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“The best way to overcome local hazards is to work together as a community to identify local solutions.”

Red Cross Volunteer in Lesotho



Improving Farming Practices

Identifying ways to overcome crop losses from drought, floods and other hazards

In this activity, volunteers bring knowledgeable and experienced people together with communities, to discuss and prioritise crop loss problems caused by climate and other stresses and hazards (droughts, floods, irregular rainfall, hail, strong winds, etc.) and identify solutions. This activity encourages communities to identify for themselves the crops and practices that best suit the drought, flood and other hazard conditions in their area. It also contains some general advice and guidelines on encouraging farming practices and crops that can cope with drought, flood and other stresses.

What does the activity look like?

This activity brings together the community, experienced farmers and other agricultural specialists in community meetings to:

- Discuss the stresses and hazards causing crop loss **problems** in their communities.
- Talk about why these **stresses and hazards** are causing crop losses.
- Identify ways these **problems** could be managed or overcome.
- **Prioritise** the most important problems and identify the best solutions to be tested. You can test the solutions as individuals, groups or under the guidance of a lead farmer (see Section 6).

This activity can be linked to Section 6 of the handbook which explains a way of testing and spreading **appropriate solutions** through 'Lead Farmers and Demonstration Farming' activities.

The activities in this section, to prioritise problems and identify potential solutions, can be used to help address any other problem in the community, for example related to livestock, water, health or sanitation.

Photo: Niger © S. Truelove



What are the main benefits?



Helps communities identify solutions to the stresses and hazards that affect them most.



Concentrates on identifying local solutions that have been shown to work in other communities.



Encourages selection of appropriate solutions that do not require much outside support.



Helps farmers identify small positive changes and adaptations that cost very little but that can gradually improve crop yields.



Preparations

Timing tips

The length of the activity will depend on the problems and solutions identified by the community. It is likely to take more than one year. Communities may choose to continue to introduce new community actions year after year. Community groups can also tackle other problems together, such as pests and diseases, livestock, income generation, savings and loans, storage and post-harvest management etc. Each group and individual should be encouraged to train another person or group so that the new ideas are spread to everybody.

You can start at any time of year, but try to choose a time of day or year when people are not very busy.

What does the volunteer need to do before the activity can start?

In addition to the usual start-up activities outlined in the 'Essential Guidance' section in the Introduction of this handbook, the volunteer should talk to local extension officers and other knowledgeable farmers to encourage them to support the activity.

The steps below split the process into a number of separate community meetings. **You do not have to run these meetings on separate days.** Try and gauge how the community feels about continuing the discussion and having long meetings or if they prefer several shorter meetings. Discussions take time (and people have busy lives) but having separate meetings can interrupt the flow of the discussions. If there are new meetings on separate days, different people might attend - and you might have to explain things again. This can make decision-making less efficient, but good decisions that include everyone can take time.

How to avoid risks

Many people do not have much spare time or resources to do additional activities. Try to start with smaller, easier or cheaper activities and build up to larger ones.



Furrow irrigation system.

Photo: Kenya, 2017 © Alex Wynter/Kenya Red Cross, Climate Centre



How to implement the activity?

Step 1

Gather support from community members who are concerned about crop losses

Step 2

Call a community meeting to explain the activity and how it will help to overcome community crop losses

Step 3

Call a community meeting to agree the main types of crop losses and the underlying causes, stresses and hazards contributing to these crop losses

Step 4

Call a community meeting to prioritise the crop loss problems that have been identified

Step 5

Call a meeting to decide which problems to tackle first and the reasons for and underlying causes of the problems

Step 6

Call a meeting (s) to identifying potential solutions

Step 7

Call a meeting (s) to identify which potential solutions are appropriate solutions for an activity

Step 8

Select a task force to design a plan of action





Step 1: Gather support from community members who are concerned about crop losses

The crop losses may be caused by climate related hazards, such as irregular rains, droughts, floods, cyclones, hail and strong winds. They could also be related to other difficulties, such as poor soil, erosion, or any other stresses, shocks or crises.

