best seen as a process, and as a process which starts many months before an anticipated disaster season. Pre-positioning in the final phases may include actual distribution of materials to communities or individual families prior to the onset of the disaster, if that is part of the appropriate, agreed-upon plan.

Safety and evacuation – the safe and orderly evacuation or local protection of households, before, or during a worsening disaster. This may refer to evacuation to larger and previously checked as more resilient public buildings, to host families and host communities, or to other locations. It is unlikely that the installation of temporary structures for group evacuation will be safe or realistic under most circumstances.

In many cases, it will be appropriate to combine or mix the different categories, rather than relying on just one, stand-alone category. Here are key objectives to remember, when deciding on a combination of categories:

- Will the combination make the target population safer?
- Can the combination be provided to all members of the target population within the time-frame?
- How long will the combination provide for the target population's needs? Will it need to be followed up by other, second-phase interventions, and what will be the planning for those second interventions?
- What will be the effect of the combination, on longer term recovery and DRR efforts?

B 2.1. Cyclones

Cyclones and other forms of high winds, typically circling around an 'eye' of low pressure whilst they move forwards, cause immediate damage through the horizontal forces of the wind. The speed and force of the wind can increase locally, depending upon gusting, and which side of the eye of the storm the housing lies. Other associated damage can be caused by water surges from the sea, lakes or rivers caused by the high winds, and by falling or flying debris – either from buildings or vegetation. Post-disaster support may be slowed down by roads blocked by debris, trapped or slowly receding surge waters, or by damage to communications and electrical power infrastructure.

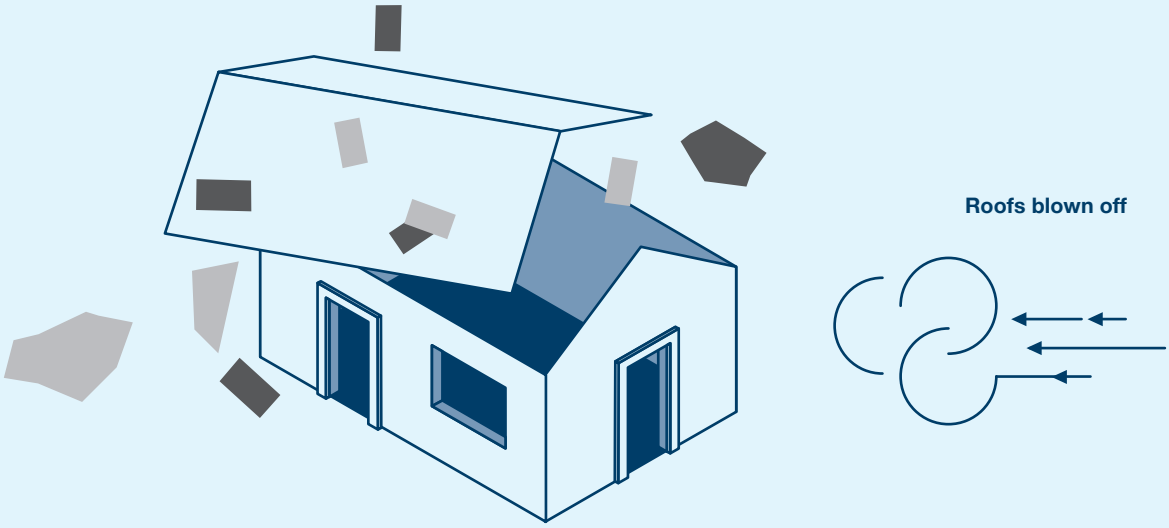
B 2.1.1. Cyclones: model decision-making checklist

Use this sequential checklist as guidance to combine damage analysis, coping mechanisms and technical interventions for cyclone EAPs. Remember that all programming must take into consideration the local context first. Consult with representative at-risk communities, and other national stakeholders, before finalising the technical aspects of an EAP.

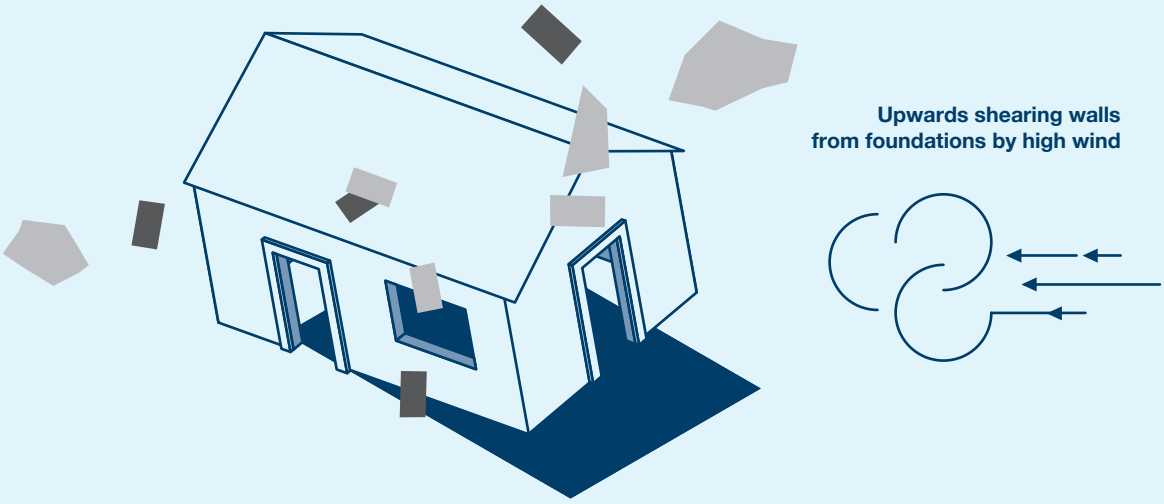
Questions	Key considerations
1 **Have at-risk communities indicated that they will remain or will move to cyclone shelters to avoid the storm?**	If communities indicate that they plan to remain, consider more robust shelter interventions (e.g. plywood rather than tape) as necessary life-saving measures.
2 **Will markets remain functional during the lead-time before a cyclone?**	If markets will remain functional, consider using market-based approaches at least for materials where material quality is not of the highest importance, e.g. sandbags, window tape.
3 **What has been the average lead-time for recent previous cyclones?**	If the average lead time is less than three days, then consider distributing only items which are lightweight, and which require only rapid and minimum effort to install, e.g. tape instead of plywood for the windows, ropes and fixings instead of umbrella bolts for the roofs. Remove the sandbags from the list of items to be distributed.
4 **How late will the roads to the at-risk communities remain safely open?**	If the roads are likely to become impassable more than 48 hours before the predicted arrival of the storm, consider distributing only lightweight items which can be carried in significant quantities in smaller vehicles, and which can still be combined with local discarded materials, such as off-cuts of timber, to make a significant difference to the resistance of the housing, e,g, hurricane strapping, ropes and fixings and toolkits.

B 2.1.2. Cyclones: typical damage

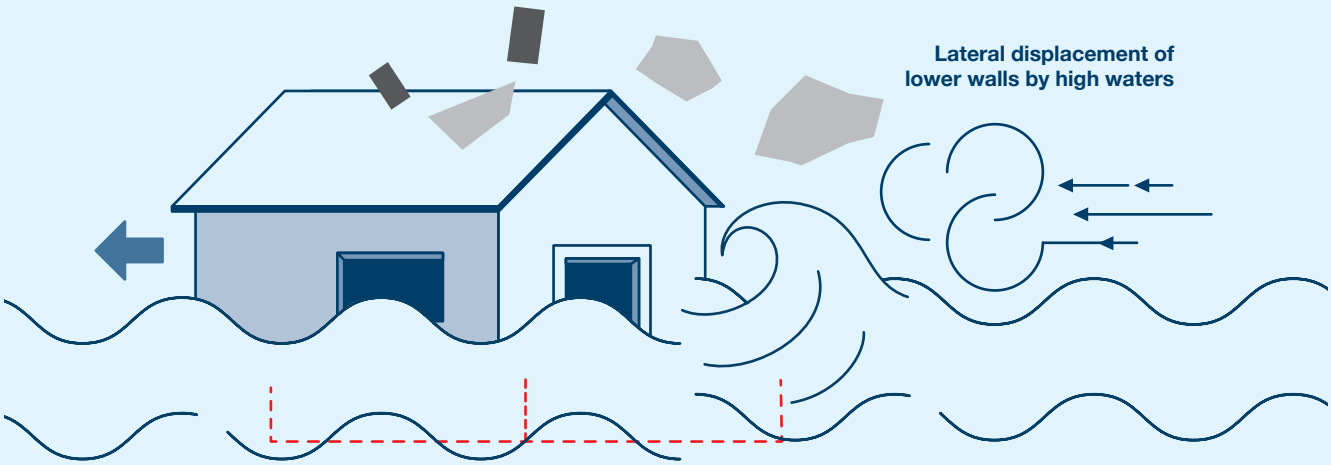
Typical types of damage include:



Roofs blown off



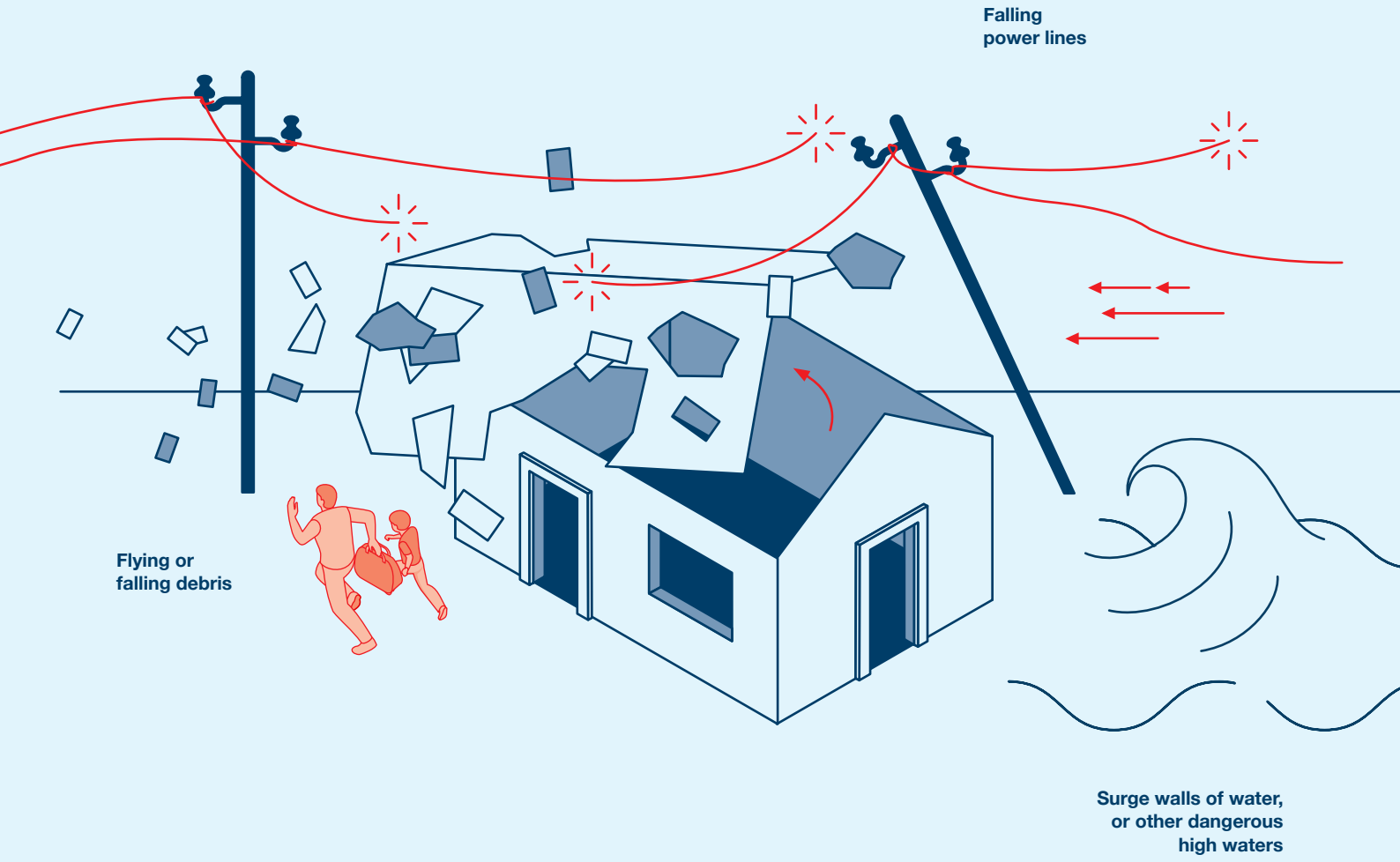
Upwards shearing walls from foundations by high wind



Lateral displacement of lower walls by high waters

B 2.1.3. Cyclones: typical dangers

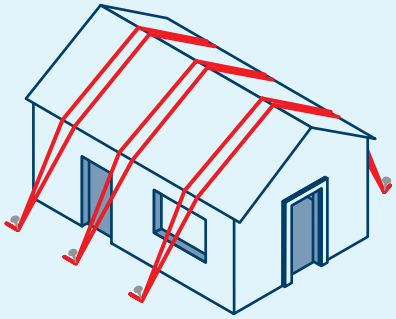
Typical types of dangers include:



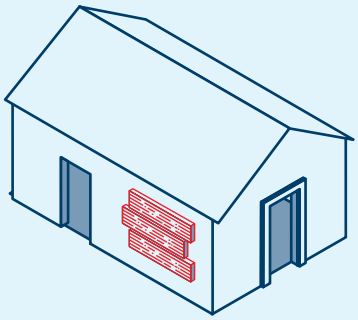
B 2.1.4. Cyclones: typical community coping mechanisms

Typical types of coping mechanisms include:

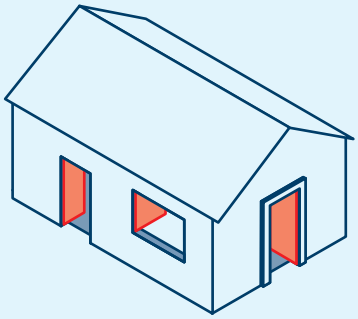
Tying down roofs (see also 14.1)



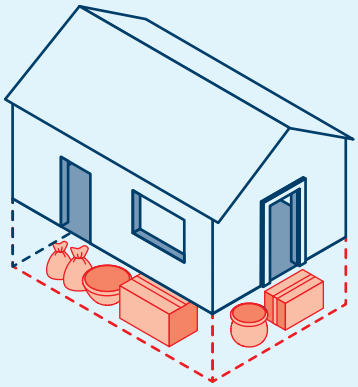
Battening down windows and other apertures (in closed-plan houses)



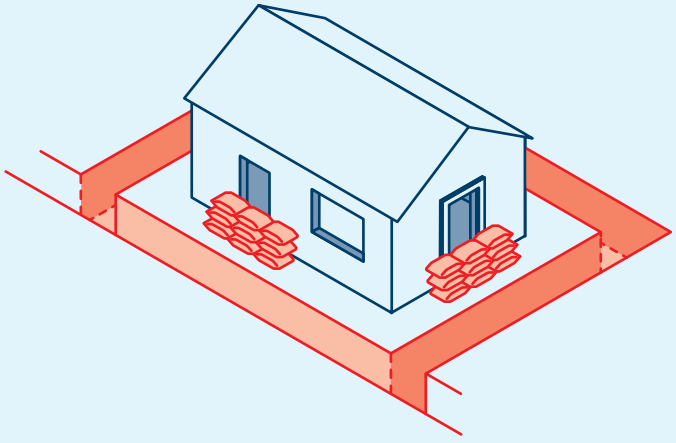
Leaving doors and windows open (in open-plan houses)



Hiding or storing goods in cellars



Digging drainage channels, and sand-bagging entrances, against water surges



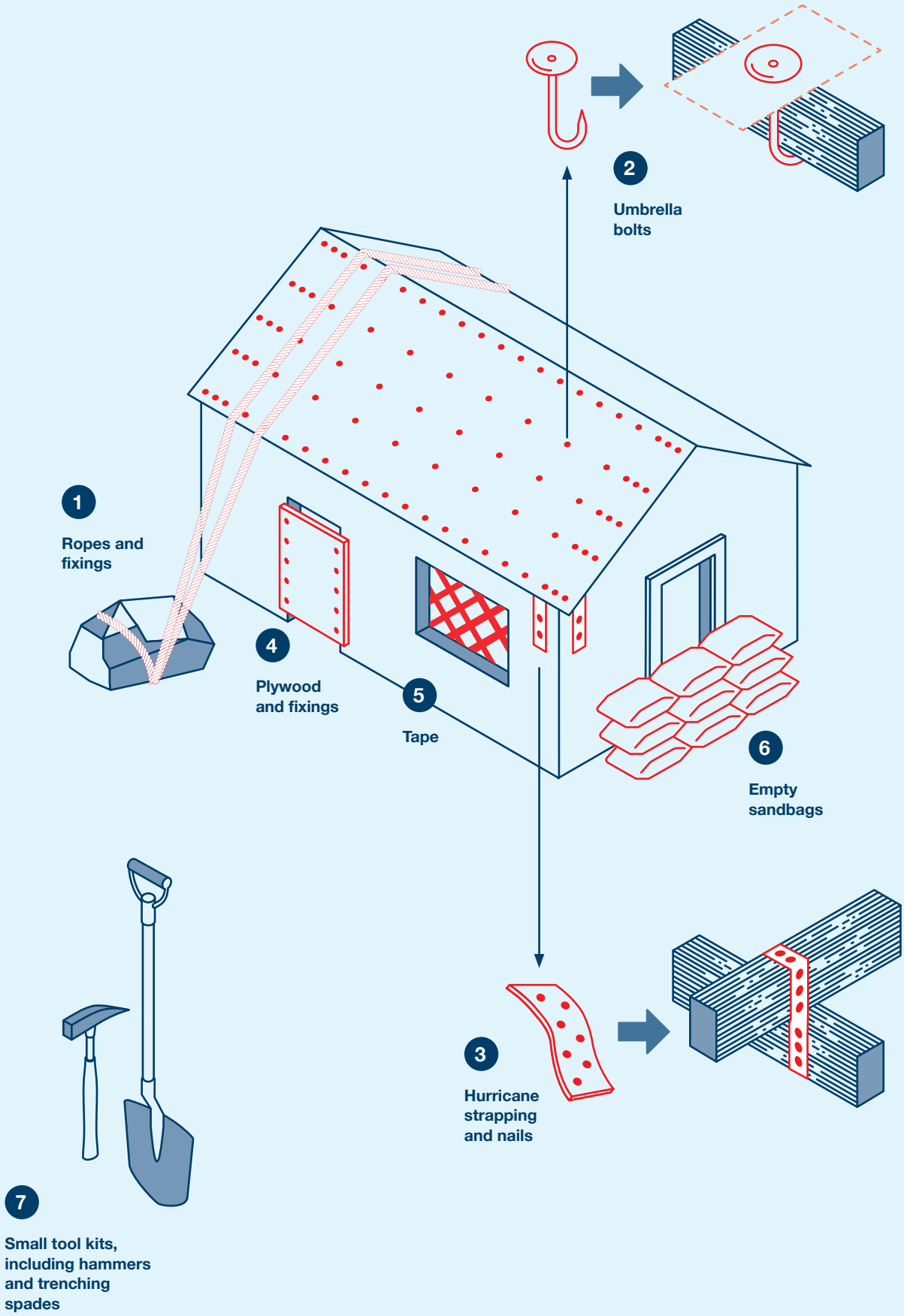
B 2.1.5. Cyclone early actions: Possible shelter technical interventions

Typical types of Early Action shelter technical interventions include the distribution of:

Material	Typically used for	Rule-out Factors	Do's and Don't's
1 **Ropes and fixings**	tying down roofs externally	• Use only when there are heavy things, such as larger rocks, or larger trees, which are unlikely to be uprooted, for anchors for the ropes. • Without options for improvised anchors, families need to know how to use the ropes to bundle the entire house together, instead.	**Do:** distribute in longer rolls, rather than shorter lengths **Do:** distribute more than the minimum length – families may want to use some of the rope for other purposes, e.g. tethering livestock. **Do:** consult with technical officers or engineers about national standards, whenever available, for ropes **Don't:** forget to ensure that families have cutting tools to cut through the rope
2 **Umbrella bolts**	reinforcing roofing attachments	• Use only when the majority of beneficiaries have metal-sheet roofs. For shingle or thatch roofs, longer-shank umbrella bolts to go around the trusses can be combined with plastic sheeting and ropes for the external roofing layers	**Do:** check to make sure that the hats for the umbrella bolts are rounded and not flat, and are securely attached to the long bolt shanks **Do:** consider a mix of different lengths of bolts, for different thicknesses of wood **Don't:** forget to ensure that families have tools to puncture holes for the bolts through the roofing sheets
3 **Hurricane strapping and nails**	reinforcing internal roof-frame attachments, and connections between the roof and walls	• Strapping is only effective if there is sufficient length to tie all the elements of the roof together, and also tie the roof to structural elements of the walls underneath, as well. • Refer to national standards for the required length and strength specifications of the strapping.	**Do:** make sure that the strapping is wide enough for a double line of the most commonly locally available sizes of nails **Do:** consider distributing hammers for each household, given the number of nailings necessary, and the need for the straps to be absolutely flush with each corner of the timber elements

Material	Typically used for	Rule-out Factors	Do's and Don't's
4 **Plywood and fixings**	covering windows	• Use only if house walls are straight enough so that the plywood will be flush with the external walls, and fully covering the window or other apertures, to ensure that it will not be blown away, and if fixings like bolts can go completely through the walls	**Do:** ensure that the plywood is multi-ply (at least three thicknesses) but still light enough for all households to attach and cover average size window apertures **Don't:** use chip-board, as this will not be held by the bolts in constant wet weather, and has less general strength
5 **Tape**	to go over glass windows	• Ensure that there is enough tape to be used on both the inside and outside of all windows. Do not use if the tape is not long enough to go at least 50cm beyond the window frame. Refer to national standards for tape strength.	**Do:** tests to make sure that the tape can also be removed from the glass afterwards **Do:** make sure that the tape backing is waterproof
6 **Empty sandbags**	To block water from coming in through doors	• Only use with housing types with a limited number of narrow doors or openings, as it is not practicable for more open-plan housing designs. Families with persons with disabilities, or other relevant vulnerabilities will need to be assured of support to fill and place the sandbags before the distribution	**Do:** Ensure that the families will have the tools with which to fill the sandbags **Do:** consider distributing many smaller bags, rather than a smaller number of larger, heavier bags, if there is a significant number of families with vulnerabilities in the target communities
7 **Small tool kits, including hammers and trenching spades**	For general fixing and repairs, and for digging drainage channels around the house	• Distribute only tools are lightweight enough for all family members to use, whilst at the same time still strong enough to be effective.	**Do:** remember bags or boxes for carrying and storing the tools **Don't:** distribute tools such as machetes, which are not permitted by the local authorities on security grounds

Possible shelter technical interventions



B 2.1.6. Cyclones: Shelter technical interventions at community level

Typical types of EAP shelter technical interventions at the community level, include:

Intervention	How	Do No Harm
1 **Reinforcement of elements of community cyclone shelters**	Use a combination of materials and actions given in the section above	Ensure that the decision to undertake works on the community structure is truly the overwhelming and free priority of the community, and not forced upon individual households by the local political or religious leader who owns the building used as the community shelter
2 **Clearance of blocked public drainage, to accelerate removal of water after the event**	Community labour, with specific tools and wheelbarrows for debris included	Ensure that there has been designated, environmentally acceptable dumping grounds for the debris from the drainage, already identified

B 2.2. Storm tides

In coastal areas, cyclones, sometimes located out to sea away from the coast, can create tides with multiple waves, or swells, which are higher than normal, and which can reach further inland than normal tides. Unlike single-event tsunamis caused by earthquakes, because seasonal storm tides are connected to ongoing weather events they do have some degree of predictability, and at least a short lead time. Because the water movement is tidal, any water which has not become trapped on-land should be expected to recede within hours. However, the receding tidal waters can have their own force, and create damage to housing as well. Combinations of high winds, heavy rains and the storm tide itself, can increase the scale of damage.