Try to identify a small group of the most knowledgeable and trusted people in the community to help you lead this activity and ask for support from community leaders, women's or disability groups, local extension officers or experienced local farmers.

Use the advice in the 'Essential Guidance' section in the Introduction to this handbook, to mobilise the people in the community who are most interested in finding ways of addressing crop loss problems.



Photo: Malawi, 2016 © Thea Rabe/Norwegian Red Cross

Crop losses can occur due to irregular rains, droughts or floods.

Step 2: Call a community meeting to explain the activity and how it will help to overcome community crop losses

Start the meeting by summarising the activity. Explain to people that you are enthusiastic to form a group of people who want to look for ways of overcoming crop losses, by adapting local farm practices. These crop losses could be due to droughts and floods, pests, diseases or whichever problems are most common locally.

You can then summarise what the activity looks like and the main benefits you hope to achieve, using the information at the start of this section.

Explain to people that the activity will involve a number of community meetings, where they will discuss the following topics with experienced people:

- The stresses and hazards causing crop loss **problems** in their communities.
- The **causes, stresses and hazards** contributing to crop losses.
- **Potential solutions** or ways of overcoming the crop loss problems.
- **Prioritising** the crop loss problems, and selecting the most **appropriate solutions** to be tested by individuals, groups, or under the guidance of a lead farmer (see Section 6 'Lead Farmers and Demonstration Farming').

During the meeting you can give some general advice on farming practices that can help in flood or drought conditions, such as in the box below. You may find it useful to display these 'crisis tolerant crop practices' and remind people of them at the start of meetings:



Drought, flood and other crisis tolerant crop practices

- ✓ **Plant crops that tolerate difficult conditions** – farmers know that some crops do well whatever the conditions, so encourage them to continue to plant at least some of these crops. These crops will differ depending on the growing conditions in your community, but you can ask experienced or successful farmers or older people who remember crops that may not have been grown for many years such as cassava/manioc, millet, sorghum etc.
- ✓ **Plant different types of crops** – growing large areas of the same crops or seeds will increase the risk of pests and diseases, so that if a crisis does arrive, it makes the farmer more vulnerable to losing the whole crop. Planting a mixture of different crop types and different varieties that mature at different times increases the likelihood that at least some of the household's crop will survive.
- ✓ **Stagger planting** – holding back some seed, and planting over a longer period can mean that if rains fail or pests attack, some seeds remain to be planted. Staggering the crop can mean that if the crop is damaged by pest or disease or another hazard such as wind or hail, at least some of the crop may be less damaged. Follow the advice in Section 3 'Shaded Seedling Nurseries' for more advice on this.
- ✓ **Plant crops with different heights** – some crops store their food to harvest below the soil (roots, tubers or groundnuts), others on the surface, others in shrubs and others high up in trees. Each type of crop will tolerate different crises differently and some will survive better than others.
- ✓ **Advise the community to protect and encourage wild foods used in crises.** Communities can work with local leaders to identify the wild foods most important for providing food security during crises and deciding how best to protect them or develop them.
- ✓ Advise people to think about ways **to avoid post-harvest and storage losses.**

Ask people to go away after the meeting and think about whether some of this general advice could be helpful. Explain that it is important to:

- Try out new ideas in a small way first, before committing to new ideas in a big way.
- Share their experiences with one another, so they can learn from each other's successes, setbacks and failures.

Agree a time for the next community meeting.



Step 3: Call a community meeting to agree the main types of crop losses in the community and the underlying causes, stresses and hazards contributing to these crop losses

You may find that word has spread, and new people have joined the group since the first community meeting. If this is the case, then you may need to start by repeating the summary and explanation of the activity from the first meeting.