Note that in most cases, EAPs for storm tides will need to be combined with the EAPs for the cyclone high winds described in Section B 2.1. immediately above.

B 2.2.1. Storm tides: model decision-making checklist

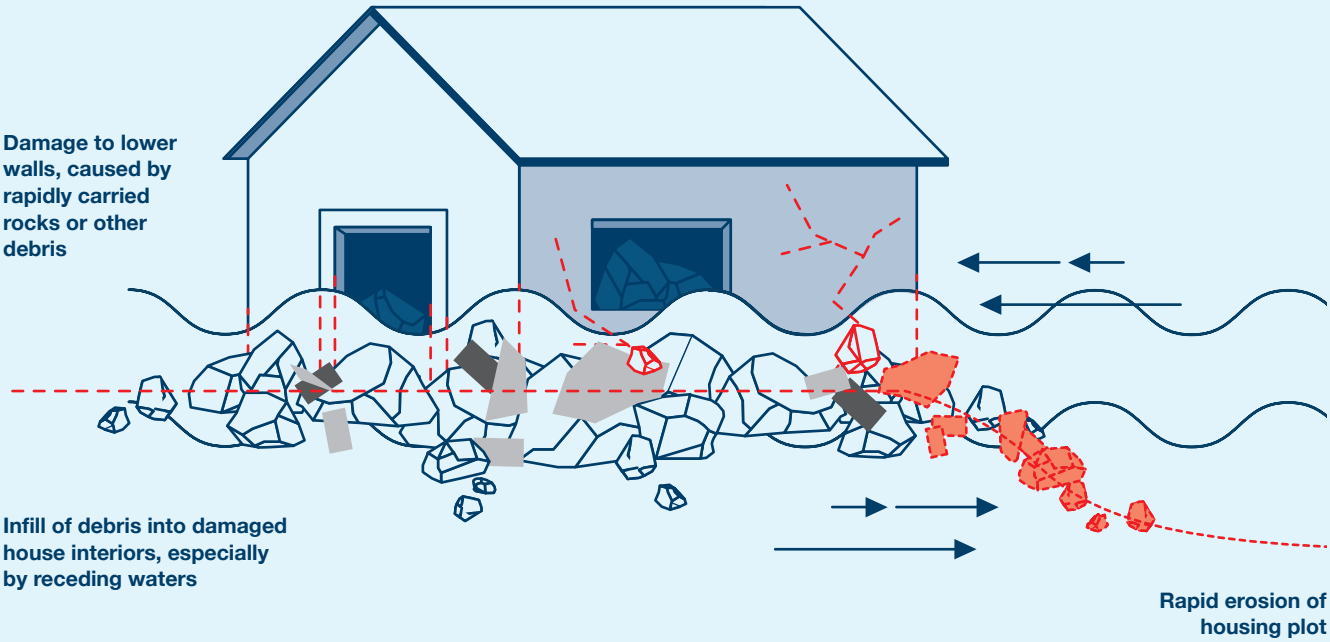
Use this sequential checklist as guidance to combine risk mapping. damage analysis, coping mechanisms and technical interventions for early actions addressing storm tides.

Remember that all programming must take into consideration the local context first. Consult with representative at-risk communities, and other national stakeholders, before finalising the technical aspects of an EAP.

Questions	Key considerations
1 **What has been the average lead time for recent previous storm tides?**	If the average lead times have been less than 48 hours, consider distributing only NFI kits for evacuation-centre use, and toolkits to strengthen housing using already available locally discarded materials.
2 **Are the nearest evacuation towns in significantly higher altitudes than the at-risk communities?**	If the likely evacuation areas are on significantly higher ground or distant from the at-risk areas, and likely to continue to have functioning markets, consider using cash or other market-based mechanisms.
3 **How soon into the storm tide lead time do communities start their evacuation?**	If the evacuation starts within the first 24–48 hours of the flood-warning lead time, then do not include empty sandbags in the list of interventions, as there will not be time to fill them.

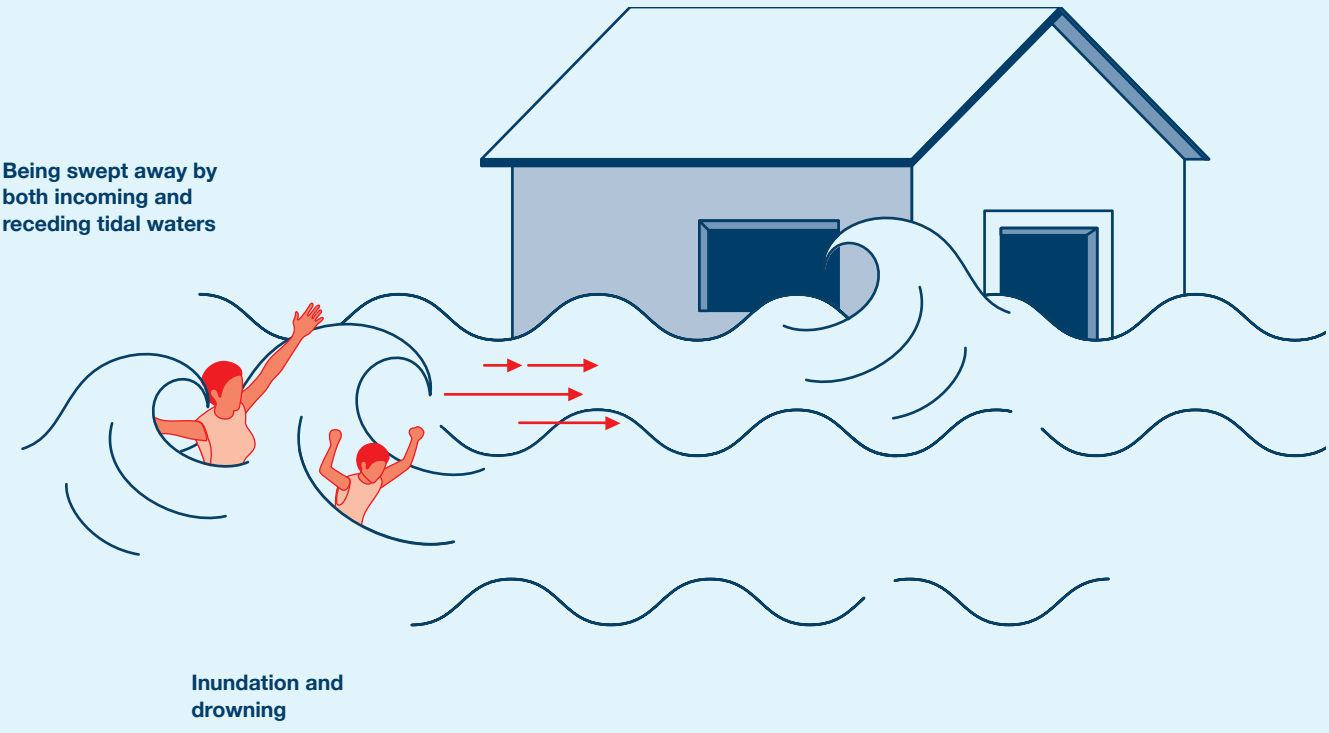
B 2.2.2. Storm tides: typical damage

Typical types of damage include:



B 2.2.3. Storm tides: typical dangers

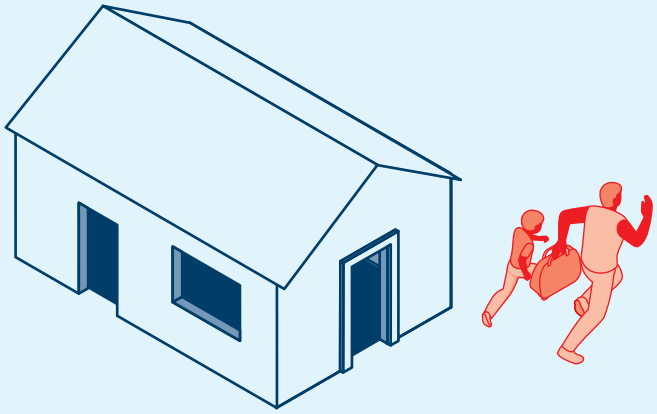
Typical types of danger include:



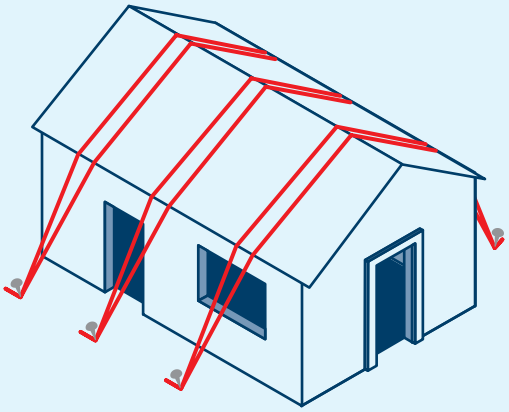
B 2.2.4. Storm tides: typical community coping mechanisms

Typical types of coping mechanisms include:

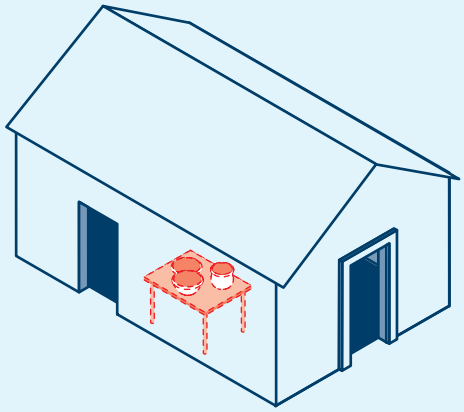
Evacuation



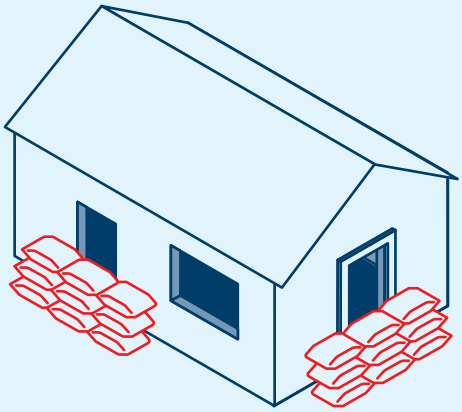
Tying down of roofs



Stockpiling of essential items



Sandbagging of doors and apertures



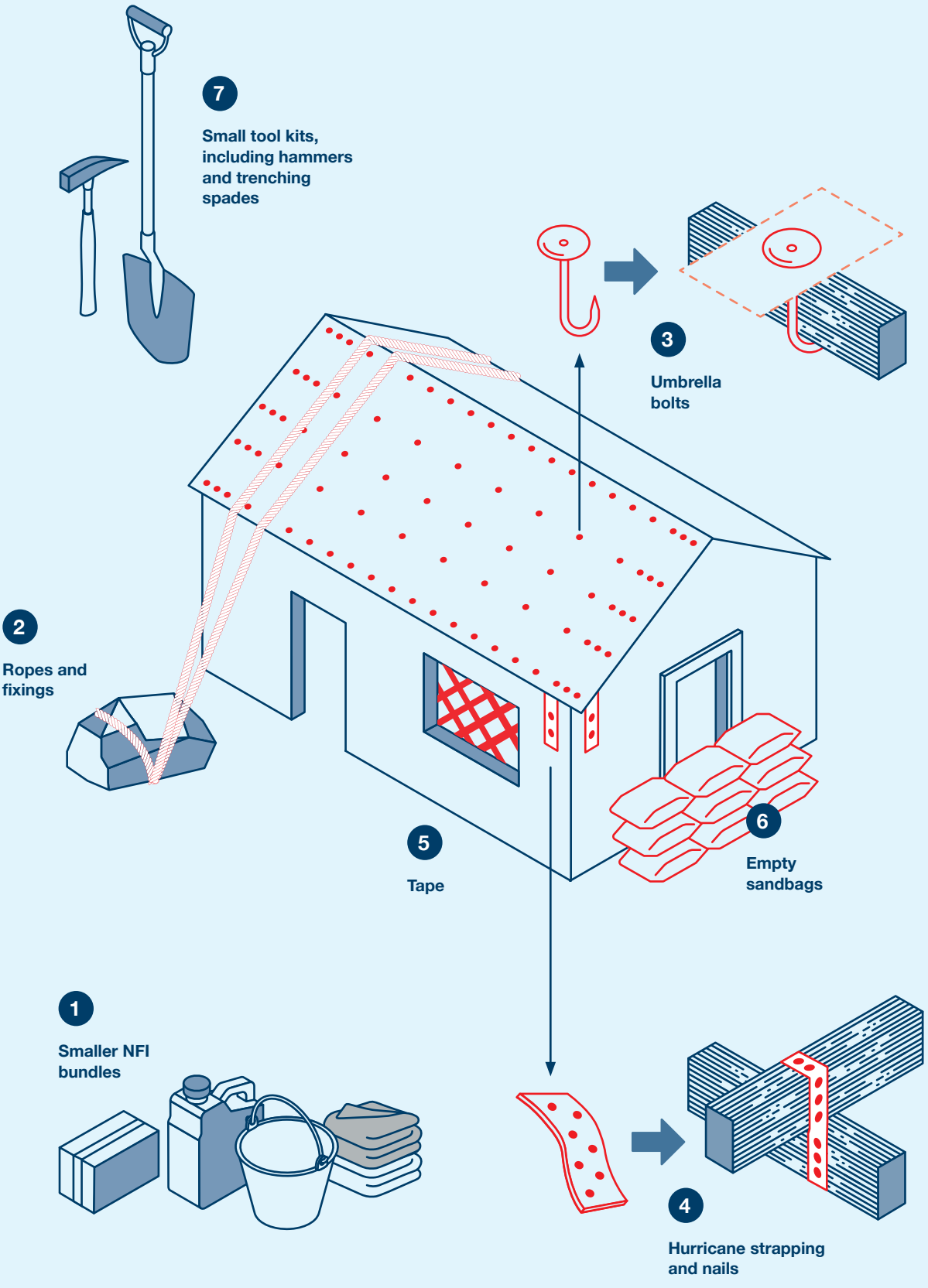
B 2.2.5. Storm tide early actions: Possible Shelter technical interventions

Individual shelters

Material	Typically used for	Rule-out Factors	Do's and Don't's
1 **Smaller NFI bundles**	short-term dispersed evacuation	• Only distribute bundles lightweight enough for emergency evacuation, and packaged in carry bags. Bags heavier than 20 kg should not be distributed.	**Do:** use carrier bags or buckets with lids which are sealable and can be made waterproof **Do:** make sure that the bags have strong, multiple handles, or shoulder straps, for easier long-distance carrying
2 **Ropes and fixings**	tying down roofs externally	• Use only when there are heavy things, such as larger rocks, or larger trees which are unlikely to be uprooted, for anchors for the ropes. • Without options for improvised anchors, families need to know how to use the ropes to bundle the entire house together, instead.	**Do:** distribute in longer rolls, rather than shorter lengths **Do:** distribute more than the minimum length – families may want to use some of the rope for other purposes, e.g. tethering livestock. **Do:** consult with technical officers or engineers about national standards for ropes **Don't:** forget to ensure that families have cutting tools to cut through the rope
3 **Umbrella bolts**	reinforcing roofing attachments	• Use only when the majority of beneficiaries have metal-sheet roofs. For shingle or thatch roofs, longer-shank umbrella bolts to go around the trusses can be combined with plastic sheeting and ropes for the external roofing layers	**Do:** check to make sure that the hats for the umbrella bolts are rounded and not flat, and are securely attached to the long bolt shanks **Do:** consider a mix of different lengths of bolts, for different thicknesses of wood **Don't:** forget to ensure that families have tools to puncture holes for the bolts through the roofing sheets
4 **Hurricane strapping and nails**	reinforcing internal roof-frame attachments, and connections between the roof and walls	• Strapping is only effective if there is sufficient length to tie all the elements of the roof together, and also tie the roof to structural elements of the walls underneath, as well. • Refer to national standards for the required length and strength specifications of the strapping.	**Do:** make sure that the strapping is wide enough for a double line of the most commonly locally available sizes of nails **Do:** consider distributing hammers for each household, given the number of nailings necessary, and the need for the straps to be absolutely flush with each corner of the timber elements

Material	Typically used for	Rule-out Factors	Do's and Don't's
5 **Tape**	to go over glass windows	• Ensure that there is enough tape to be used on both the inside and outside of all windows. Do not use if the tape is not long enough to go at least 50cm beyond the window frame. Refer to national standards for tape strength.	**Do:** tests to make sure that the tape can also be removed from the glass afterwards **Do:** make sure that the tape backing is waterproof
6 **Empty sandbags**	To block water from coming in through doors	• Only use with housing types with a limited number of narrow doors or openings, as it is not practicable for more open-plan housing designs. Families with persons with disabilities, or other relevant vulnerabilities will need to be assured of support to fill and place the sandbags before the distribution	**Do:** Ensure that the families will have the tools with which to fill the sandbags **Do:** consider distributing many smaller bags, rather than a smaller number of larger, heavier bags, if there is a significant number of families with vulnerabilities in the target communities
7 **Small tool kits, including hammers and trenching spades**	For general fixing and repairs, and for digging drainage channels around the house	• Distribute only tools are lightweight enough for all family members to use, whilst at the same time still strong enough to be effective.	**Do:** remember bags or boxes for carrying and storing the tools **Don't:** distribute tools such as machetes, which are not permitted by the local authorities on security grounds

Possible shelter technical interventions



B 2.2.6. Storm Tides: possible EAP Shelter technical interventions for communities

Typical types of EAP shelter technical interventions at the community level, include:

Intervention	How	Do No Harm
1 **Construction of storm barriers from local materials (timber, woven branches, etc)**	Distribution of tools, and possibly supplementary materials (e.g. binding rope, nails)	Ensure sure that the placement of the barriers does not trap the flood waters, and does not prevent the flood waters from leaving again, after the event
2 **Protection of communal shelter buildings through sandbag barriers**	Community labour, with specific tools included	Ensure that there will be sufficient time for protecting both individual houses and the communal buildings

B 2.2.3. Floods – flash, and rapid-movement

Rapidly moving floods are often caused by prolonged heavy rains, or snow melts, but are more likely to occur in areas with steeper land gradients, which contribute to the speed at which the water moves. Flash flood variants may also arrive with an initial wave or wall of water, moving rapidly, and with strong horizontal force. Whilst the force of the water itself can be the cause of much damage, the water can also carry with it rocks, debris from buildings, or uprooted trees, which can be equally damaging and lethal. Because rapid-movement floods are more likely to occur in areas with significant changes in gradient, the high water may not remain for significant lengths of time afterwards. However, the force of the high water may destroy roads, bridges and other infrastructure, therefore delaying post-disaster support.

Please note that the predictability of such type of events varies, so depending on the phenomenon it might not be possible to address rapid floods in an EAP. For example: Floods caused by strong rains due to El Nino can be predicted; however, in many other circumstances it is less predictable and therefore difficult to address through FbF projects.

B 2.3.1. Rapid floods: model decision-making checklist

Use this sequential checklist as guidance to combine risk mapping, damage analysis, coping mechanisms and technical interventions for rapid-flood EAPs.

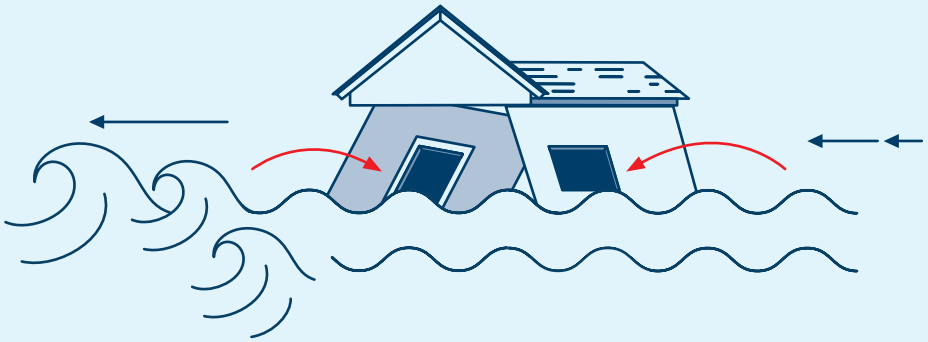
Remember that all programming must take into consideration the local context first. Consult with representative at-risk communities, and other national stakeholders, before finalising the technical aspects of an EAP.

Questions	Key considerations
1 **What has been the average lead time for recent previous floods?**	If the average lead times have been less than 48 hours, consider distributing only NFI kits for evacuation-centre use, and toolkits to strengthen housing using already available locally discarded materials.
2 **Are the nearest evacuation towns in significantly higher altitudes than the at-risk communities?**	If the likely evacuation areas are significantly distant from the at-risk areas, and likely to continue to have functioning markets, consider using cash or other market-based mechanisms.
3 **How soon into the flooding lead time do communities start their evacuation?**	If the evacuation starts within the first 24–48 hours of the flood-warning lead time, then do not include empty sandbags in the list of interventions, as there will not be time to fill them.
4 **Are there significant concerns within the communities, about looting or other forms of insecurity?**	If insecurity is also a concern, then consider more robust shelter interventions, e.g. wood planking to block up doors, as these interventions can contribute to both flood mitigation and security for absent households.

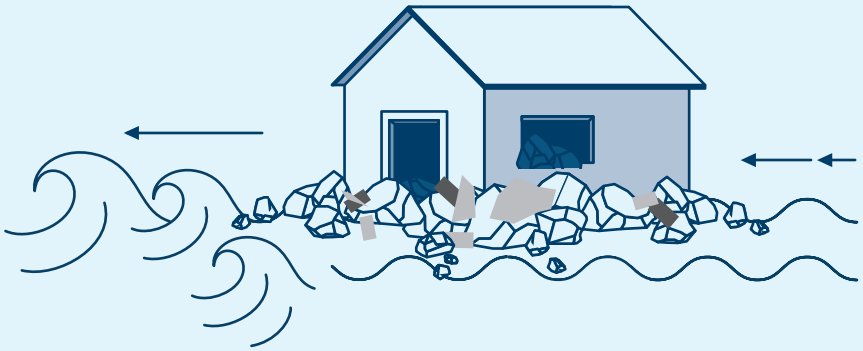
B 2.3.2. Rapid floods: typical damage

Typical types of damage include:

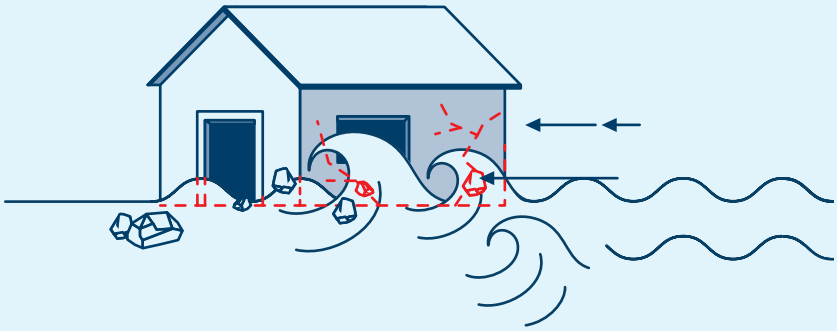
Inwardly collapsed walls and roofs



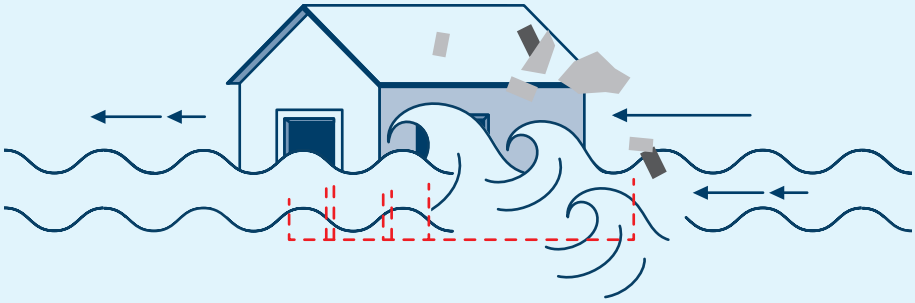
Infill of debris into damaged house interiors



Cracks or 'punch' holes in lower walls, caused by rapidly carried rocks or other debris



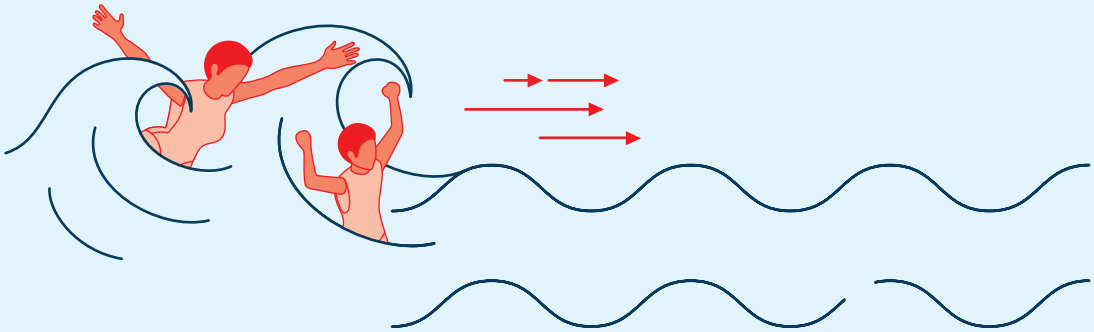
Lateral displacement of lower walls by high waters



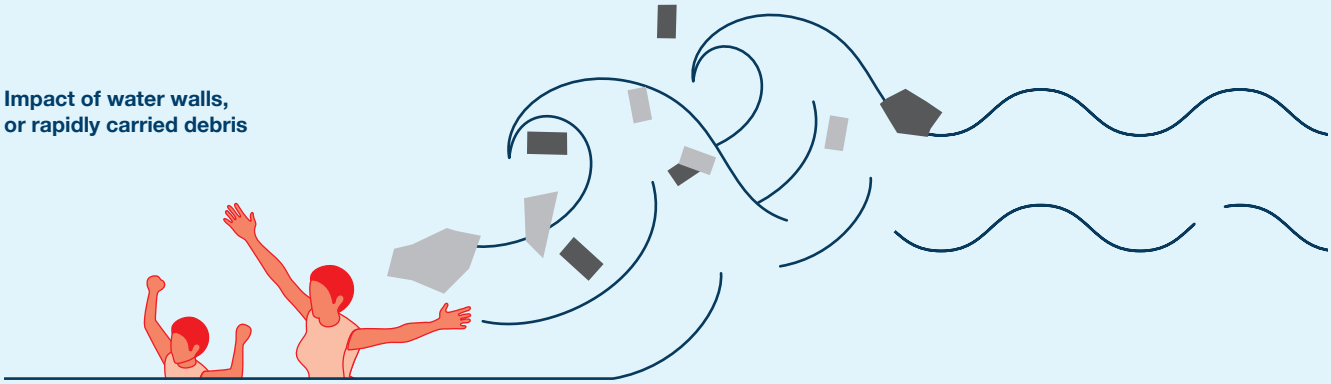
B 2.3.3. Rapid floods: typical dangers

Typical types of dangers include:

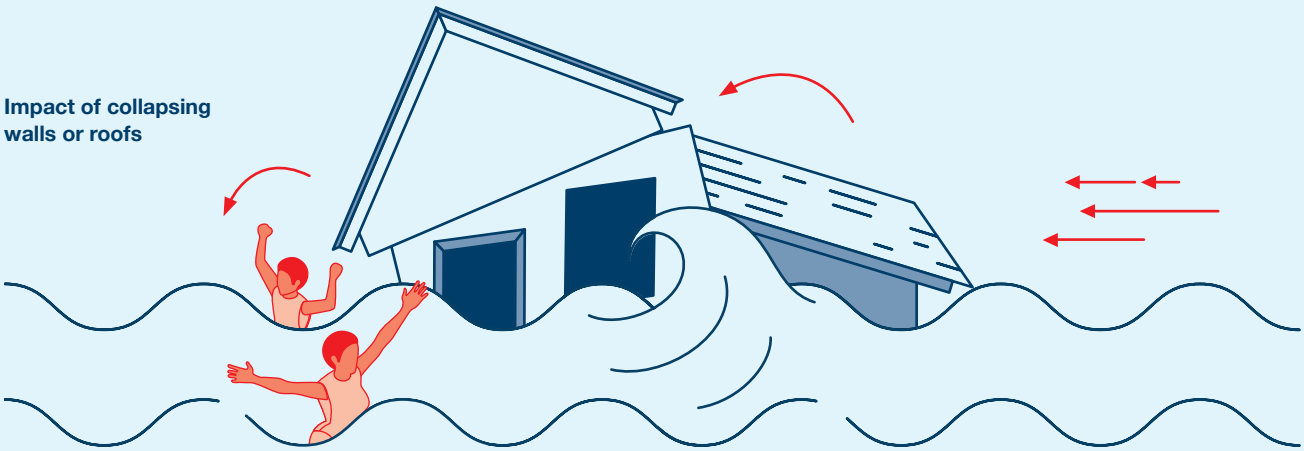
Being swept away by rising flood waves



Impact of water walls, or rapidly carried debris



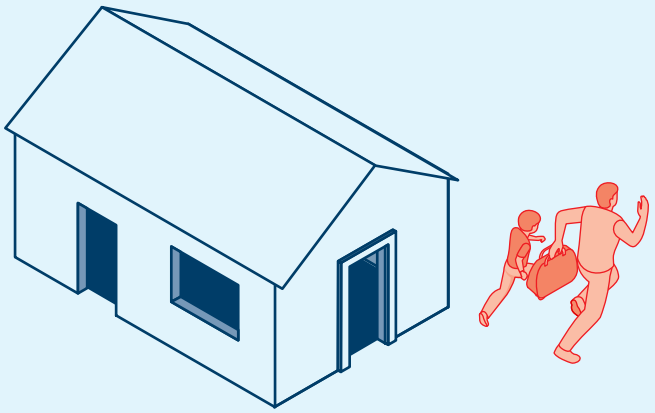
Impact of collapsing walls or roofs



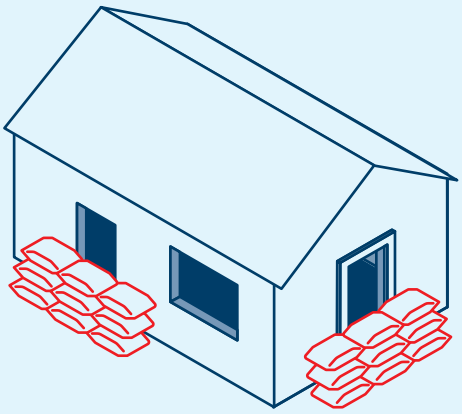
B 2.3.4. Rapid floods: typical community coping mechanisms

Typical types of coping mechanisms include:

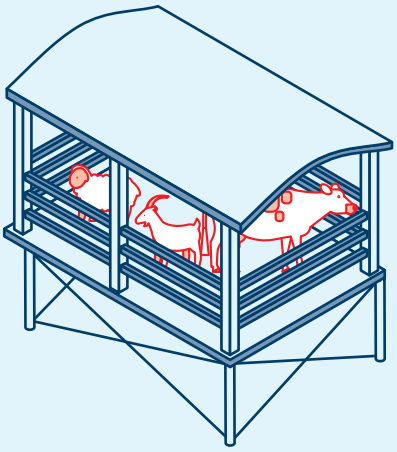
Evacuation



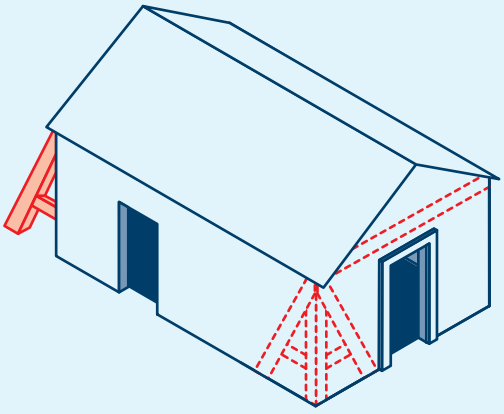
Sandbagging of doors and apertures



Raised floors for livestock



Reinforcement of roof support structures, through strapping and extra poles for under-support

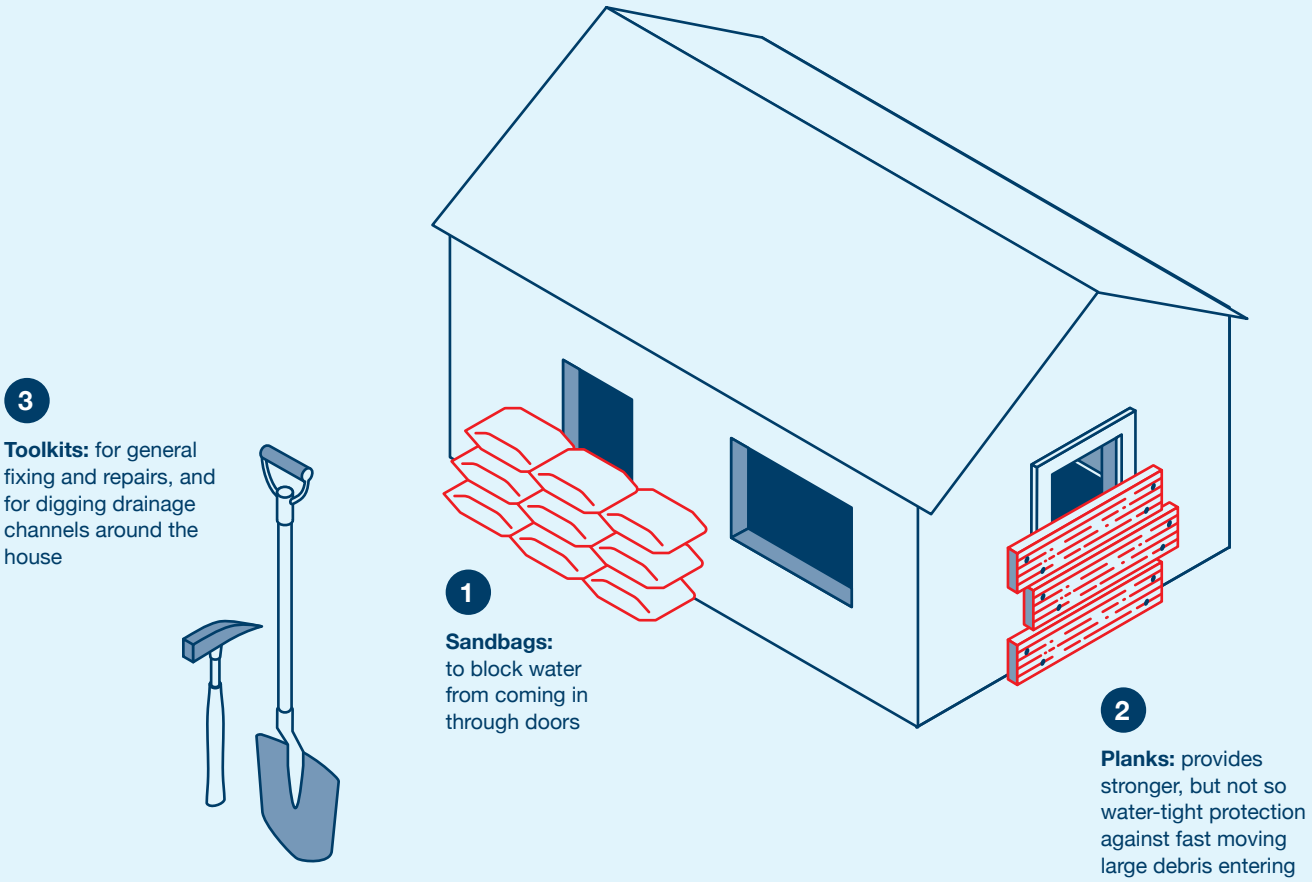


B 2.3.5. Rapid floods: typical shelter early action technical interventions

Typical types of EAP shelter technical interventions include:

Material	Typically used for	Rule-out Factors	Do's and Don't's
1 **Empty sandbags**	To block water from coming in through doors	• Only use with housing types with a limited number of narrow doors or openings, as it is not practicable for more open-plan housing designs. Families with persons with disabilities, or other relevant vulnerabilities will need to be assured of support to fill and place the sandbags before the distribution	**Do:** Ensure that the families will have the tools with which to fill the sandbags **Do:** consider distributing many smaller bags, rather than a smaller number of larger, heavier bags, if there is a significant number of families with vulnerabilities in the target communities
2 **Wood planking**	Provides stronger, but not so water-tight protection against fast moving large debris entering housing doors or apertures	• Use only if the walls of the houses are not rotten, or weaker than the wood of the planking. • Ensure that any fixings, e.g. nails, do not damage the strength of the surrounding doorframes or walls.	**Do:** combine only with waterproofing barriers such as heavy-duty plastic sheeting or sandbags **Do:** include long nails, for attachment through the walls
3 **NFIs**	for short stays in evacuation centres	• Only distribute bundles lightweight enough for emergency evacuation, and packaged in carry bags. Bags heavier than 20 kg should not be distributed. • Evacuation centres may need to have other types of support in place (food and water storage, privacy barriers and bedding, etc).	**Do:** use carrier bags or buckets with lids which are sealable and can be made waterproof **Do:** make sure that the bags have strong, multiple handles, or shoulder straps, for easier long-distance carrying **Do:** include plastic sheeting and rope, even if of lighter specifications, as privacy barriers for the evacuation centre
4 **Small tool kits, including hammers and trenching spades**	For general fixing and repairs, and for digging drainage channels around the house	• Only distribute tools which are lightweight enough for all family members to use, whilst at the same time still strong enough to be effective.	**Do:** remember bags or boxes for carrying and storing the tools **Don't:** distribute tools such as machetes, which are not permitted by the local authorities on security grounds

Typical types of EAP shelter technical interventions include:



B 2.3.6. Rapid flood early actions: possible shelter technical interventions for communities

Typical types of EAP shelter technical interventions at the community level, include:

Intervention	How	Do No Harm
1 **Protection of communal shelter buildings through sandbag barriers**	Community labour, with specific tools included	Ensure that there will be sufficient time for protecting both individual houses and the communal buildings
2 **Protection of key public infrastructure (e.g local bridges, public stairways), through sandbag-ging, to prevent it being washed away**	Community labour, with specific tools included. Additional rope or planking to bind and reinforce the sandbag walls if necessary	Ensure that such actions will be effective, and will not be lost in a typical flood

B 2.4. Floods – slow, and long-remaining

Slow- arriving floods can emerge above ground, by waters rising slowly over existing water channels, or in some cases can seep through the ground from over-filled underground sources. Such types of flooding are more likely to occur in areas with shallow gradients. Damage may occur during the initial movement and impact of the water, but over the longer period more damage may be caused either by erosion of lower walls, or by the silting up or slow collection of debris within houses. Waters which enter an area slowly are also likely to be more slow to recede again. Recovery may be slowed down generally, by the continued presence of water in both housing areas, and surrounding areas for livestock and livelihoods.

B 2.4.1. Slow floods: model decision-making checklist

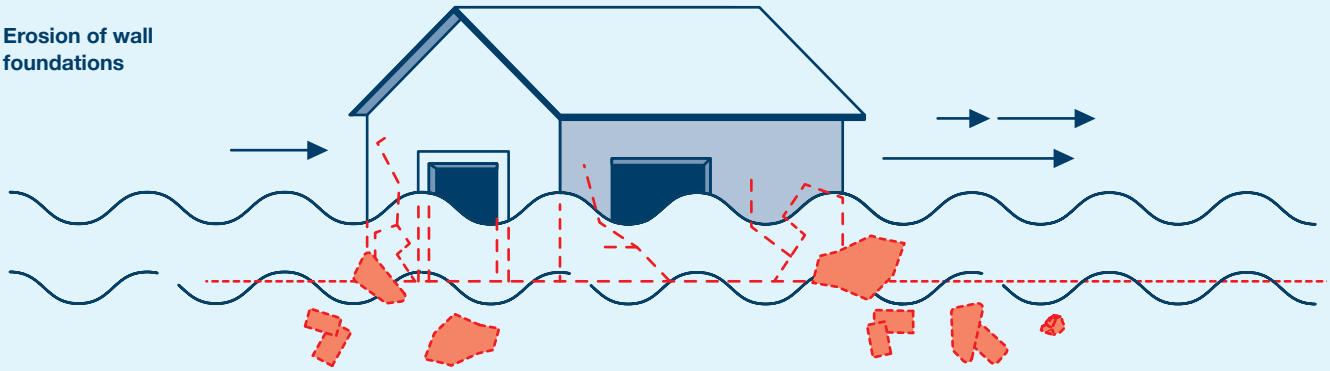
Use this sequential checklist as guidance to combine risk mapping, damage analysis, coping mechanisms and technical interventions for slow-flood EAPs. Remember that all programming must take into consideration the local context first. Consult with representative at-risk communities, and other national stakeholders, before finalising the technical aspects of an EAP.

Questions	Key considerations
1 **How soon into the flooding lead time do communities start their evacuation?**	If the evacuation starts within the first 24-48 hours of the flood-warning lead time, then do not include empty sandbags in the list of interventions, as there will not be time to fill them.
2 **How long has it taken flood waters to recede in previous floodings?**	If it has taken more than one week for flood waters to recede, consider distributing small tool kits as well as NFI kits, so that emergency shelters in dispersed evacuation areas can also be upgraded after initial installation.
3 **Does typical local housing include wooden framing in the housing corners, or other points of vertical support for the roof structures?**	If the roofs are placed entirely on earth or block walls, consider distributing shorter pieces of wood, and more strapping and fixing, so that even if the entire roof falls to the ground, it will stay intact, and can be re-installed into a new wall structure later, during reconstruction.

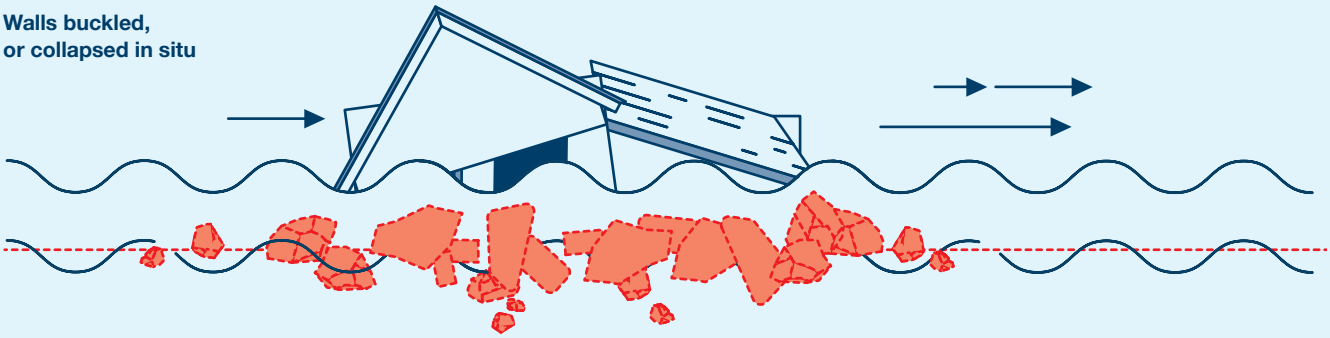
B 2.4.2. Slow floods: typical damage

Typical types of damage include:

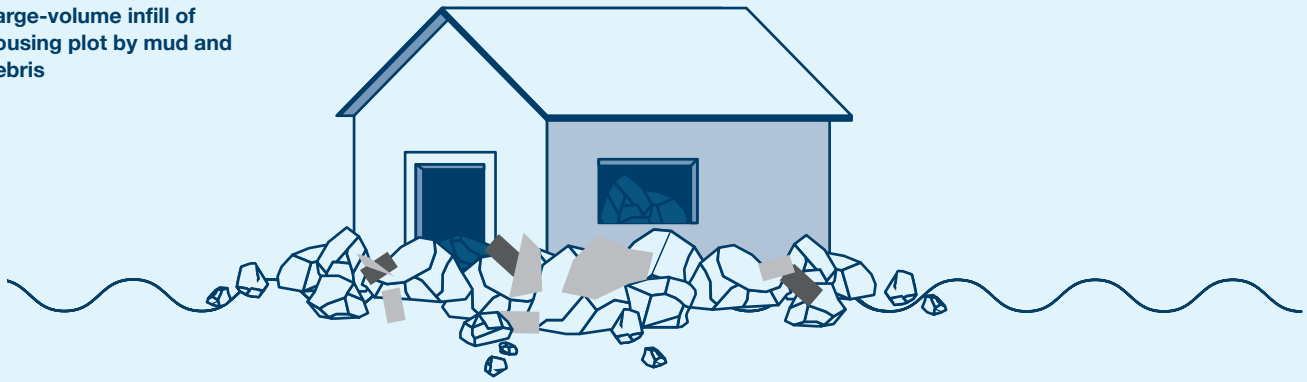
Erosion of wall foundations



Walls buckled, or collapsed in situ



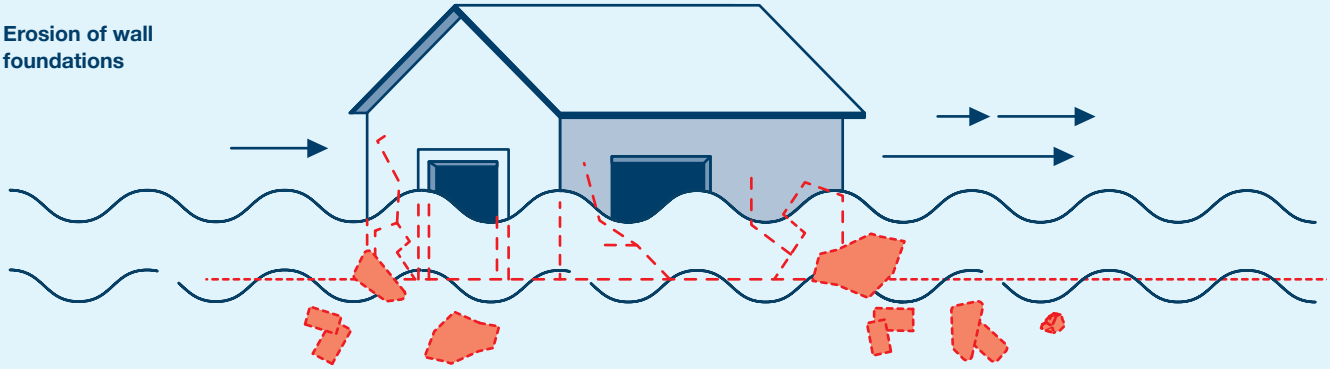
Large-volume infill of housing plot by mud and debris