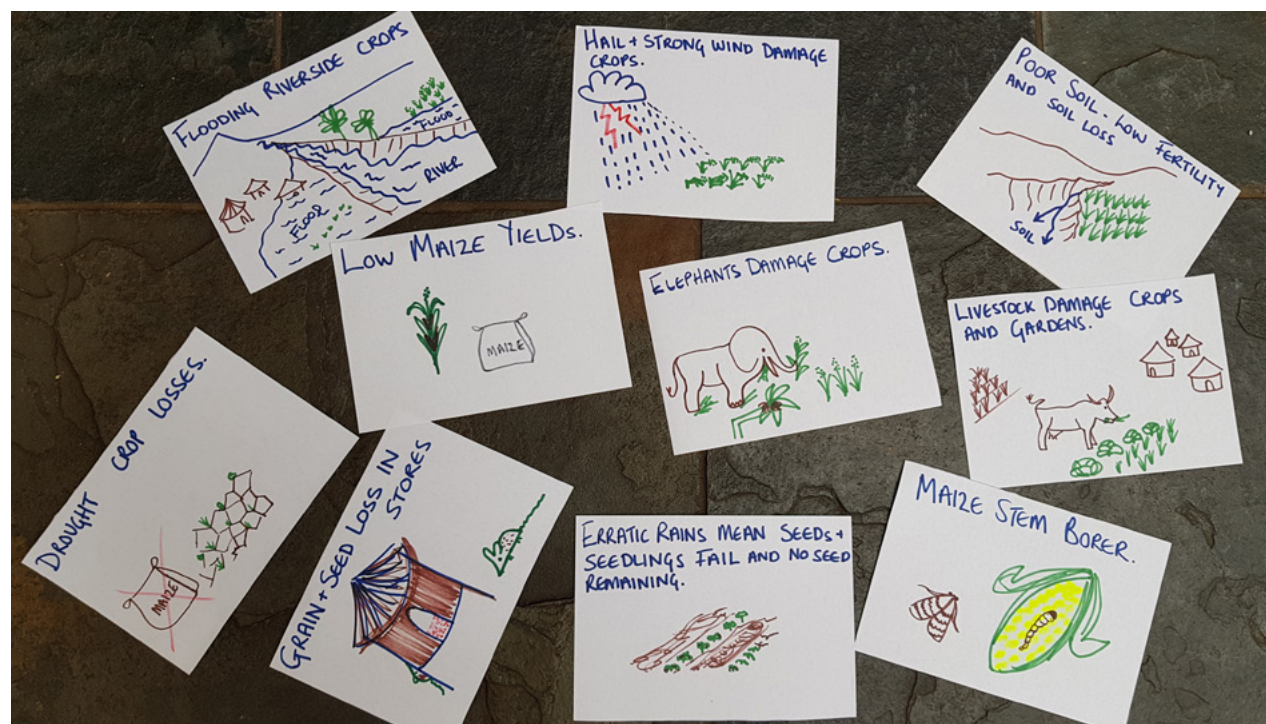
Explain that the aim of today's meeting is for the community to discuss the main crop losses in the community and understand the underlying causes, stresses and hazards contributing to these crop losses, so that in future meetings the community can identify ways of overcoming these problems and then work in groups or individually to trial improved farm practices.

Below is a detailed step by step guide explaining how to identify and prioritise crop loss problems. There is further information on this in the 'Community Action Planning' part of the 'Essential Guidance' section in the Introduction of this handbook.

List the key crop losses. Start by asking people to **list the types of crop losses** they have experienced in recent years and **reasons for the crop losses** if they know. Ask them to be as detailed and specific as possible - which crops affected in which months, where and why the losses took place, etc. You are recommended to write each different problem and the cause if known onto a separate piece of scrap paper and spread the papers out on the floor so everyone can see them. Many of the problems listed, such as irregular rains or floods may be related directly to the changing weather patterns caused by climate change, but others may not seem to be, like increased pests or disease attacks. It is fine to list all the problems identified and any reasons identified. Each time people think they have finished the list, keep asking “**any more problems**”, or “**any other crops with problems?**”.