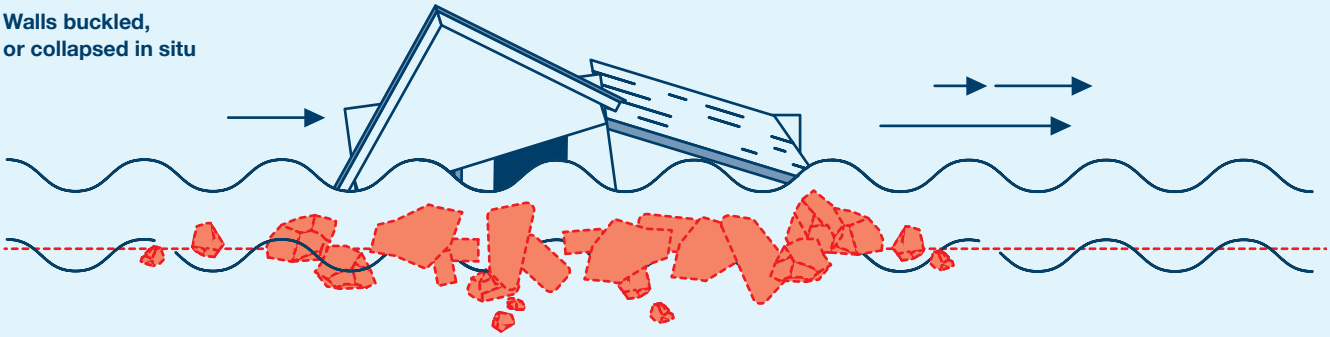
B 2.4.3. Slow floods: typical dangers

Typical types of danger include:

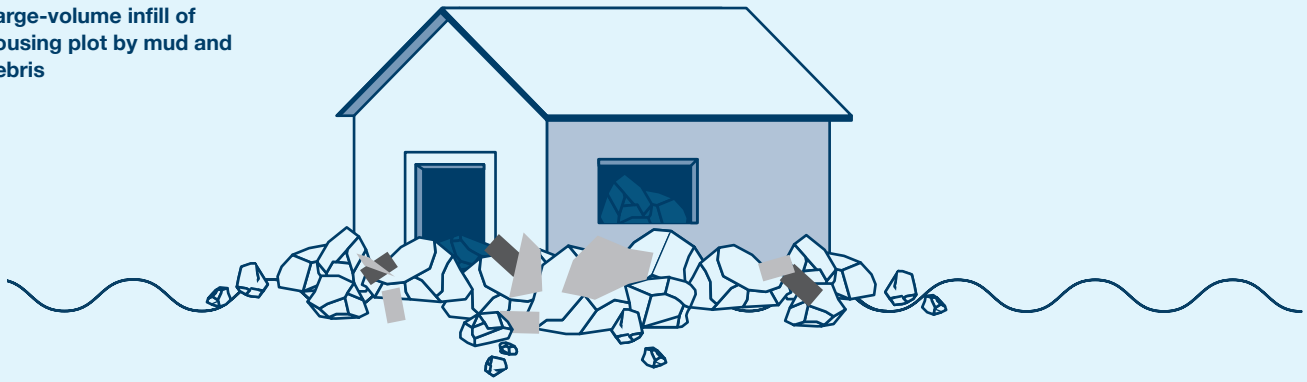
Erosion of wall foundations



Walls buckled, or collapsed in situ



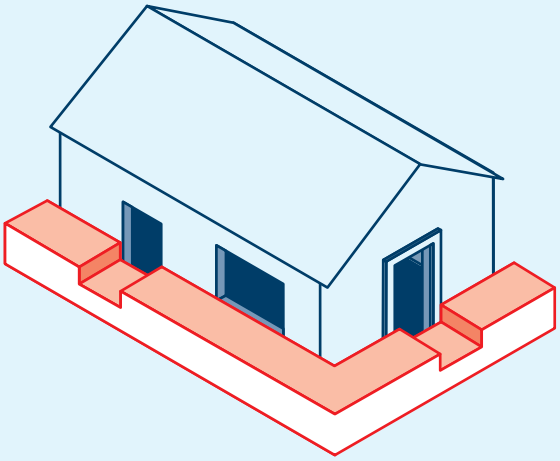
Large-volume infill of housing plot by mud and debris



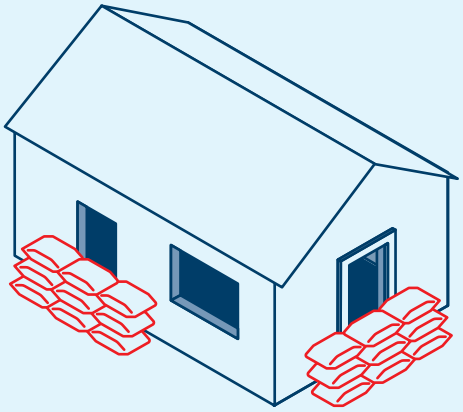
B 2.4.4. Slow floods: typical community coping mechanisms

Typical types of coping mechanisms include:

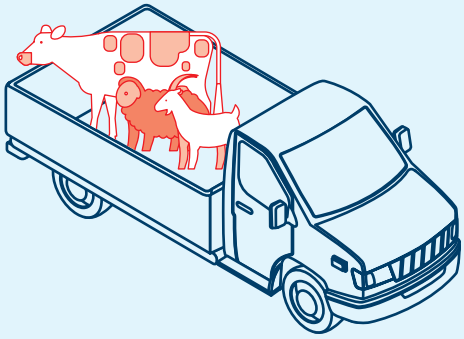
Broadening wall foundation external bases



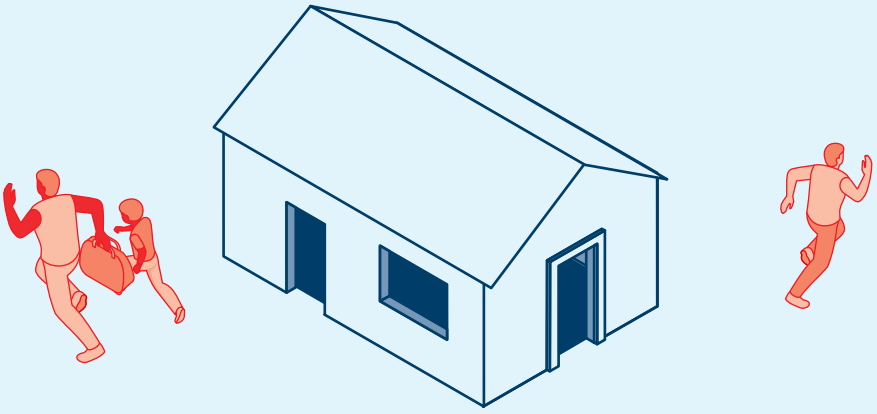
Sandbagging of doors and apertures



Evacuation of livestock



Informal evacuation, not in evacuation centers, but across dispersed areas

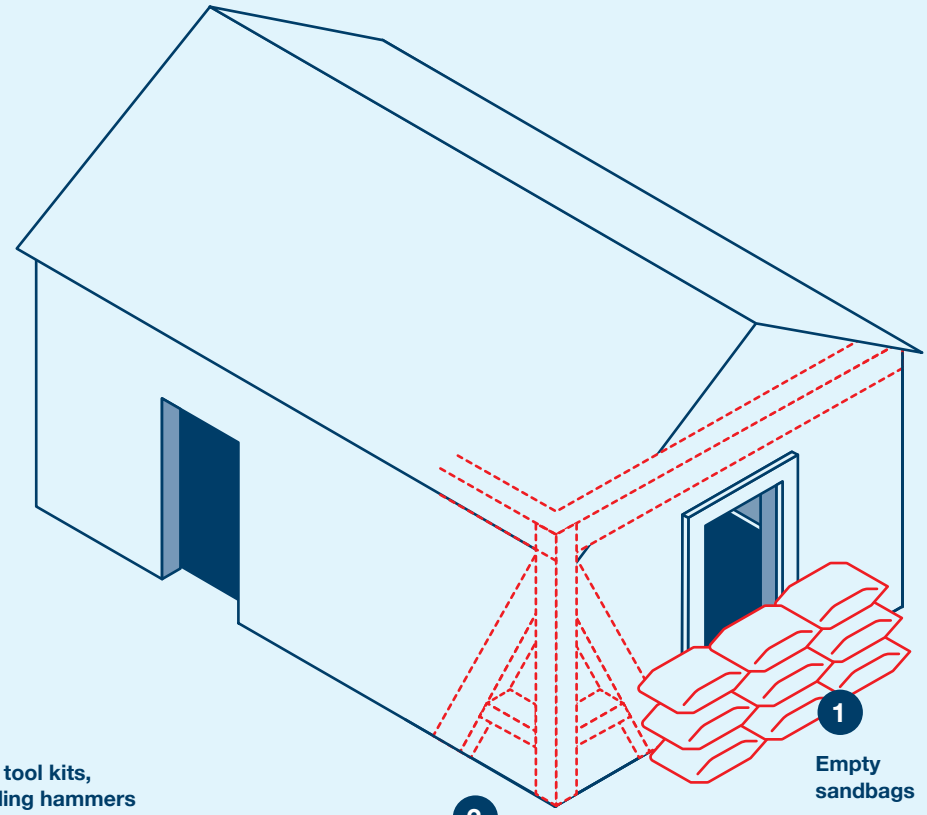


B 2.4.5. Slow flood early actions: possible shelter technical interventions

Typical types of shelter technical interventions include:

Material	Typically used for	Rule-out Factors	Do's and Don't's
1 **Empty sandbags**	To block water from coming in through doors	• Only use with housing types with a limited number of narrow doors or openings, as it is not practicable for more open-plan housing designs. Families with persons with disabilities, or other relevant vulnerabilities will need to be assured of support to fill and place the sandbags before the distribution	**Do:** Ensure that the families will have the tools with which to fill the sandbags **Do:** consider distributing many smaller bags, rather than a smaller number of larger, heavier bags, if there is a significant number of families with vulnerabilities in the target communities
2 **Wood pole props, with fixings**	for roofing structures	• Only use if the roofs are already firmly connected to the walls, or can be connected quickly and securely by distributed hurricane straps.	**Do:** Provide enough poles so that each vertical prop for the roof, also has its own diagonal bracing props, as well
3 **Small tool kits, including hammers and trenching spades**	For general fixing and repairs, and for digging drainage channels around the house	• Only distribute tools which are lightweight enough for all family members to use, whilst at the same time still strong enough to be effective.	**Do:** remember bags or boxes for carrying and storing the tools **Don't:** distribute tools such as machetes, which are not permitted by the local authorities on security grounds
4 **Bundled NFI kits, including bedding**	for dispersed and longer-term evacuation	• Only distribute bundles lightweight enough for emergency evacuation, and packaged in carry bags. Bags heavier than 20kg should not be distributed.	**Do:** make sure that bedding has its own waterproof bagging, with handles on for easier carrying **Do:** use carrier bags or buckets with lids which are sealable and can be made waterproof **Do:** make sure that the bags have strong, multiple handles, or shoulder straps, for easier long-distance carrying
5 **Plastic sheeting and fixings**	self-made emergency evacuation sheltering	• Only distribute if it is likely that the extreme weather will quickly subside, and not damage or destroy the emergency shelter or its materials.	Do: Consult to see whether the fixings will also need to include lightweight poles for the emergency shelter, if the area does not have trees or other possibilities of structural support

Typical types of shelter technical interventions include:



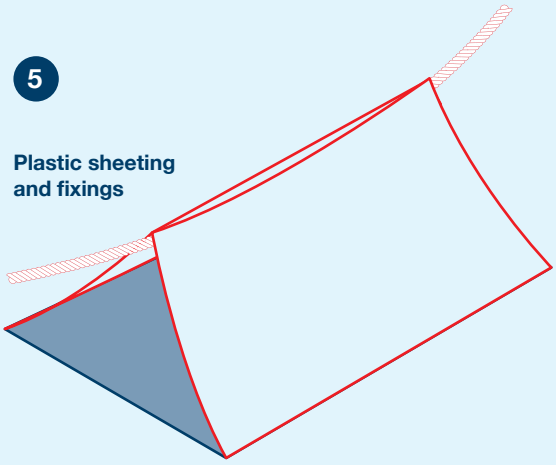
1 Empty sandbags

2 Wood pole props, with fixings

3 Small tool kits, including hammers and trenching spades

4 Bundled NFI kits, including bedding

5 Plastic sheeting and fixings



B 2.4.6. Slow flood early actions: possible shelter technical interventions for communities

Typical types of EAP shelter technical interventions at the community level, include:

Intervention	How	Do No Harm
1 **Protection of communal shelter building foundations through sandbag barriers**	Community labour, with specific tools included	Ensure that there will be sufficient time for protecting both individual houses and the communal buildings
2 **Digging of drainage channels to channel waters away**	Community labour, with specific tools included	Ensure that each channel leads into other water evacuation channels, as part of a network which goes beyond the boundaries of the community

B 2.5. Floods – landslides as caused by strong rains

Depending upon local geology, heavy rains and floods may trigger secondary disasters, in the form of landslides or mudslides. In recent years, the scale of such disasters has been increased by deforestation, and the removal of surface vegetation and soils for agriculture and industry. The weight of the materials in a landslide can have a massive impact upon housing, especially if the foundation ground under the house is also moved as a result of the land-sliding. Access roads may be blocked after a landslide, but it is also possible that recovery can be delayed by many land plots simply being swept away – or filled with large volumes of mud and debris.

Please note: Whilst the intensity and direction of continued heavy rain is somewhat predictable, the moment when an individual landslide is triggered is less predictable, and so forecasts may concentrate instead upon the overall risk of occurrences generally, within a wider geographic area.

There are thus very few cases, where early actions for landslides will be possible in line with current FbF standards. However, as forecasts may improve, possible early actions are included in this booklet.

B 2.5.1. Landslides: model decision-making checklist

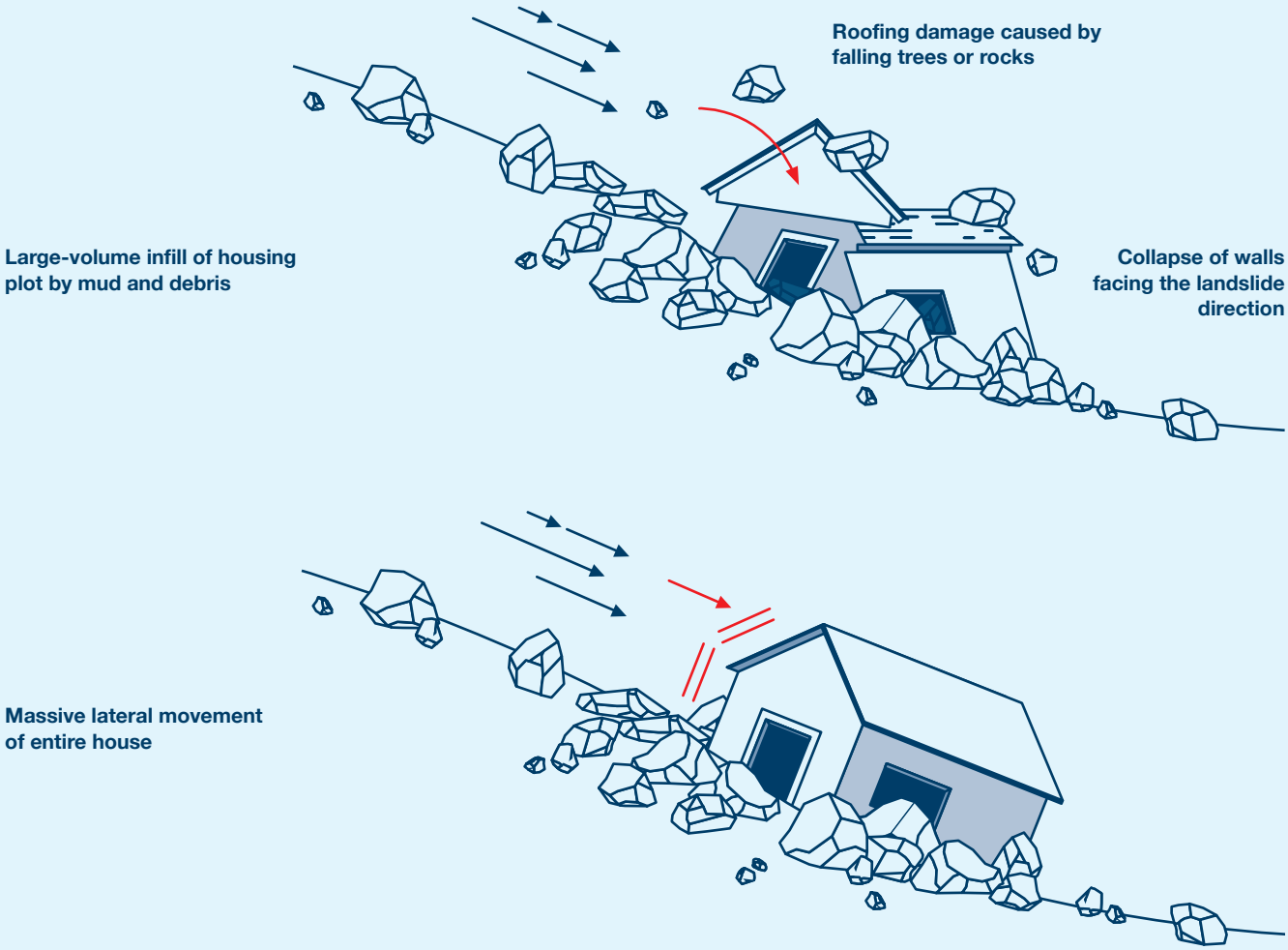
Use this sequential checklist as guidance to combine risk mapping, damage analysis, coping mechanisms and technical interventions for landslide EAPs.

Remember that all programming must take into consideration the local context first. Consult with representative at-risk communities, and other national stakeholders, before finalising the technical aspects of an EAP.

Questions	Key considerations
1 **How long has it taken flood waters to recede in previous floodings?**	If it has taken more than one week for flood waters to recede, consider distributing small tool kits as well as NFI kits, so that emergency shelters in dispersed evacuation areas can also be upgraded after initial installation.
2 **How wide are the doors and other apertures on both the uphill and downhill sides in typical houses?**	If apertures are small, then it is likely that the force against the uphill walls will be too great to be resisted, even with wooden props. Consider instead concentrating upon materials which will hold the roof structure intact, even if it moves downhill, such as roof strappings, short bracing and other fixings.

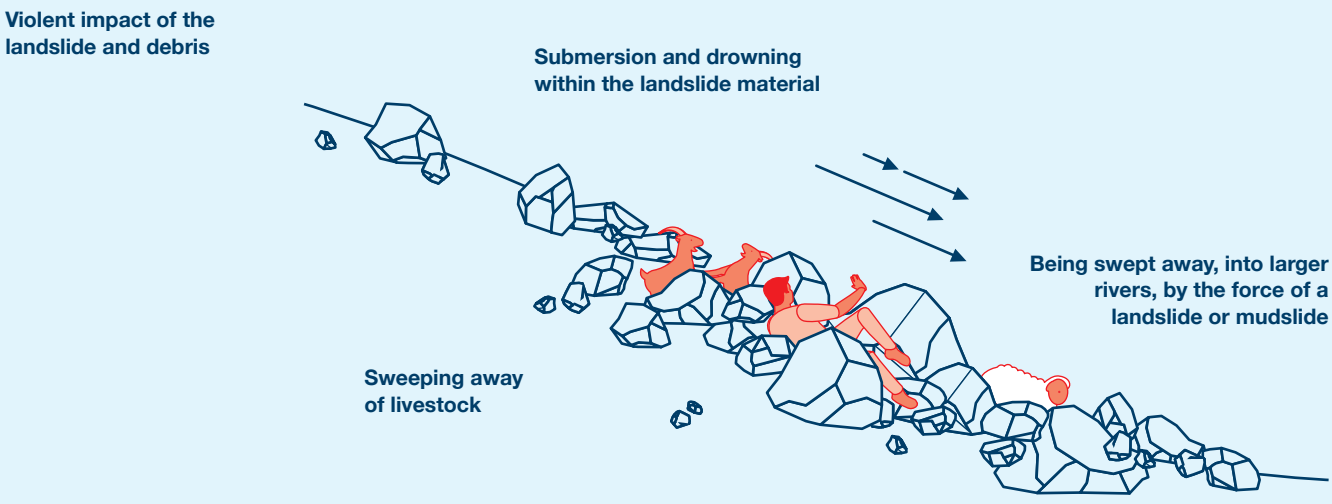
B 2.5.2. Landslides: typical damage

Typical types of damage include:



B 2.5.3. Landslides: typical dangers

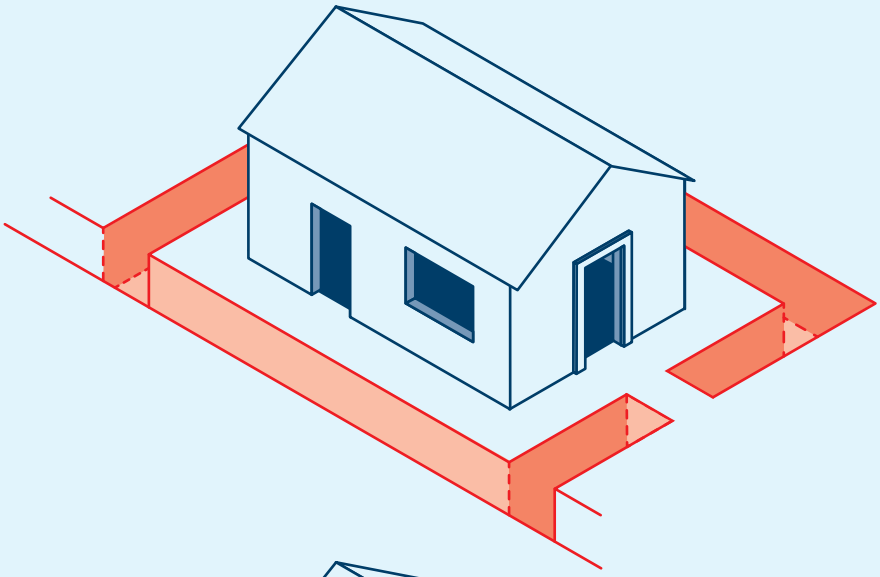
Typical types of danger include:



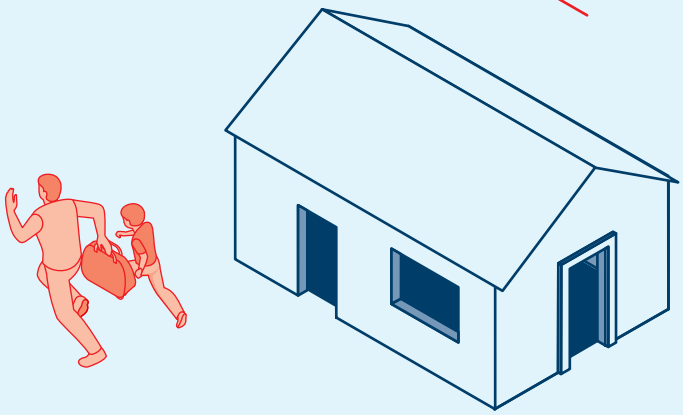
B 2.5.4. Landslides: typical community coping mechanisms

Typical types of coping mechanisms include:

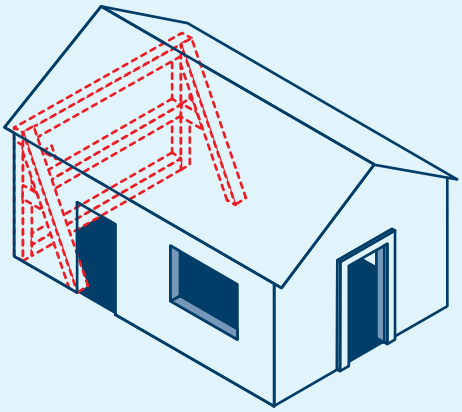
Diversion channels



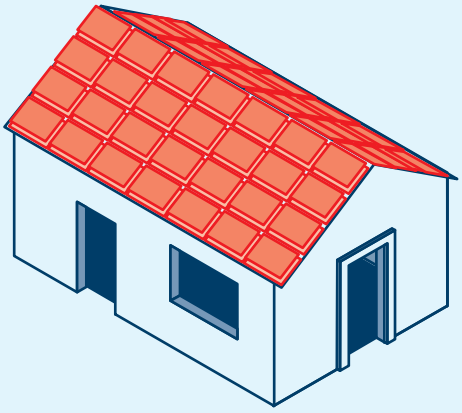
Evacuation



Strengthening or bracing of walls or wall corners facing uphill



Additional roofing materials (for falling debris from landslide in steep-gradient areas)

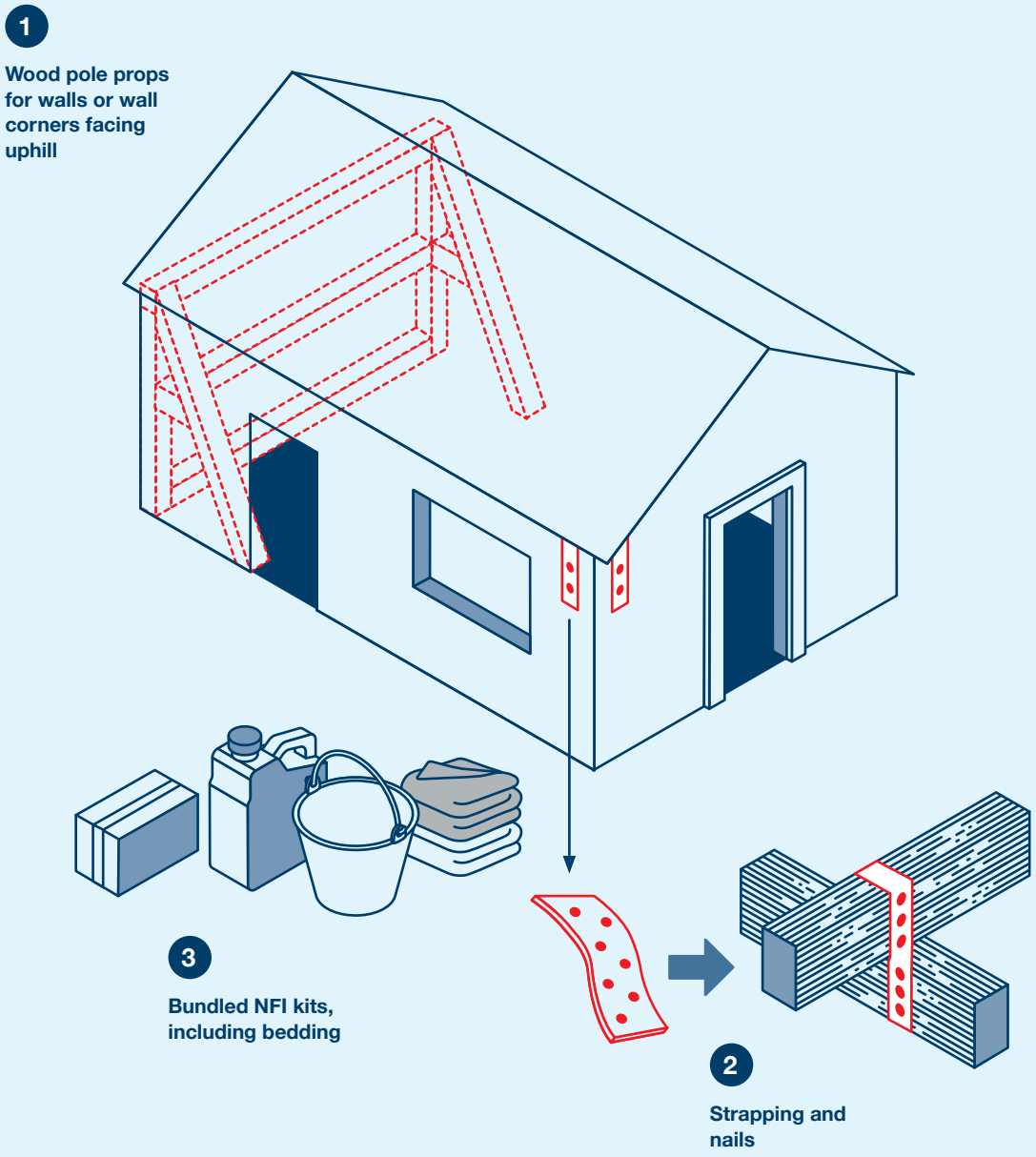


B 2.5.5. Landslides: typical EAP Shelter technical interventions

Typical types of EAP shelter technical interventions include:

Material	Typically used for	Rule-out Factors	Do's and Don't's
1 **Wood pole props for walls or wall corners facing uphill**	bracing of walls facing in the direction of earth or debris movement	• Poles can only be effectively attached to already existing vertical wall columns, not to flat brickwork or blocks. • Families should not assume that installation of wall bracing will protect them personally in all circumstances, and should not be seen as an alternative to evacuation.	**Do:** Distribute the poles together with strapping and fixings, in order to be attached to the walls
2 **Strapping and nails**	connecting roof structures to enhance the integrity of the entire house	• Strapping is only effective if there is sufficient length to tie all the structural elements of the house together, by tying the roof to structural elements of the walls underneath. • Refer to national standards for the required length and strength specifications of the strapping.	**Do:** make sure that the strapping is wide enough for a double line of the most commonly locally available sizes of nails **Do:** consider distributing hammers for each household, given the number of nailings necessary, and the need for the straps to be absolutely flush with each corner of the timber elements
3 **Bundled NFI kits, including bedding**	dispersed and longer-term evacuation	• Only distribute bundles lightweight enough for emergency evacuation, and packaged in carry bags. Bags heavier than 20 kg should not be distributed.	**Do:** make sure that bedding has its own waterproof bagging, with handles on for easier carrying **Do:** use carrier bags or buckets with lids which are sealable and can be made waterproof **Do:** make sure that the bags have strong, multiple handles, or shoulder straps, for easier long-distance carrying

Typical types of EAP shelter technical interventions include:



B 2.5.6. Landslides: possible EAP Shelter technical interventions for communities

Typical types of EAP shelter technical interventions at the community level, include:

	Intervention	How	Do No Harm
1	**Protection of communal buildings through propping and bracing**	Additional propping and bracing poles and fixings, with community labour	Do not promote the strengthened communal building as a safe shelter alternative to evacuation, unless it is absolutely certain that the building is nowhere near any landslide route
2	**Clearance of obstructions on communal evacuation routes**	Community labour, with specific tools and wheelbarrows for debris included	Ensure that the proposed evacuation routes actually do lead beyond the landslide zone

B 2.6. Drought (and displacement)

Drought in itself is unlikely to cause actual physical damage to buildings, but it is a form of extreme weather event that can be forecast, can cause extreme humanitarian impact, and one which through wider and indirect effects, has an impact upon housing and shelter, especially through forced displacement into host communities. The very long lead-time, the wider geographical range of possible displacement, and the potential for longer time periods of displacement however, may create challenges for making last-minute shelter interventions, and the nature of the disaster is such that there may be higher incidences of re-selling of shelter materials by beneficiaries, in order to buy food and other basic items.

B 2.6.1. Drought: model decision-making checklist

Use this sequential checklist as guidance to combine damage analysis, coping mechanisms and technical interventions for drought EAPs.

Remember that all programming must take into consideration the local context first. Consult with representative at-risk communities, and other national stakeholders, before finalising the technical aspects of an EAP.

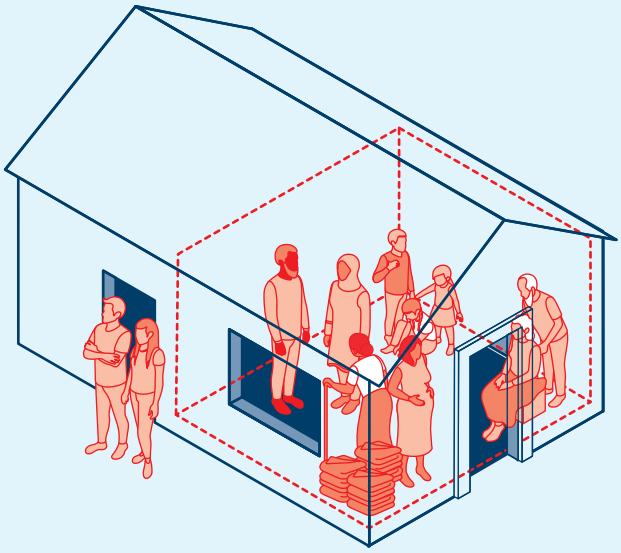
	Questions	Key considerations
1	**Does the background for any drought-related food insecurity include failure of the local markets?**	If the local markets are not functioning for live-saving items like food, then it is unlikely that they will function for NFIs either. Use cash interventions only if part of a wider, multi-sectoral strategy to inject cash into the local economy en masse.
2	**Do families regularly go into seasonal cycles of personal debt, as a coping mechanism?**	Consider giving cash, as a way to accelerate returns to recovery, and to reduce risk of exposure to other negative coping mechanisms. Giving direct distribution of NFIs in this situation may simply result in wide-scale re-selling, and further weakening of the local markets.

B 2.6.2. Drought: typical damage

Drought does not typically cause actual damage to housing, but may be the indirect cause of stresses within shelter, through causing displacement of populations.

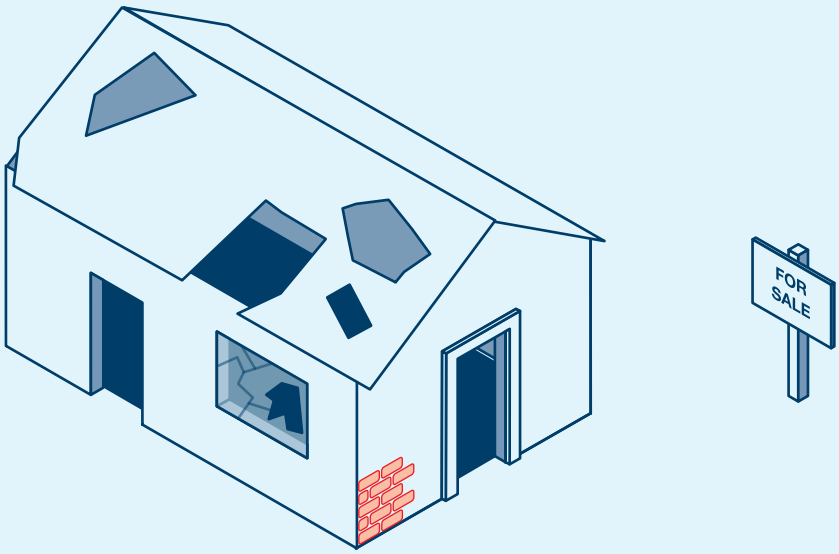
Typical types of stresses and dangers include:

Too-small shared/ hosted accommodation



Insufficient access to water, other basic needs

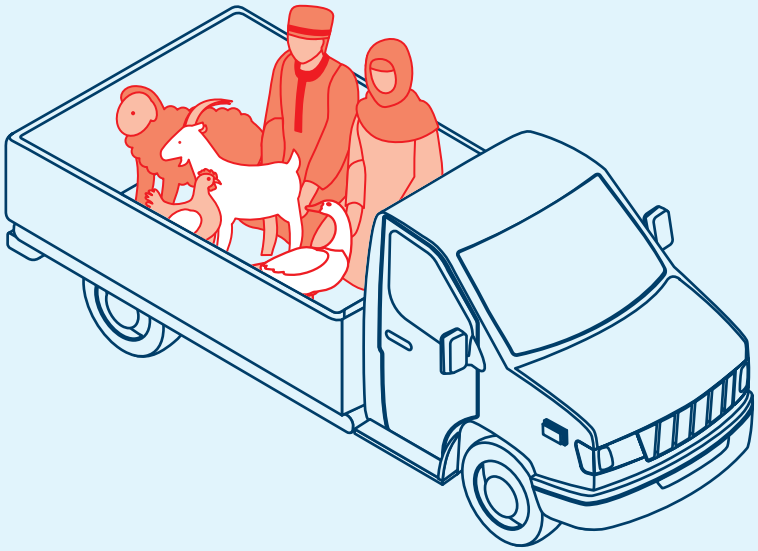
Reduced availability of natural materials (mud, water, wood) needed for maintenance or expansion of shelter



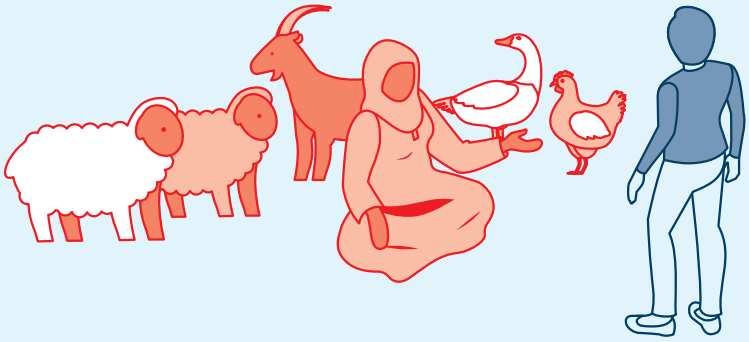
B 2.6.3. Drought: typical community coping mechanisms

Typical types of coping mechanisms include:

Displacement



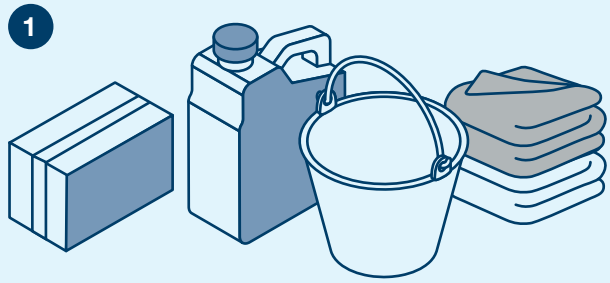
Selling of livestock

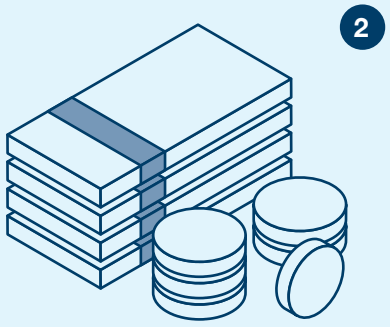


B 2.6.4. Drought early actions: possible shelter technical interventions

Typical types of shelter technical interventions include:

Material	Typically used for	Rule-out Factors	Do's and Don't's
1 **Bundled NFI kits, including bedding**	dispersed and longer-term evacuation	• Only distribute bundles lightweight enough for emergency evacuation, and packaged in carry bags. Bags heavier than 20 kg should not be distributed.	**Do:** make sure that bedding has its own waterproof bagging, with handles on for easier carrying **Do:** use carrier bags or buckets with lids which are sealable and can be made waterproof **Do:** make sure that the bags have strong, multiple handles, or shoulder straps, for easier long-distance carrying
2 **Cash**	rental, or support to hosting situations	• Only distribute cash if it is clear that the drought conditions have not been exacerbated by failures in the market. • Depending upon the length of displacement, there may need to be repeated distributions.	**Do:** calculate for the entire bundle of basic needs for the family and not just for shelter support, and also for the needs of their hosts





B 2.6.5. Drought early actions: possible shelter technical interventions for communities

Typical types of EAP shelter technical interventions at the community level, include:

Intervention	How	Do No Harm
Repair or upgrading of buildings to be used as short-term, multi-family communal shelters for those displaced	Cash or market-based methods to adapt the materials to the individual building needs, with community labour	Collective centres are not sustainable beyond the first emergency phase, so ensure that there is a follow-up shelter option for afterwards

B 2.7. Extreme cold

Cold does not in itself damage housing, but it can make inadequate housing uninhabitable. Extremes of cold can be prolonged – and deadly – in some countries, and the effects of inadequate coping mechanisms, including overcrowding in small rooms, can also be severe. Whilst the predictability of the onset of extreme cold periods is relatively clear, it is much more difficult to predict when a period of severe cold will end, which also means that there is less predictability about how many rounds of support will be needed, for cash or fuel distributions.

B 2.7.1. Extreme cold: model decision-making matrix

Use this sequential check-list as guidance to combine damage analysis, coping mechanisms and technical interventions for extreme cold EAPs.

Remember that all programming must take into consideration the local context first. Consult with representative at-risk communities, and other national stakeholders, before finalising the technical aspects of an EAP.

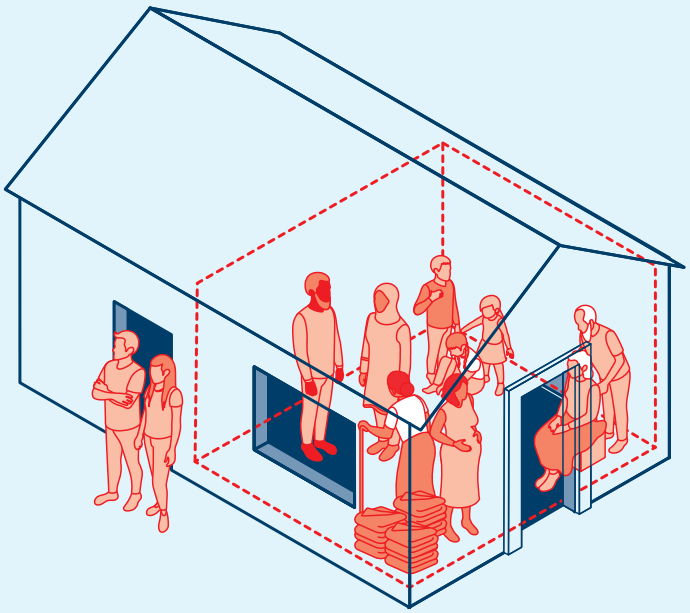
Questions	Key considerations
1 **Are those suffering from the cold living in finished or unfinished houses?**	If families are living in unfinished houses, then the support may need to be much more substantial, and may also need to take into consideration permission to intervene, if the families are occupying the houses without any tenure agreement.
2 **Is the predominant problem a failure to access heating fuel, or a failure to properly insulate the house?**	Lack of affordable or accessible fuel may be caused by market failures, for which cash responses could be used – with caution. Needs for housing insulation may be addressed through more conventional methods of materials distributions.

B 2.7.2. Extreme cold: typical damage

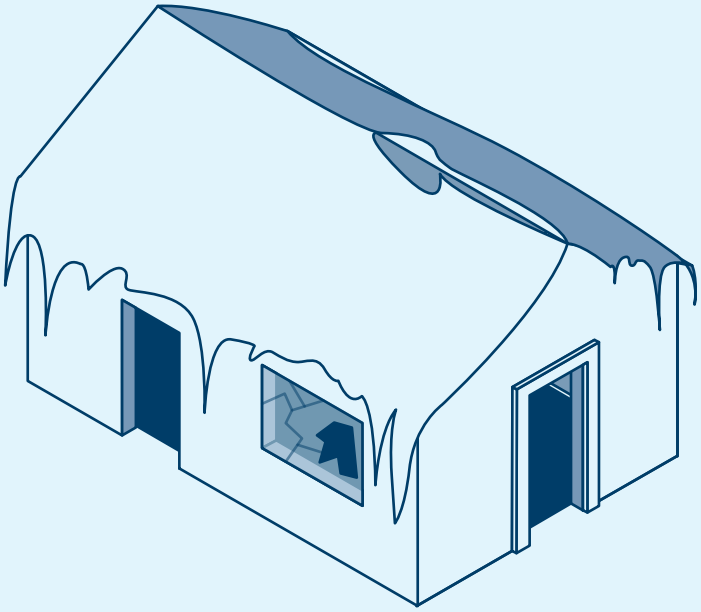
Extreme cold does not typically cause actual damage to housing, but may expose the pre-existing weaknesses in insulation in the housing, or may be the indirect cause of stresses within the housing, as household crowd into single small rooms in an effort to stay warm.

Typical effects include:

Too-small shared rooms



Degradation of existing housing materials, through combinations of freezing, rain or snow

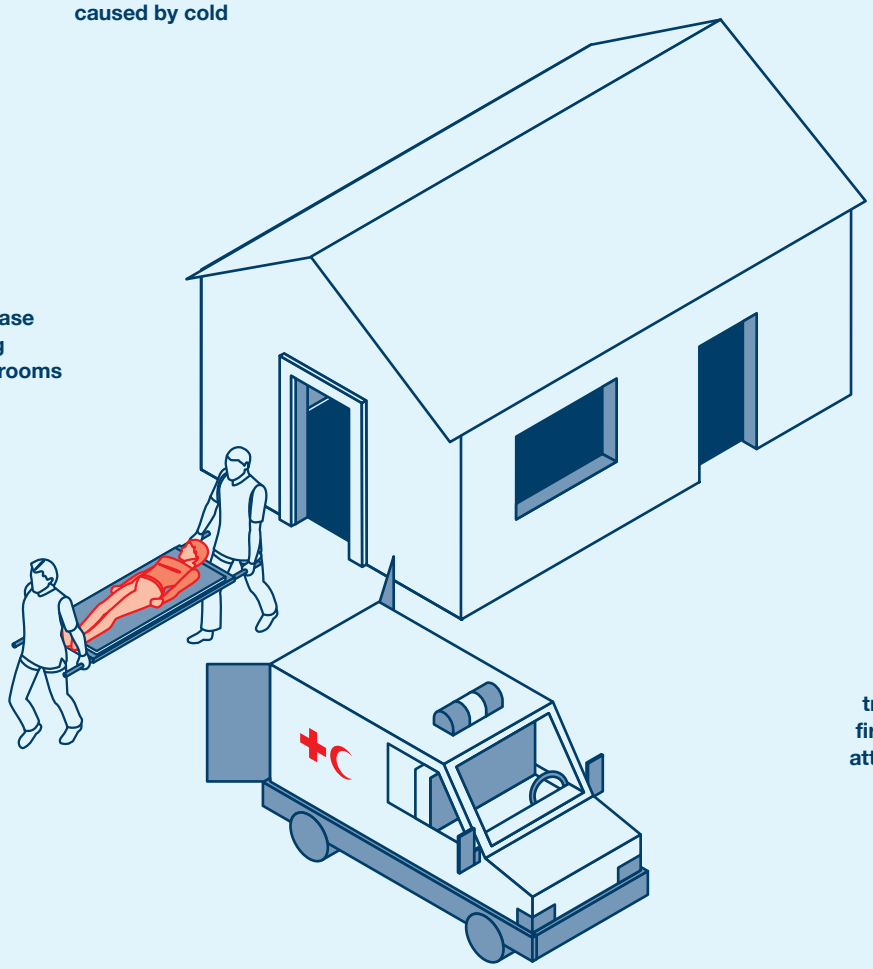


B 2.7.3. Extreme cold: typical dangers

Typical dangers include:

Severe illness or death caused by cold

Heightened risk of communicable disease caused by crowding together into small rooms

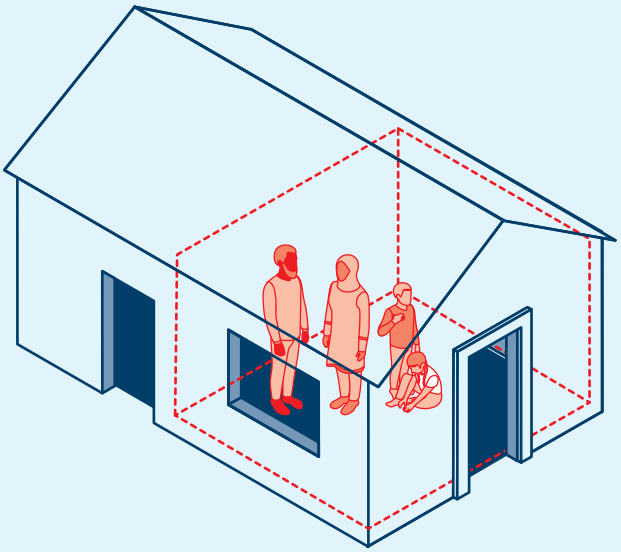


Suffocation, respiratory tract illnesses, and risk of fire, caused by inadequate attempts to heat the house

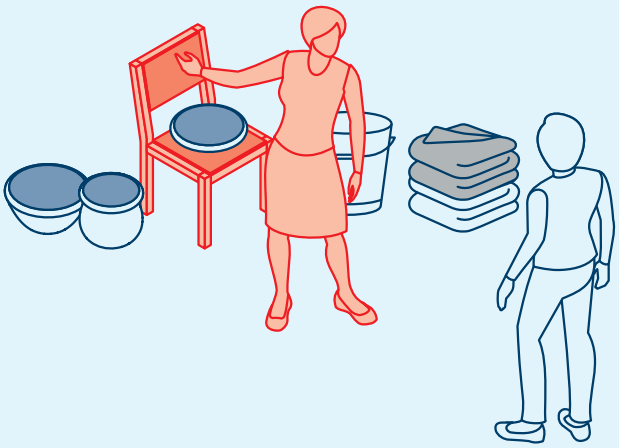
B 2.7.4. Extreme cold: typical community coping mechanisms

Typical types of coping mechanisms include:

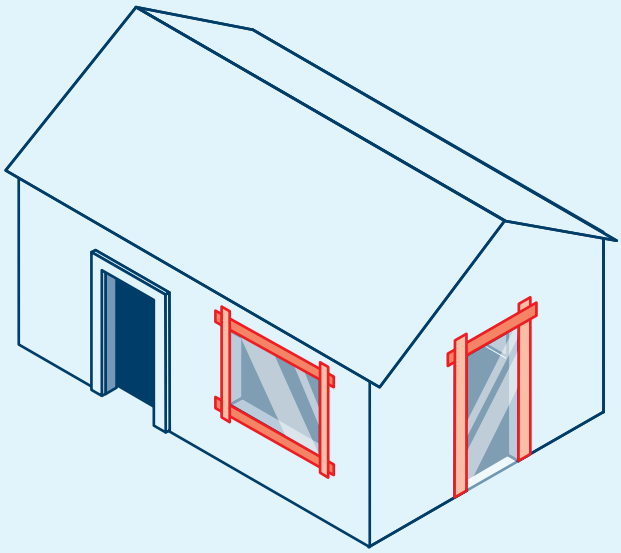
Congregating in smaller rooms



Selling off of belongings to buy fuel for increased heating needs



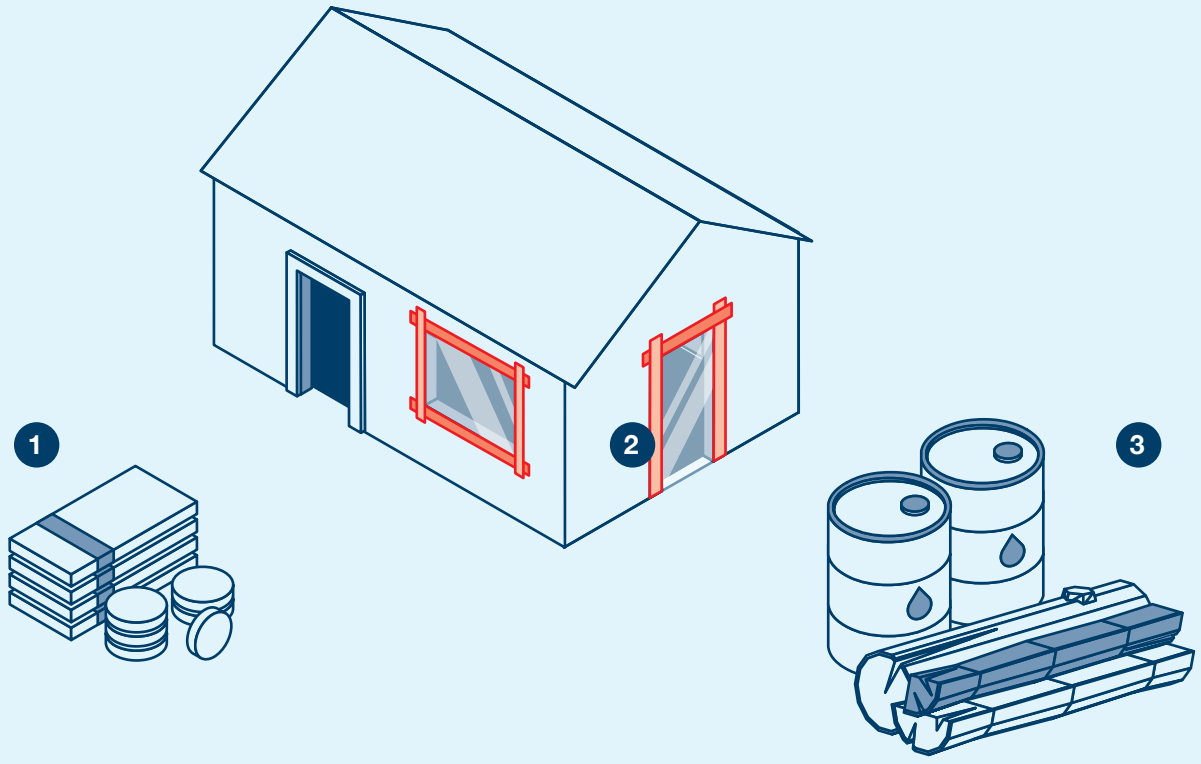
Sealing off, of windows and doors and other gaps in walls and roofs



B 2.7.5. Extreme cold early actions: possible Shelter technical interventions

Typical types of EAP shelter technical interventions include:

Material	Typically used for	Rule-out Factors	Do's and Don't's
1 **Cash**	purchase of heating fuel, or warmer clothing, bedding or sealing-off materials	• Only distribute cash if it is clear that lack of access to fuel has not been exacerbated by failures in the market. • Depending upon the length of the winter, there may need to be repeated distributions.	**Do:** calculate for the entire bundle of basic needs for the family and not just for shelter support
2 **Sealing-off kits**	blocking the cold, by closing or adding extra layers of insulation to windows, doors, or unfinished walls and roofs	• Only do direct distributions if cash has been shown to be ineffective.	**Do:** make sure that the families are still able to adequately ventilate their homes, to avoid death or disease through smoke asphyxiation
3 **Fuel distributions**	Heating indoor rooms occupied by the families	• Only do direct distributions if cash has been shown to be ineffective.	**Do:** make sure that the fuel can be used safely, and is in compliance with local authority guidelines



B 2.7.6. Extreme cold early actions: possible shelter technical interventions for communities

Typical types of EAP shelter technical interventions at the community level, include:

Intervention	How	Do No Harm
Provision of heating fuel in community centres	Cash or market-based methods	Ensure that the decision to heat the community centre is truly the overwhelming and free priority of the community, and not forced upon individual households by the local political or religious leader who owns the building

B 2.8. Heatwaves[2]

Heatwaves are extreme heat periods when temperatures, or temperature in combination with other factors, are unusually high and hazardous to human health and well-being. The threshold for when heat becomes dangerous can differ greatly between different locations. Heatwaves in cities have a major impact on human health than on buildings, however damage may occur to infrastructure, like when road surfaces melt. Essential services are heavily impacted. In addition to hospitals, water and electricity are higher in demand potentially leading to shortages.

B 2.8.1. Heatwaves: model decision-making matrix

Use this sequential check-list as guidance to combine damage analysis, coping mechanisms and technical interventions for heatwaves EAPs.

Remember that all programming must take into consideration the local context first. Consult with representative at-risk communities, and other national stakeholders, before finalising the technical aspects of an EAP.

Questions	Key considerations
1 **Are those suffering from heatwaves living in finished or unfinished houses?**	If families are living in unfinished houses, then the support may need to be much more substantial, and may also need to take into consideration permission to intervene, if the families are occupying the houses without any tenure agreement.
2 **Is the predominant problem a failure to access cooling centres, or a failure to p roperly insulate the house?**	Lack accessible cooling centres must be addressed via service provisions so that the most vulnerables are taken charge of. Needs for housing insulation may be addressed through more conventional methods of materials distribution together with information campaigns on actions to be undertaken in order to reduce heat hazards to people's health.

[2] IFRC Heatwave Guide for Cities

B 2.8.1. Heat waves early actions: possible Shelter technical interventions housing and community level coping measures

In many parts of the world, heatwaves are predictable days or weeks in advance. This ability to predict heatwaves makes it possible to take anticipatory action to reduce the impacts before a heatwave occurs. A heat-health early warning system, coupled with an effective early action plan, can reduce heatwave impacts and ensure an effective response when a heatwave occurs.

Heatwaves can render housing inhabitable when inadequate insulation is built in and when poor materials are used. For example, with a one-week lead-time, a city may consider registering older people living alone and providing special visits to ensure they have adequate drinking water, access to cooling and information on how to mitigate heat related risks. A one-day lead time may provide just enough notice to warn the public via TV, radio and social media about the impending heatwave and the actions they can take to reduce the risk.

Material	Typically used for	Rule-out Factors	Do's and Don't's
1 **Cash**	Reflective surfaces (highly reflective paints), Painting building roofs light colors can increase reflectivity and reduce temperatures.	• Only distribute cash if a coherent plan is put in place including the reinforcement of the provision of essential services	**Do:** calculate for the entire bundle of basic needs for the family and not just for shelter support. Essential services must be provided, including water and electricity, supply throughout the heatwave
2 **Energy management plans – Water and electricity supplies**	Heatwaves can represent a significant problem for electricity service providers. During a heatwave demand for cooling can increase dramatically, leading to blackouts or a reduction in electricity supply.	• The most vulnerable people need to be relocated to cooling centres daily or to medical facilities for monger periods	**Don't:** Electricity disruptions can have knock-on effects for other infrastructure and essential services that depend on a reliable supply of energy. **Do:** ensure that officials manage peak electricity demand, work to incorporate passive cooling strategies in buildings, and ensure the availability of backup energy sources for critical infrastructure.

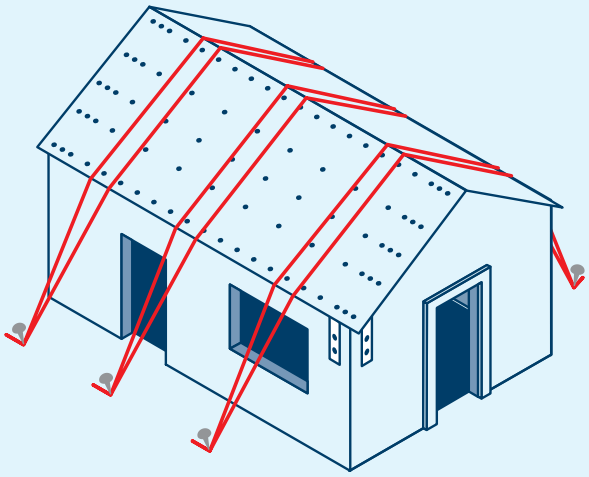
B 2.8.2. Heatwaves shelter and settlement technical interventions for communities on a longer-term basis

Intervention	How	Do No Harm
1 **Additional water services**	Local government investment in water services and infrastructure can strengthen a city's resilience to heatwaves.	**Do:** install (or repair) drinking water fountains and water sprays; spray streets with water. Cities in water-stressed locations should focus on installing and repairing drinking water fountains so that people can stay well hydrated during a heatwave Encourage officials to manage peak electricity demand, to work to incorporate passive cooling strategies in buildings, and to ensure the availability of backup energy sources for critical infrastructure. Installing solar panels on rooftops can provide an alternative eco-friendly source of energy that can also reduce the demand on central power generation.
2 **Urban greening – Green public spaces**	Urban greening can be a very effective method for city heat mitigation, as shade decreases the surface temperature, which, in turn, reduces the heat transmitted into buildings and the atmosphere. There are also important benefits to urban greening such as more effective management of water runoff during storms.	**Do:** encourage establishing parks and open spaces, planting trees to help create places of refuge during a heatwave, keeping the city functioning. The distribution of all measures throughout the city should be for all residents, regardless of their socio-economic status. Ensure maintenance of green public spaces
3 **Car free zones**	Designate areas within a city as car-free zones.	**Do:** ensure car-free areas are only accessible by public transport, foot or bicycle, reducing emissions of heat, pollutants and greenhouse gases. Bus lanes can also be incorporated into a city's design, to encourage more use of public transport.

[2] IFRC Heatwave Guide for Cities

B 3. Typical shelter early actions

B 3.1. Tying down roofs

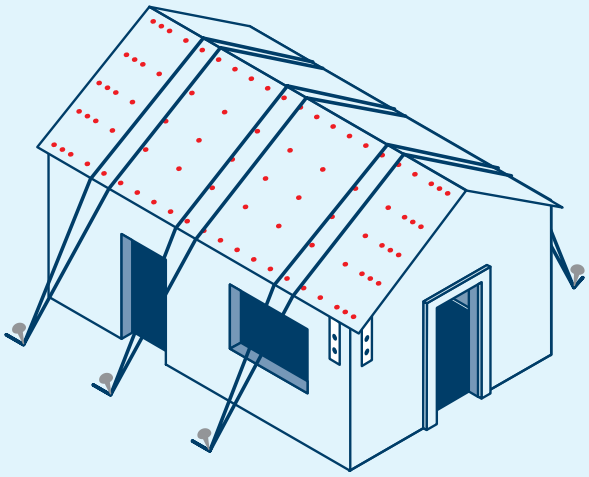


1

Rresources and capacities	Ropes and fixings
Time	Basic tying in quick
Impact	When connecting the whole house together, this can have a significant impact upon damage to roofing
Manpower	For most houses, two to three people will need to assist each other
Costs	Synthetic rope is low-cost
Sustainability	Ropes will fray and weaken over time
Tech skills	An understanding is needed about how to connect the whole house together with the ropes
Materials	Ropes and fixings are easily available in most markets, and are a standard NFI item
Pre-conditions/ Rule out factors	Solid foundations and lower walls
	Beneficiary knowledge how to use the ropes to bundle the entire house together
	Use only when there are heavy things, such as larger rocks, or larger trees which are unlikely to be uprooted, for anchors for the ropes
Do's and Don'ts	**Do:** distribute in longer rolls, rather than shorter lengths
	Do: distribute more than the minimum length – families may want to use some of the rope for other purposes, e.g. tethering livestock.
	Do: consult with technical officers or engineers about national standards for ropes
	Don't: forget to ensure that families have cutting tools to cut through the rope

not problematic | slightly problematic | problematic

B 3.1. Tying down roofs



2

Rresources and capacities	Umbrella Bolts
Time	The attachment procedure does not need any drilling into roof beams, but may need perforation of the roof sheets
Impact	Can have a significant impact on preventing the roof from flying away
Manpower	Can be done by one individual
Costs	Low-cost, comparable in cost to other types of bolts or construction nails
Sustainability	A permanent material, especially if made out of galvanised metal
Tech skills	Needs a basic understanding of how to attach the bolts around the beams
Materials	Bolts may be available in local markets, but may not be available in large enough quantities
Pre-conditions/ Rule out factors	Use only when the majority of beneficiaries have metal-sheet roofs
	For shingle or thatch roofs, longer-shank umbrella bolts to go around the trusses and plastic sheeting and ropes for the external roofing layers are needed
Do's and Don'ts	**Do:** check to make sure that the hats for the umbrella bolts are rounded and not flat, and are securely attached to the long bolt shanks
	Do: consider a mix of different lengths of bolts, for different thicknesses of wood
	Don't: forget to ensure that families have tools to puncture holes for the bolts through the roofing sheets

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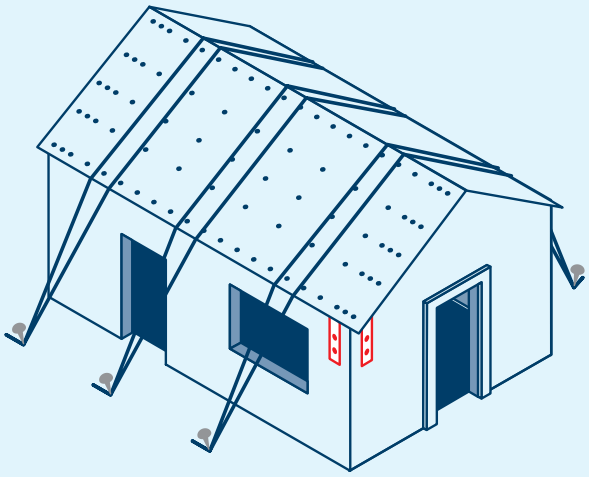
B 3.1. Tying down roofs

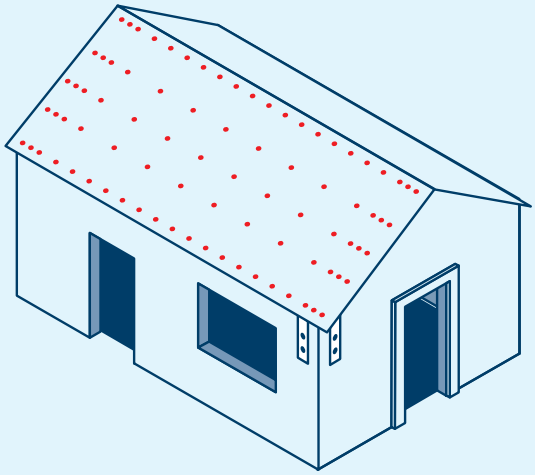


3

Rresources and capacities	Hurricane strapping and nails
Time	Needs time to position, bend, and nail the straps
Impact	Can have a significant impact on preventing the entire structure from flying away
Manpower	For most houses two people will be needed
Costs	Thicker straps will have increased costs, especially if not available in smaller local markets
Sustainability	A permanent material, especially if made out of galvanised metal
Tech skills	Needs an understanding of how far the straps need to be wrapped around different beams
Materials	Even if not available in local markets, the manufacture can be improvised easily in local workshops
Pre-conditions/ Rule out factors	Only effective if there is sufficient length to tie all the elements of the roof together, and also tie the roof to structural elements of the walls underneath
	National standards for the length and strength specifications
Do's and Don'ts	**Do:** make sure that the strapping is wide enough for a double line of the most commonly locally available sizes of nails
	Do: consider distributing hammers for each household, given the number of nailings necessary, and the need for the straps to be absolutely flush with each corner of the timber elements

not problematic | slightly problematic | problematic

B 3.2. Reinforcing roof attachment

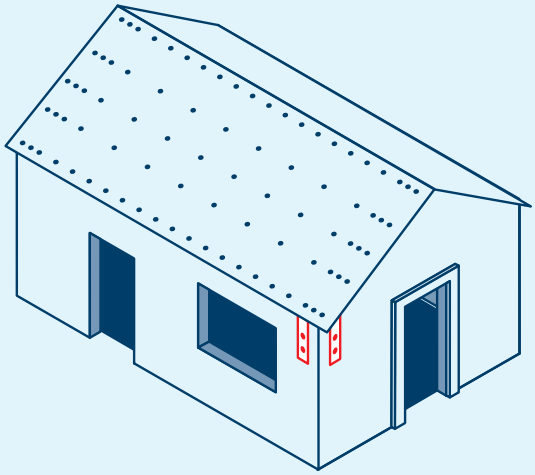


1

Rresources and capacities	Umbrella Bolts
Time	The attachment procedure does not need any drilling into roof beams, but may need perforation of the roof sheets
Impact	Can have a significant impact on preventing the roof from flying away
Manpower	Can be done by one individual
Costs	Low-cost, comparable in cost to other types of bolts or construction nails
Sustainability	A permanent material, especially if made out of galvanised metal
Tech skills	Needs a basic understanding of how to attach the bolts around the beams
Materials	Bolts may be available in local markets, but may not be available in large enough quantities
Pre-conditions/ Rule out factors	Use only when the majority of beneficiaries have metal-sheet roofs
	For shingle or thatch roofs, longer-shank umbrella bolts to go around the trusses and plastic sheeting and ropes for the external roofing layers are needed
Do's and Don'ts	**Do:** check to make sure that the hats for the umbrella bolts are rounded and not flat, and are securely attached to the long bolt shanks
	Do: consider a mix of different lengths of bolts, for different thicknesses of wood
	Don't: forget to ensure that families have tools to puncture holes for the bolts through the roofing sheets

not problematic | slightly problematic | problematic

B 3.2. Reinforcing roof attachment



2

Rresources and capacities	Hurricane strapping and nails
Time	Needs time to position, bend, and nail the straps
Impact	Can have a significant impact on preventing the entire structure from flying away
Manpower	For most houses two people will be needed
Costs	Thicker straps will have increased costs, especially if not available in smaller local markets
Sustainability	A permanent material, especially if made out of galvanised metal
Tech skills	Needs an understanding of how far the straps need to be wrapped around different beams
Materials	Even if not available in local markets, the manufacture can be improvised easily in local workshops
Pre-conditions/ Rule out factors	Only effective if there is sufficient length to tie all the elements of the roof together, and also tie the roof to structural elements of the walls underneath
	National standards for the length and strength specifications
Do's and Don'ts	**Do:** make sure that the strapping is wide enough for a double line of the most commonly locally available sizes of nails
	Do: consider distributing hammers for each household, given the number of nailings necessary, and the need for the straps to be absolutely flush with each corner of the timber elements