If there are many people in your community who cannot read, you may decide to ask someone to draw simple pictures or symbols on each paper that help these people to follow which problem is listed on which piece of paper.

If time allows you can move on to ranking the problems in order of importance - prioritising the problems. If you find that the meeting gets very long, so you might decide to stop and start again in another meeting on another day!



Step 3 - Gather a list of all the main crop loss problems.

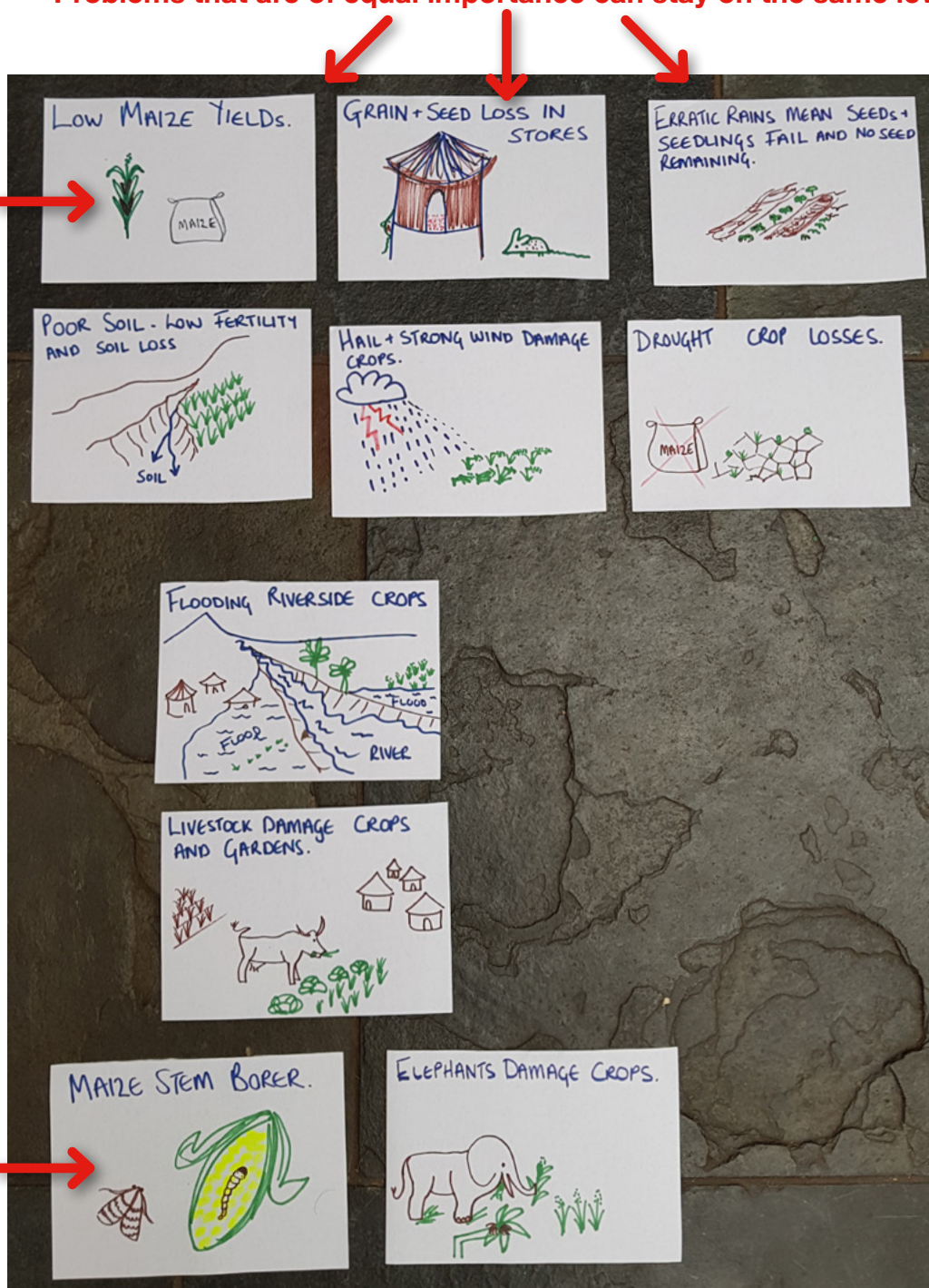
Step 4: Call a community meeting to prioritise the crop loss problems that have been identified