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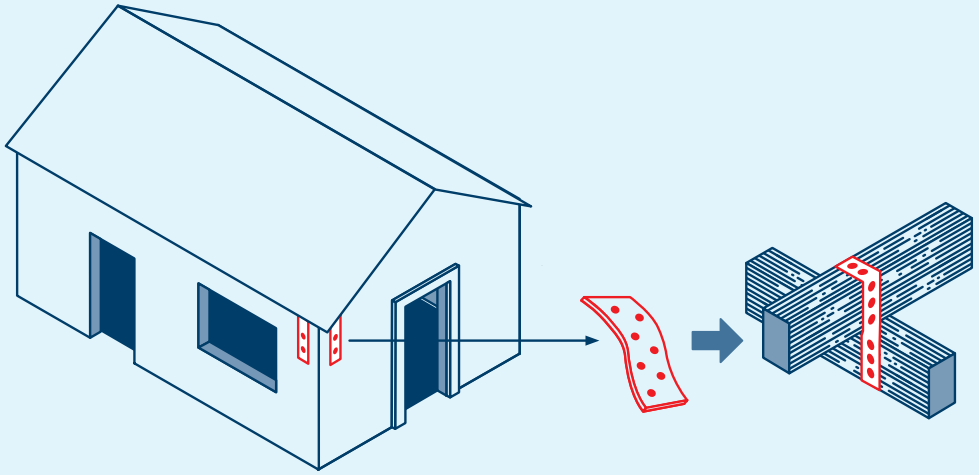
B 3.3. Reinforcing roof frame

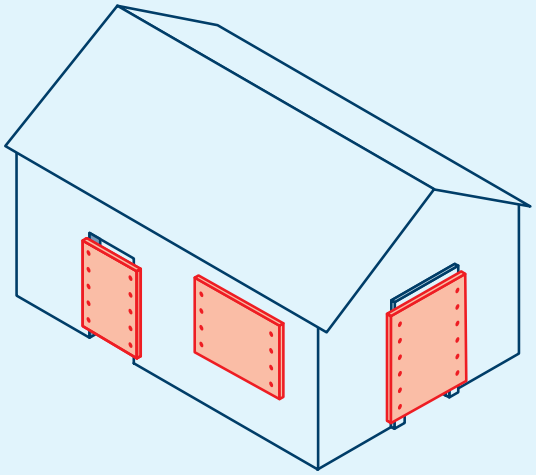


1

Rresources and capacities	Hurricane strapping and nails
Time	Needs time to position, bend, and nail the straps
Impact	Can have a significant impact on preventing the entire structure from flying away
Manpower	For most houses two people will be needed
Costs	Thicker straps will have increased costs, especially if not available in smaller local markets
Sustainability	A permanent material, especially if made out of galvanised metal
Tech skills	Needs an understanding of how far the straps need to be wrapped around different beams
Materials	Even if not available in local markets, the manufacture can be improvised easily in local workshops
Pre-conditions/ Rule out factors	Only effective if there is sufficient length to tie all the elements of the roof together, and also tie the roof to structural elements of the walls underneath
	National standards for the length and strength specifications
Do's and Don'ts	**Do:** make sure that the strapping is wide enough for a double line of the most commonly locally available sizes of nails
	Do: consider distributing hammers for each household, given the number of nailings necessary, and the need for the straps to be absolutely flush with each corner of the timber elements

not problematic | slightly problematic | problematic

B 3.4. Battening doors and windows

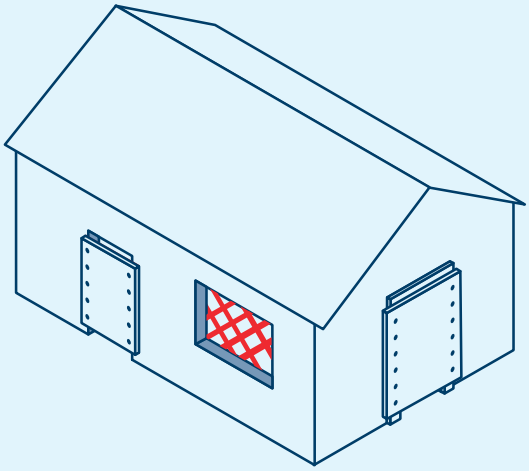


1

Rresources and capacities	Plywood and fixings
Time	The weight of the plywood increases the amount of time needed to install
Impact	Well placed plywood can protect the windows, but does not bind the entire house together
Manpower	At least three people are needed (two to hold the plywood, and one to insert the fixings)
Costs	Plywood is comparatively high cost, and to be effective enough will be needed for all windows and doors
Sustainability	Plywood eventually degrades, and is not a permament material
Tech skills	Complex skills may be needed, to ensure that the plywood is strongly fixed into the walls, without weakening the walls themselves
Materials	plywood and fixings are available on many local markets
Pre-conditions/ Rule out factors	Only if house walls are straight enough so that the plywood will be flush with the external walls
	Only if if fixings like bolts can go completely through the walls
Do's and Don'ts	**Do:** ensure that the plywood is multi-ply (at least three thicknesses) but still light enough for all households to attach and cover average size window apertures
	Don't: use chip-board, as this will not be held by the bolts in constant wet weather, and has less general strength

not problematic | slightly problematic | problematic

B 3.4. Battening doors and windows

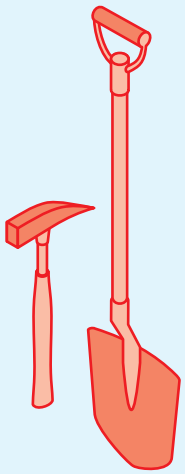


2

Rresources and capacities	Tape
Time	Adfhesive tape is quick and simple to apply
Impact	Although taping can prevent glass shattering, it does not provide larger amounts of protection, and is an emergency measure
Manpower	One person, needing no extra strength, can do the taping
Costs	Rolls of tape are low cost
Sustainability	Tape quickly loses ist adhesiveness, and is not a permanent material
Tech skills	Minimum guidance needed
Materials	Tape is easily available in most local markets
Pre-conditions/ Rule out factors	Refer to national standards for tape strength
	Do not use if the tape is not long enough to go at least 50cm beyond the window frame.
Do's and Don'ts	**Do:** tests to make sure that the tape can also be removed from the glass afterwards
	Do: make sure that the tape backing is waterproof

not problematic | slightly problematic | problematic

B 3.5. Undertaking general repairs

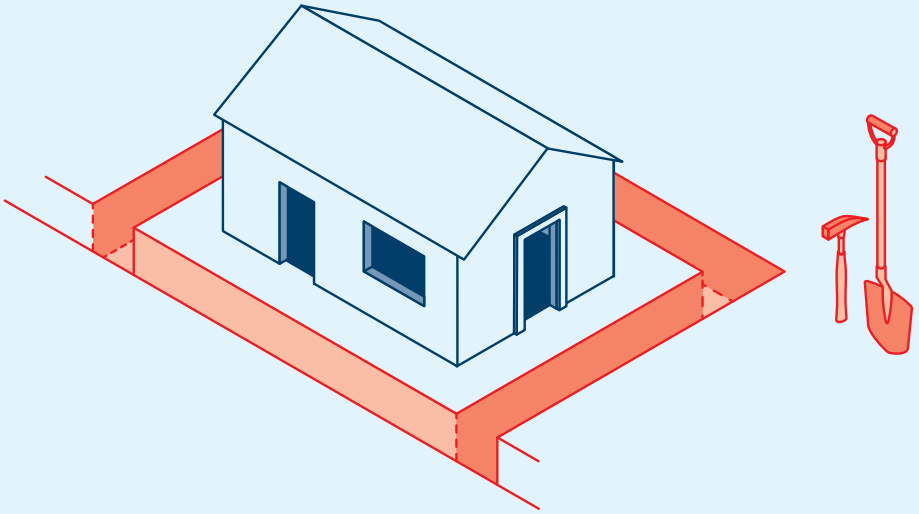


1

Rresources and capacities	Small tool kits (with trenching spades)
Time	Using small kits to do small repairs takes little time and can be broken down into smaller tasks as well
Impact	Depending upon the type of repair, the impact can be significant, and the right tools can make a difference
Manpower	All tools in the kits can be used by one person alone
Costs	Some items in the toolkit may cost more than kits of general NFIs
Sustainability	Some tools should last for years, whilst others may need periodic replacement
Tech skills	Simpl tools can be understood by everyone
Materials	All the tools in the kits are available in the local markets
Pre-conditions/ Rule out factors	Only tools which are lightweight enough for all family members to use
Do's and Don'ts	**Do:** remember bags or boxes for carrying and storing the tools
	Don't: distribute tools such as machetes, which are not permitted by the local authorities on security grounds

not problematic | slightly problematic | problematic

B 3.6. Digging drainage channels



1

Rresources and capacities	Small tool kits (with trenching spades)
Time	Using small kits to do small repairs takes little time and can be broken down into smaller tasks as well
Impact	Depending upon the type of repair, the impact can be significant, and the right tools can make a difference
Manpower	All tools in the kits can be used by one person alone
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Pre-conditions/ Rule out factors	Only tools which are lightweight enough for all family members to use
Do's and Don'ts	**Do:** remember bags or boxes for carrying and storing the tools
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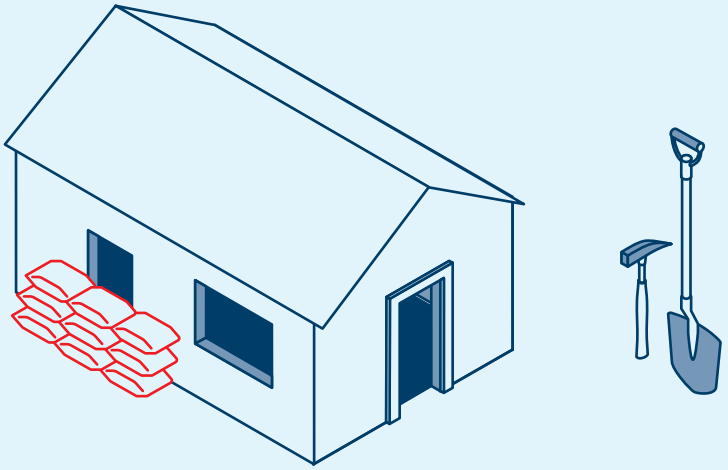
not problematic | slightly problematic | problematic

B 3.7. Sandbagging



1

Rresources and capacities	Empty sandbags
Time	Of all the actions, filling sandbags is the most time-consuming, and takes the most work energy
Impact	Sandbags can be effective, but only if they are placed high enough, tight enough, and across all openings
Manpower	To fill enough sandbags in a short space of time, multiple people are needed
Costs	Empty sandbags are low cost, and earth or sand may be free locally
Sustainability	Sandbag walls can last mutliple seasons, but are not permanent
Tech skills	Filling sandbags is not a skilled activity
Materials	Bags may be available on local markets, but may not be available in large quantities
Pre-conditions/ Rule out factors	Only use with housing types with a limited number of narrow doors or openings
	Only use with labour support for those with disabilities, or the elderly
Do's and Don'ts	**Do:** Ensure that the families will have the tools with which to fill the sandbags
	Do: consider distributing many smaller bags, rather than a smaller number of larger, heavier bags, if there is a significant number of families with vulnerabilities in the target communities

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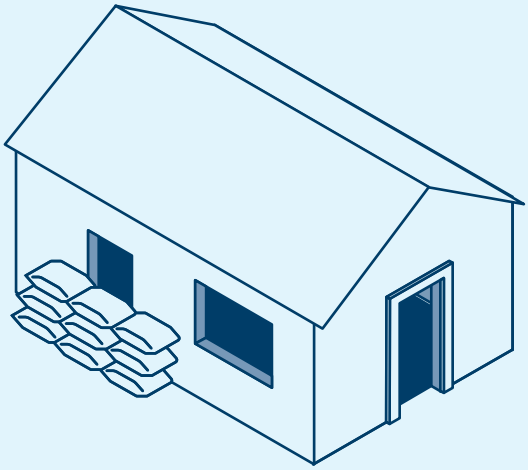
B 3.7. Sandbagging



2

Rresources and capacities	Small tool kits (with trenching spades)
Time	Using small kits to do small repairs takes little time and can be broken down into smaller tasks as well
Impact	Depending upon the type of repair, the impact can be significant, and the right tools can make a difference
Manpower	All tools in the kits can be used by one person alone
Costs	Some items in the toolkit may cost more than kits of general NFIs
Sustainability	Some tools should last for years, whilst others may need periodic replacement
Tech skills	Simpl tools can be understood by everyone
Materials	All the tools in the kits are available in the local markets
Pre-conditions/ Rule out factors	Only tools which are lightweight enough for all family members to use
Do's and Don'ts	**Do:** remember bags or boxes for carrying and storing the tools
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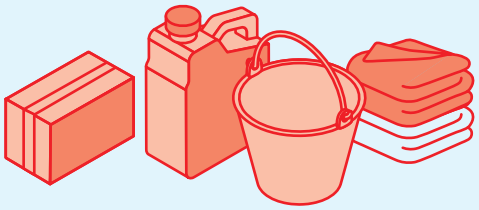
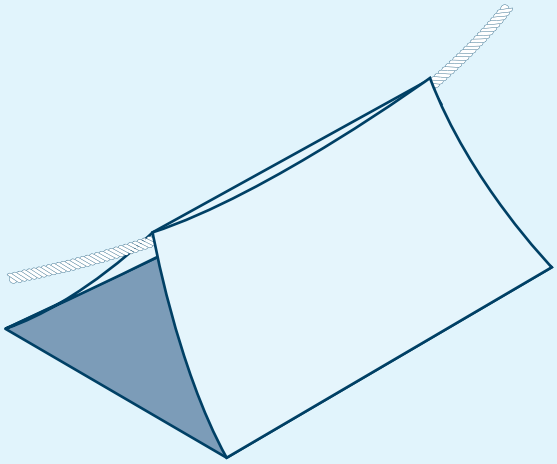
not problematic | slightly problematic | problematic

B 3.8. Distributing NFI bundles



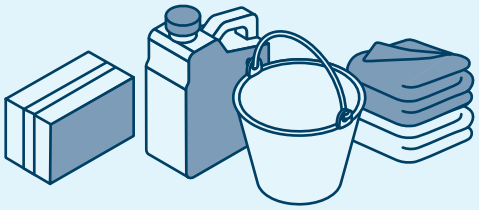


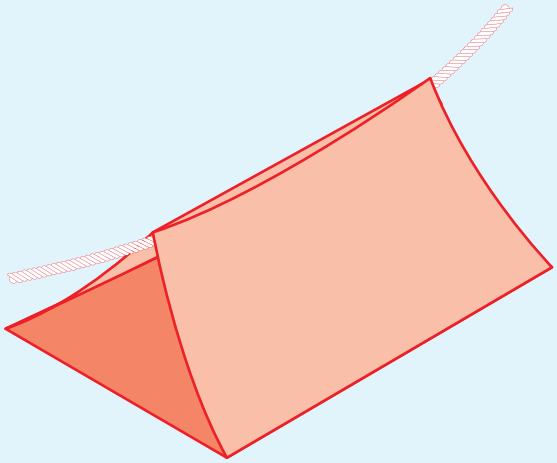
1

Rresources and capacities	NFI Kits
Time	Items in the kits should be ready to use, as it is an emergency intervention
Impact	Kits can provide warmth (blankets) and privacy (sheeting and attachments), but have limited impact on protecting or repairing housing
Manpower	Kits can be carried by one person
Costs	Kits are usually medium cost, compared with other options
Sustainability	Items in the kits are not expected to last more than the short term
Tech skills	Items are simple to use
Materials	Most if not all items are available in most local markets
Pre-conditions/ Rule out factors	Only distribute bundles lightweight enough for emergency evacuation
	Evacuation centres may need to have other types of support in place
Do's and Don'ts	**Do:** use carrier bags or buckets with lids which are sealable and can be made waterproof
	Do: make sure that the bags have strong, multiple handles, or shoulder straps, for easier long-distance carrying
	Do: include plastic sheeting and rope, even if of lighter specifications, as privacy barriers for the evacuation centre

not problematic | slightly problematic | problematic

B 3.8. Distributing NFI bundles



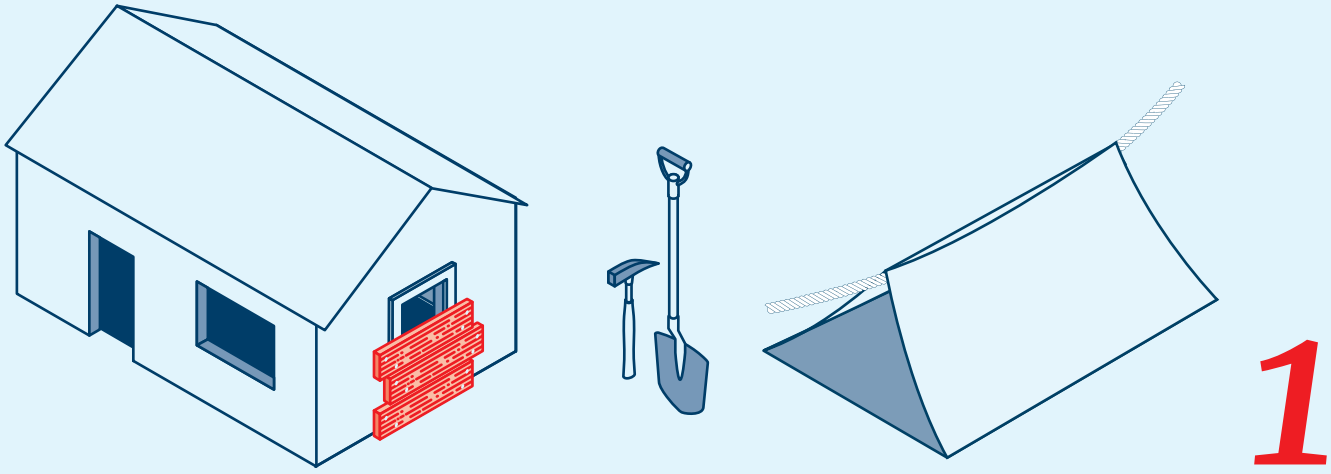


2

Rresources and capacities	Plastic sheeting and fixings
Time	Installing plastic sheeting can be done in a very short time
Impact	Sheeting can protect agains the weather, and provide privacy, but gives no structural support
Manpower	One or two people can put up plastic sheeting
Costs	Durable plastic sheeting is usually medium cost, compared with other options
Sustainability	Plastic sheeting degrades relatively rapidly
Tech skills	Easy to install
Materials	Available (although of varying quality) in all markets
Pre-conditions/ Rule out factors	Only distribute if it is likely that the extreme weather will quickly subside
Do's and Don'ts	**Do:** Consult to see whether the fixings will also need to include lightweight poles for the emergency shelter, if the area does not have trees or other possibilities of structural support

not problematic | slightly problematic | problematic

B 3.9. Hard blocking doors

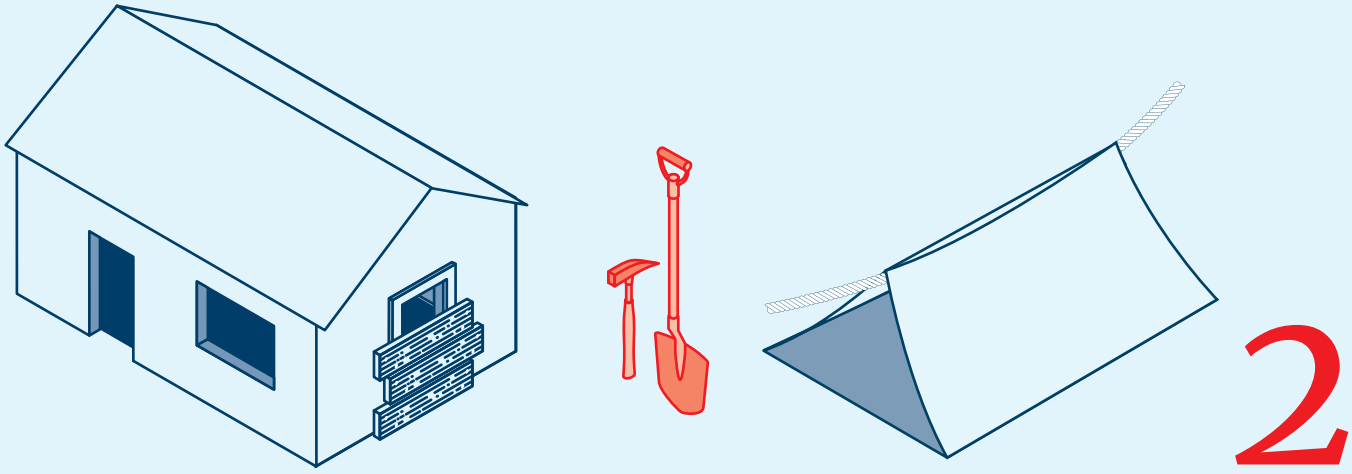


1

Rresources and capacities	Wood planking
Time	Installing heavy wood planking across all openings is time consuming
Impact	If done correctly planking can protect against larger debris, but is not waterproof alone
Manpower	Multiple people are needed for the installation, which also takes significant time
Costs	Planks of sufficient quality and strength are high cost
Sustainability	If properly treated, the planks can last multiple years
Tech skills	Some basic skills are needed in order to strongly attach the planks without damaging the walls of the house
Materials	Planks and fixings (of varying quality) are available in most local markets
Pre-conditions/ Rule out factors	Use only if the walls of the houses are not rotten, or weaker than the wood of the planking
Do's and Don'ts	combine only with waterproofing barriers such as heavy-duty plastic sheeting or sandbags
	include long nails, for attachment through the walls

not problematic | slightly problematic | problematic

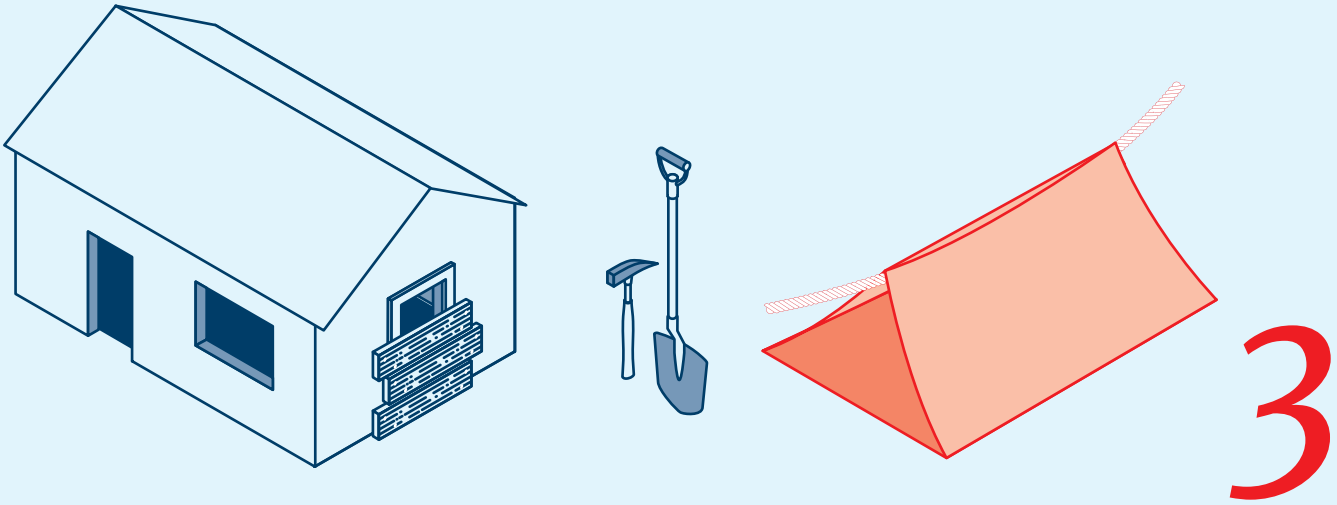
B 3.9. Hard blocking doors



Rresources and capacities	Small tool kits (with trenching spades)
Time	Using small kits to do small repairs takes little time and can be broken down into smaller tasks as well
Impact	Depending upon the type of repair, the impact can be significant, and the right tools can make a difference
Manpower	All tools in the kits can be used by one person alone
Costs	Some items in the toolkit may cost more than kits of general NFIs
Sustainability	Some tools should last for years, whilst others may need periodic replacement
Tech skills	Simpl tools can be understood by everyone
Materials	All the tools in the kits are available in the local markets
Pre-conditions/ Rule out factors	Only tools which are lightweight enough for all family members to use
Do's and Don'ts	**Do:** remember bags or boxes for carrying and storing the tools
	Don't: distribute tools such as machetes, which are not permitted by the local authorities on security grounds