Recap what was discussed in Step 3. When people have run out of problems resulting in crop losses, you can ask the community to prioritise the problems they have identified. The aim is to find out which are the most important problems that people want to solve first. It is important to explain that different people will find different types of crop losses more of a problem than others. The exact order of the prioritisation is not so important, but the community needs to decide which crop losses it wants to try to tackle first.

The group can work through the list and hopefully find solutions to all the community's crop losses. Try to build a consensus or an overall agreement with all the people in the meeting. You are advised to choose a respected older person or local women's group leader to be the first person to come and begin to put the problems listed on the papers in the order of 'biggest problem at the top', 'smallest problem at the bottom'. Some problems will be of equal importance so can be left on the same level (side by side).

Problems that are of equal importance can stay on the same level

High priority problems



Low priority problems



Ask the people in the meeting to guide the person ordering the papers with their opinions. Remember to ask quiet people to speak up, encourage women, the elderly, disabled or poorer people to take part. Older people are particularly important as they will remember some of the old crops and practices that may help people overcome the difficult crop conditions. After a short while, thank the first person and then ask another person to come and put some more of the problems into the prioritised list. Keep asking new people to have a go at ordering the list of problems until all the papers are listed in approximate order. If some of the problems are similar to each other, it is fine to group them into one small area.



Remember! There are no rights or wrongs! People experience stresses and hazards in different ways, so different people will have different opinions on which problems are most important.

If the meeting gets very long, you might decide to stop and start again another day.

Remember to write down the agreed final prioritised list of crop loss problems. You can put numbers on the back of the pieces of paper to help you remember or draw a diagram or make a list to keep an accurate record.

Step 5: Call a meeting to decide which problems to tackle first and the reasons for and underlying causes of the problems

Not all community crop loss (or other) problems are equal! Some problems will be much easier to tackle than others. So, in this meeting, you are advised to assess a small number of the most important problems to start with (those prioritised at the top of the list) before selecting which problem(s) and solution(s) the community will work on.

Volunteers are also strongly advised to ask the community to invite successful and experienced farmers from neighbouring communities and to invite other local knowledgeable people like government or NGO extension officers to the meeting to help decide which problems to tackle first.

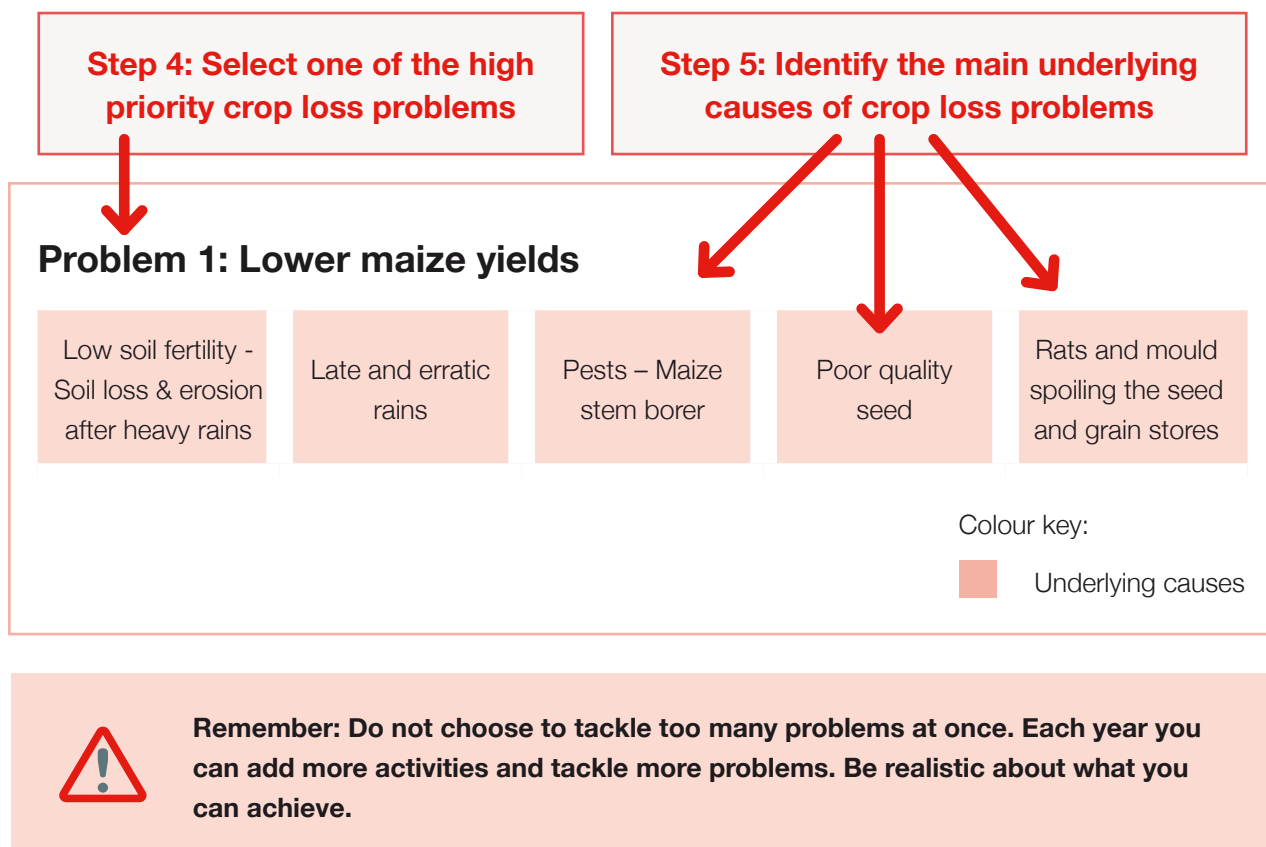
The volunteer should give this advice to the community:

- Try to select a problem and solution that the community feels it has the capacity, skills and resources to be able to tackle. There is no point choosing a problem that is so big or complicated that the community feels it cannot make progress.
- It may be better to **start small** and select a problem that has **manageable** solutions. This way the community will be confident in solving this problem and can move onto a bigger challenge afterwards.

With this advice in mind, use the following steps to reduce the number of problems until there are three to five problems remaining. Explain that problems are complex, and it is better to look in detail at a small number of problems to start with. Three problems is the ideal number to start with!

1. Lay out the pieces of paper with the problems in the priority order (highest priority/most important problems at the top, lowest priority/least important problems at the bottom).
2. Ask a trusted community member (perhaps a woman first?) to remove around half of the low priority/least important community problems from the list. Explain that the volunteer will keep these problems safe so that the community can return to address these problems in the future if they wish.
3. Check that the other people in the meeting agree.
4. Ask a different trusted community member (perhaps a man this time?) to remove around half of the remaining problems until there are between three to five **manageable** problems left. Explain that the community can return to other problems on another day, month, season or year.