not problematic | slightly problematic | problematic

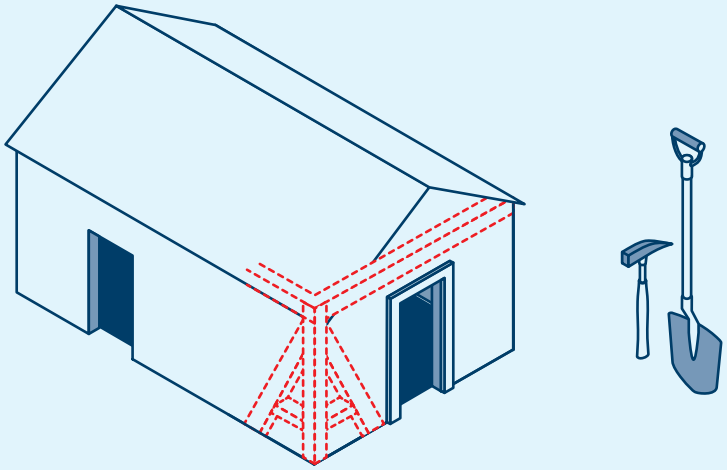
B 3.9. Hard blocking doors



Rresources and capacities	Plastic sheeting and fixings
Time	Installing plastic sheeting can be done in a very short time
Impact	Sheeting can protect agains the weather, and provide privacy, but gives no structural support
Manpower	One or two people can put up plastic sheeting
Costs	Durable plastic sheeting is usually medium cost, compared with other options
Sustainability	Plastic sheeting degrades relatively rapidly
Tech skills	Easy to install
Materials	Available (although of varying quality) in all markets
Pre-conditions/ Rule out factors	Only distribute if it is likely that the extreme weather will quickly subside
Do's and Don'ts	**Do:** Consult to see whether the fixings will also need to include lightweight poles for the emergency shelter, if the area does not have trees or other possibilities of structural support

not problematic | slightly problematic | problematic

B 3.10. Roof supporting poles

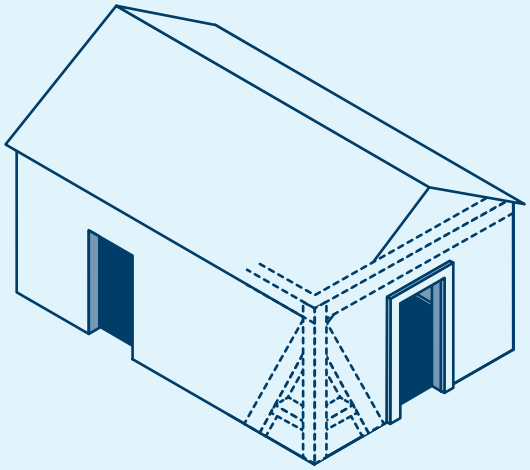


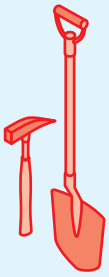
1

Rresources and capacities	Wood pole props, with fixings
Time	Moderate amount of time needed, depending upon the number of poles
Impact	Can support roofs, but only if the walls also remain upright
Manpower	Minimum two people needed to install, often three people
Costs	Costs can vary, depending upon quality and wood type
Sustainability	If properly treated, poles can last multiple years
Tech skills	Some basic skills and understanding of the principles of bracing and structural support needed
Materials	Poles (of varying quality) are available in most local markets
Pre-conditions/ Rule out factors	Only use if the roofs are already firmly connected to the walls, or can be connected quickly and securely by distributed hurricane straps
Do's and Don'ts	**Do:** Provide enough poles so that each vertical prop for the roof, also has its own diagonal bracing props, as well

not problematic | slightly problematic | problematic

B 3.10. Roof supporting poles



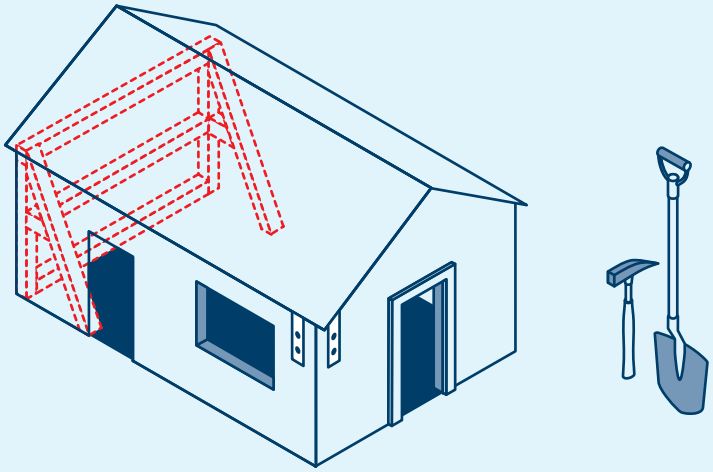


2

Rresources and capacities	Small tool kits (with trenching spades)
Time	Using small kits to do small repairs takes little time and can be broken down into smaller tasks as well
Impact	Depending upon the type of repair, the impact can be significant, and the right tools can make a difference
Manpower	All tools in the kits can be used by one person alone
Costs	Some items in the toolkit may cost more than kits of general NFIs
Sustainability	Some tools should last for years, whilst others may need periodic replacement
Tech skills	Simpl tools can be understood by everyone
Materials	All the tools in the kits are available in the local markets
Pre-conditions/ Rule out factors	Only tools which are lightweight enough for all family members to use
Do's and Don'ts	**Do:** remember bags or boxes for carrying and storing the tools
	Don't: distribute tools such as machetes, which are not permitted by the local authorities on security grounds

not problematic | slightly problematic | problematic

B 3.11. Wall bracing

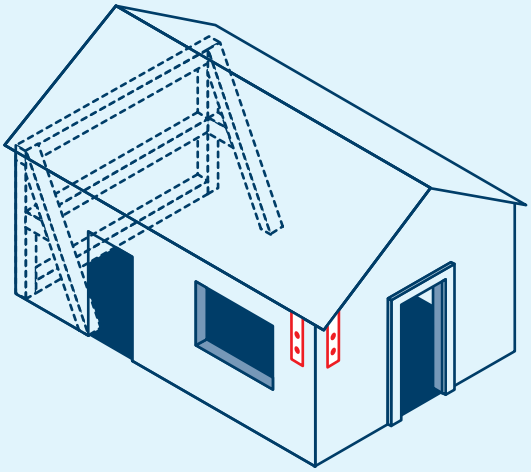


1

Rresources and capacities	Wood pole props for walls or wall corners facing uphill
Time	Significant time needed for both planning and installation
Impact	Impact dependent upon the strength and placement of the house structures to which the poles are attached
Manpower	Minimum three people needed for installation
Costs	Larger poles are high cost
Sustainability	Poles of this strength are considered permanent materials
Tech skills	Knowledge of principles of structural bracing, and some basic joinery needed, to make the intervention effective
Materials	Poles of sufficient thickness and strength may only be available in local markets in small quantities
Pre-conditions/ Rule out factors	Poles can only be effectively attached to already existing vertical wall columns, not to flat brickwork or blocks
	should not be seen as an alternative to evacuation
Do's and Don'ts	**Do:** Distribute the poles together with strapping and fixings, in order to be attached to the walls

not problematic | slightly problematic | problematic

B 3.11. Wall bracing

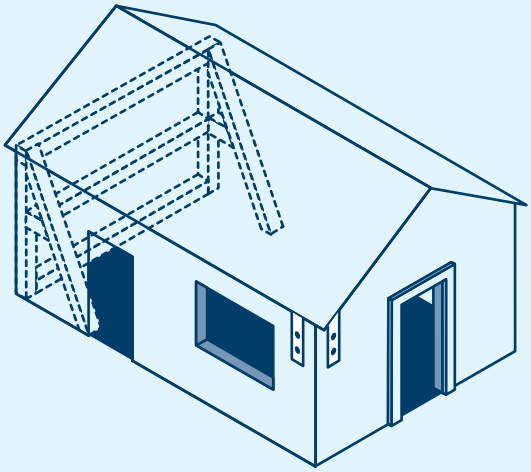


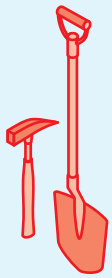
2

Rresources and capacities	Hurricane strapping and nails
Time	Needs time to position, bend, and nail the straps
Impact	Can have a significant impact on preventing the entire structure from flying away
Manpower	For most houses two people will be needed
Costs	Thicker straps will have increased costs, especially if not available in smaller local markets
Sustainability	A permanent material, especially if made out of galvanised metal
Tech skills	Needs an understanding of how far the straps need to be wrapped around different beams
Materials	Even if not available in local markets, the manufacture can be improvised easily in local workshops
Pre-conditions/ Rule out factors	Only effective if there is sufficient length to tie all the elements of the roof together, and also tie the roof to structural elements of the walls underneath
	National standards for the length and strength specifications
Do's and Don'ts	**Do:** make sure that the strapping is wide enough for a double line of the most commonly locally available sizes of nails
	Do: consider distributing hammers for each household, given the number of nailings necessary, and the need for the straps to be absolutely flush with each corner of the timber elements

not problematic | slightly problematic | problematic

B 3.11. Wall bracing



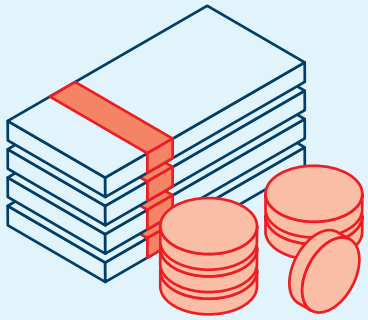


3

Rresources and capacities	Small tool kits (with trenching spades)
Time	Using small kits to do small repairs takes little time and can be broken down into smaller tasks as well
Impact	Depending upon the type of repair, the impact can be significant, and the right tools can make a difference
Manpower	All tools in the kits can be used by one person alone
Costs	Some items in the toolkit may cost more than kits of general NFIs
Sustainability	Some tools should last for years, whilst others may need periodic replacement
Tech skills	Simpl tools can be understood by everyone
Materials	All the tools in the kits are available in the local markets
Pre-conditions/ Rule out factors	Only tools which are lightweight enough for all family members to use
Do's and Don'ts	**Do:** remember bags or boxes for carrying and storing the tools
	Don't: distribute tools such as machetes, which are not permitted by the local authorities on security grounds

not problematic | slightly problematic | problematic

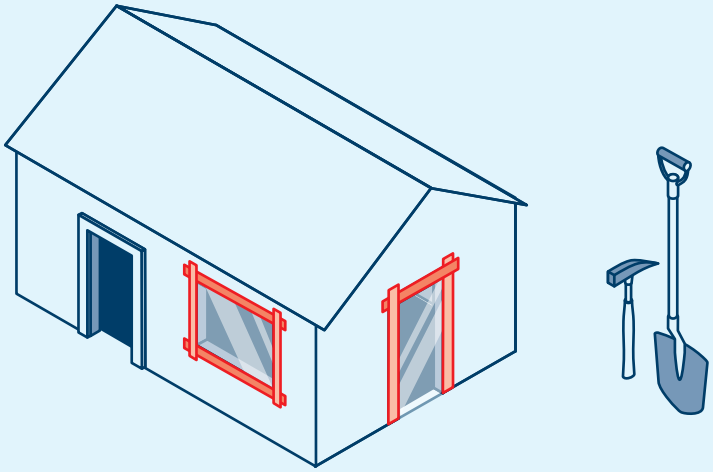
B 3.12. Cash or market



Rresources and capacities	Cash
Time	Extra time may be needed to spend the cash, and travel to local markets
Impact	Can be used for essential materials, depending upon individual choice
Manpower	One person can pick up and use the cash
Costs	Costs are equivalent to the amount of cash per household, plus distribution and monitoring
Sustainability	Only sustainable if it is multi-cycle, or integrates with other programming
Tech skills	No special skills needed
Materials	Ways to use, change or distributed cash are available in every market
Pre-conditions/ Rule out factors	Only distribute cash if it is clear that the drought conditions have not been exacerbated by failures in the market
Do's and Don'ts	**Do:** calculate for the entire bundle of basic needs for the family and not just for shelter support, and also for the needs of their hosts

not problematic | slightly problematic | problematic

B 3.13. Sealing off kits



1

Rresources and capacities	Sealing-off kits
Time	Sealing off of multiple openings can take significant time
Impact	Can be life-saving, if done well
Manpower	For many tasks, two people are needed, one person in some cases
Costs	Medium cost, depending upon the bundle of items
Sustainability	As this is a rapid response, it does not use permanent materials in the kit
Tech skills	Some awareness of basic skills needed
Materials	Sometimes all items are available on local markets
Pre-conditions/ Rule out factors	Only do direct distributions if cash has been shown to be ineffective
Do's and Don'ts	**Do:** make sure that the families are still able to adequately ventilate their homes, to avoid death or disease through smoke asphyxiation

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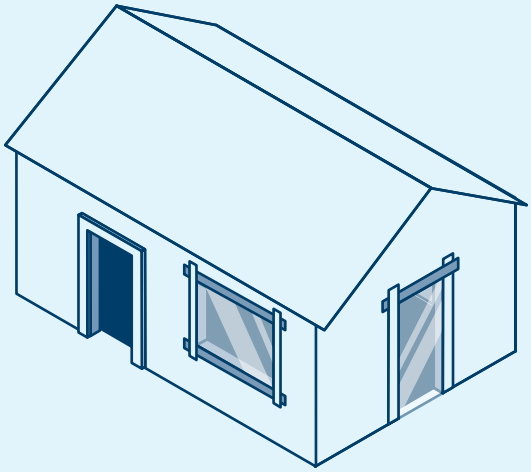
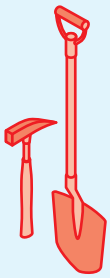
B 3.13. Sealing off kits





2

Rresources and capacities	Small tool kits (with trenching spades)
Time	Using small kits to do small repairs takes little time and can be broken down into smaller tasks as well
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Costs	Some items in the toolkit may cost more than kits of general NFIs
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Do's and Don'ts	**Do:** remember bags or boxes for carrying and storing the tools
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not problematic | slightly problematic | problematic

Part C

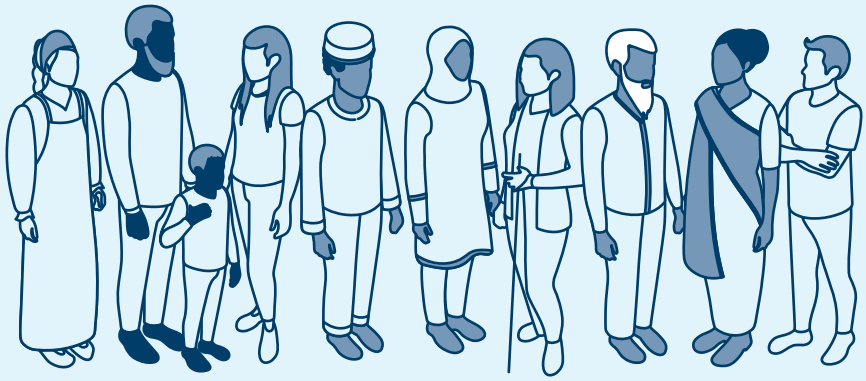
Annexes

Annex 1

Assessment of Community Capacities and Coping Mechanisms – Factors to take into account

Generally, assessing the capacities of communities, through interaction with a small number of the selected representative ones, before the start of a yearly disaster season, will require assessment's outcomes to be broken down according to the phases of the EAP before and during any future disaster

Municipal authorities



Local RC volunteers | RC staff | Local oces of relevant line ministries | Local disaster response ambulance/fire brigade | School teachers | Hospital administrators | Local religious or community leaders | Leaders of women's groups | Representatives of local organisations of people with disabilities

Technical knowledge.
Technical knowledge – about both the reasons why shelter or housing is damaged during disasters, and the most effective ways to reduce this damage, can be found in a community from a number of sources. Some of this information can come from personal experience during recent disasters in the past, and some can come from traditional knowledge about construction techniques and materials. Be aware that not all members of the community will have the same access to the same amounts of technical knowledge.

Much of the knowledge may be limited to those who are professional masons or carpenters. There may be very different levels of technical knowledge amongst men and women, and different challenges for women and men to access this knowledge.

Be aware that some members of a community may prefer to use 'modern' construction materials, such as concrete, but that often the community capacity for technical knowledge about how to safely use such materials is incomplete, and can actually result in less safe shelters or housing.

Local topographical knowledge.
The local community will almost always have the best and most detailed knowledge about the local landscape, including areas which were most severely affected by recent previous disasters, and which areas could be used as evacuation routes or zones. The RC/RC Movement has extensive experience on how to integrate such knowledge into responses as part of the Vulnerability and Capacity Assessment. The exceptions to this knowledge, are if the community has recently migrated as a group to a new location, or if a previous disaster has actually changed the local landscape, or the routes of waterways or flood plains.

Savings and capital.
By definition, vulnerable communities, and those living in areas at most risk from extreme weather events, are also the least likely to have much in the way of savings or financial capital. However, it is wrong to state that no individual or community targeted for EAPs will have any financial capacity, and even small amounts of capital should be taken into account, if the assessment of community capacities is to be complete.

Be aware that many vulnerable communities do not have access to formal bank accounts, but they may have access to financial capital in the form of community cooperative funds, or remittances from relatives working overseas. Often, this form of capacity is the most difficult to discuss with community members and to assess, for cultural or other reasons.

Social networks.
With more communities having access to modern media technology, and with many people in urban areas working many kilometers away from where they live, it is no longer possible to talk just about one local social network, but about. E each individual being is a part of multiple social networks at the same time.

It is likely that immediate neighbours are the ones who will give most physical help for last-minute strengthening of shelters or housing, but wider, work-based social networks, or remote social networks using social media, can have a valuable role in accessing shared cash, technical knowledge, local transport or other resources.

Storage capacities.
Storage capacities may differ between the ***community as a whole, and individual family members in the community.*** Care should be taken, to ensure that each individual family has sufficient protected space – either within their own home or that of a trusted neighbour – to store any kits or toolboxes which are distributed to them, as in general such distributions done as part of EAPs will be done before disaster forecasted extreme event materialises. If a community does not have one single safe space to store the materials for all the community, then a plan is needed to identify multiple spaces, each close enough to community members.

Be aware that for evacuation centres, there needs to be enough storage for each family not only for the materials which that may be distributed as part of early actions, but also the other household items, and food, water and clothing stocks, which that each family may bring with them.

Remember that coping mechanisms will no longer remain coping mechanisms if they are exhausted by the response to the disaster, and can no longer be replenished by the community.

There is a high risk of doing harm over the long term to a community, and delaying their post-disaster recovery, if they are required to do the following:

- Go into unmanageable personal debt, in order to buy supplementary items needed to fully use the items in the kit, or to replace items
- Use areas needed for livelihoods for prolonged periods of relief items storage
- Spend so many hours working on structural strengthening, either for themselves or their community, that they are no longer able to complete other necessary preparation tasks before a disaster. Demands for continued excessive hours of work can also delay reconstruction and recovery after a disaster.

Annex 2

Taking into account local capacities to act – Questions to communities

Questions	Key considerations
1 What are the capacities of communities to plan for forecast-based early actions for the most common types of extreme weather events?	• Communities may lack to technical know-how to plan, both in terms of construction, and in terms of organisational management: ***extra guidance tools, specific for these issues, may also need to be developed, in consultation with local authorities*** • Communities are changing in population, or moving, so lacking stability to plan: ***increase and prolong IEC messaging about planning, and about eventual distributions, on wide-ranging media, such as radio, TV or the internet. Plan to do more distributions of standardised kits through official partners rather than through community groups*** • Communities may lack the cohesion to make their own plans: ***Compensate by distributing detailed pre-made plans for acceptance, rather than minimal guidance for the communities' own adaptation***
2 How cohesive overall are the communities, and what impact will that have on any early actions which require households to help each other with construction or distribution tasks?	• Ask representative communities to self-assess their own cohesion, and corroborate this by asking individual families how many other families they know and can rely on, in the street or neighbourhood. ***If most families say that they know most people around them, then explore whether group-task modalities are appropriate. If there are a significant number of families who know five or fewer other families in the neighbourhood, then group-task modalities are probably not appropriate***
3 What are the formal and informal structures in place in typical communities, for planning, communication and implementing early actions?	• Identify not only the typical social structures, but also the typically associated physical structures where such communications activities can take place (e.g. buildings for religious worship, local community buildings, etc). ***Ensure that for both the buildings and the social structures, both are typically accessible for women, those with special needs and other vulnerabilities, and for any marginalised minorities***
4 Are typical communities able to agree upon contact focal points and communications channels with FbF teams?	• Ask representative communities to describe how they reach consensus in agreeing on contact focal points, and whether they have done so in the past with other organisations, and with what results. ***If it appears that representative communities find it hard to agree on communications focal points, then start with multi-person communications committees, instead***

Questions	Key considerations
5 **How many people in the communities have the necessary technical skills to implement proposed EAP interventions? Are these skills widely distributed amongst members of the communities, or only held by a small number of people in each location?**	• Remember that in many instances, people may have construction skills which they use on a regular basis but without having any formal education or certification in those skills. ***If the skills are only held by a smaller percentage of the population, revise the materials kits and the IEC materials, to methodologies which require no complex construction activities, e.g. substituting ropes for nails and bolts***
6 **What evidence is there that the communities themselves are or can be proactive in documenting and agreeing upon their own priorities and their own plans of action?**	• Ask to see any previous plans which communities have made with other organisations, or with the local authorities. ***If there are no such examples, it is unlikely that communities will come up with their own first versions ever in the middle of the lead-time before a disaster. Plan for EAP methodologies which target individual households (e.g. mass distributions) rather than group or community tasks (e.g. community strengthening of evacuation centres)***
7 **What level of communication or information sharing is there between different communities?**	• Ask representative communities to list precisely information or technical guidance, which they have learned from neighbouring communities. ***If this is not possible, then set up or change the communications channels to those which are wide-ranging, such as radio, the internet, or nationally distributed SMSs, and link them to trainings***

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Publisher
German Red Cross e.V.,
Carstennstrasse 58, 12205 Berlin

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