5. Take the remaining three to five problems and spread the papers out in front of the community.
6. Select the highest priority/most important problem (in the diagram below we have selected 'lower maize yields') and ask the community to describe in more detail some of the **underlying causes** or reasons why they think this problem occurs.
7. Write down each **reason** or **underlying cause** in large writing onto a separate piece of paper so that everyone can see. Arrange the reasons and underlying causes out on the floor as shown in the table below. If you have a large poster sized piece of paper, you can draw it up in a table as shown:



We have shown an example for one type of problem – lower maize yield. The problems and underlying causes and solutions in your community may be different. Remember to make one table for each problem being discussed.

- Like before, keep asking; '**any more reasons**', or '**any other underlying causes?**' until you have exhausted all the reasons and underlying causes for the problem. You may need to keep adding more columns for reasons or underlying causes, as there are usually a lot of them!
- The volunteer should make sure someone trustworthy keeps a record of all the reasons and underlying causes gathered so far for Problem 1. At this point the volunteer is advised to ask people if they wish to take a break for refreshment and continue looking at the second problem later, or in another meeting on another day. If the group choose to look at the rest of the problems on another day, the volunteer should ask them to choose the day for the next meeting and ask everyone to attend, especially the experienced and knowledgeable people and extension officers.
- Keep following **Step 5** for each of the three to five problems prioritised, or until the community feels it has discussed the problems enough.



Step 6: Call a meeting(s) to identifying potential solutions

Each problem can be addressed in turn.

- **Before the meeting starts** explain to any invited specialists such as government or non-government extension officers, that you would like to hear potential solutions from the community first, and it would be good if they could add any new or different ideas afterwards. It is important to remind specialists joining the meeting that they should offer solutions that are simple and that do not require too much expert knowledge, skills or resources, that the community could find difficult to achieve.
- Start the meeting by repeating the **crisis tolerant crop practices** listed in Step 2.
- **Explain that the aim of the meeting is to identify potential solutions first.** Explain that not every solution will suit everybody or the local conditions, and that after identifying all the potential solutions, the community will prioritise them and select the most **appropriate solutions**. Explain that it may not be possible to cover all the potential solutions to all the three to five problems in one meeting. Lay out all the pieces of paper as before.
- For each problem in turn, work through the reasons or underlying causes that have been identified. Ask the community to identify **potential solutions** to address **the problem by mitigating (making it less bad or less severe), reducing, avoiding or solving** each of their underlying causes. Write each potential solution on a different piece of paper and arrange in a similar way to the table above. You may need to keep adding more columns for the potential solutions as there may be many ideas.
- Explain to the community that they may not know of potential solutions themselves or may not be able to think of any solutions straight away, but they can discuss and think it over and return to it later.
- Then ask the invited experienced farmers, government extension officers or non-government experts if they can think of any other potential solutions or **ways of overcoming by mitigating, reducing, avoiding or solving** each of these reasons or underlying causes to the problem that they think might work in this community. Ask the specialists to describe these potential solutions to the community and if the community think they might be appropriate, then add them to the list or table of potential solutions you have made together.

Problem 1: Lower maize yields

Low soil fertility - Soil loss & erosion after heavy rains	Late rains	Pests – Maize stem borer	Poor quality seed	Rats and mould spoilage the seed and grain stores
Soil conservation method – e.g. Strip farming (see Section 7)	Shaded seedling nursery (see Section 3)			
Composting (see Section 2)	Other varieties or crop types that need less water			
Homemade liquid fertiliser (see Section 4)				

Step 6: Identify potential solutions for each underlying cause, one after another

Repeat steps 5 and 6 for a small number of the highest priority problems

Colour key:

- Underlying causes
- Potential solutions

- The community can also ask the invited specialists if they have anything further to add about the ideas the community have identified. Have these approaches proved successful or unsuccessful in similar conditions? Do they know of any other reasons why the ideas could work or might be difficult to achieve?
- Like before, keep asking the question '**any more potential solutions?**' until you have exhausted all the potential solutions to all the underlying causes for the problem.
- Then move onto each of the other problems in turn. Remind people to be realistic and try to only list potential solutions that they think are appropriate and may work.
- The volunteer should make sure that someone trustworthy keeps a record of all the potential solutions as you look at each problem and its causes. At this point the volunteer is advised to ask people if they wish to take a break for refreshment and continue looking at the second problem later, or in another meeting on another day. If the group choose to look at the rest of the problems on another day, the volunteer should ask them to choose the day for the next meeting and ask everyone to attend, especially the experienced and knowledgeable people and extension officers.
- Keep following Step 6 for each of the three to five problems prioritised or until the community feels it has discussed enough.
- If communities are finding it hard to identify potential solutions to a problem, they could consider creating a small '**working group**' to meet separately. The working group should include people that they think would be most knowledgeable about ways of finding solutions or alternatives to help tackle these problems. The community may decide to ask different people to look at different problems. This could include local farmers who have had success overcoming the problem, elderly farmers who remember some of the old or alternative ways, and local extension officers who know about technical solutions or alternative strategies. The volunteer should use the guidance in the box below to support the working groups that are set up.



Guide the working group to try to find:

- 1. Small, moderate changes to existing practices** which are already familiar to local people.
Brand new ideas different to people's usual ways of working tend to be much harder to spread and less effective. If you do identify new ideas, then always make sure they are tried out in a small way first.
- 2. Local alternatives** that have proven successful – ask local farmers which crops or varieties have:
 - **Tolerated the drought/flood** etc. (e.g. sorghum and different types of millet)
 - **Provided food after the drought/flood** (e.g. cassava/manioc, tubers, tree crops such as bread fruit, papaya or plantain)
 - **Have been useful 'quick crops' to plant after the drought/flood** to bring quick food and income (e.g. green leaves, tomato, chilli, onion etc.)
 - **Is there a local farmer who has not been as affected** by the drought/flood etc.- what strategies has this farmer used?
 - **Are there older people who can remember crops, remedies or ideas** (pest and disease advice perhaps?) from the past that tolerated poor conditions and survived crises?
 - **Are there people who have seen ideas** that have been successful in similar situations elsewhere?

The working groups can report back to the community in the next meeting.



Step 7: Call a meeting (s) to identify which potential solutions are appropriate solutions for an activity

Lay all the pieces of paper with all the different problems, reasons for and underlying causes and each of the potential solutions out on the floor.

Any working groups should present their findings back to the community and then the community should decide whether to add any of the new proposed ideas to the original prioritised list on the floor.

Explain to people that they cannot tackle every problem and every solution at once, but they now have a '**Community Action Plan**' (see the section in the 'Essential Guidance' of the handbook Introduction) that records the many different ways they can begin to tackle some of the main problems.

Advise them that for their first community activity they should;

- Limit themselves to addressing one potential solution or a small number of potential solutions to **just one problem!** This may seem very hard to them, but experience has shown that **starting small** to build your capacities, skills and experience is better than doing too much and risking failure.
- Select a potential solution activity that does not involve too much outside support or resources.
- **Try out any new ideas as a community in a small way** before committing to involving many people in a big way.
- **Share experiences** with one another, so people can learn from each other's successes, setbacks and failures.

How to select an appropriate solution activity:

1. First, ask the community to select a problem that they feel has potential solutions that they have the knowledge, skills and resources to realistically achieve without too much outside support. Different people may have different opinions on this, and it may take time to come to a joint decision or compromise.



Photo: Chad, 2019 © George Osodi/British Red Cross

2. If the community is unable to come to a decision, then you may choose to prioritise solutions for two problems and then select the most appropriate final decision later.
3. Prioritise the potential solutions for the problem people most want to address by asking the community to assess all the potential solutions and following these instructions:
 - **Turn over or cover up any potential solutions that they do not think are appropriate,** manageable or achievable (across all the underlying causes). People may decide to try these solutions later.
 - **Identify which two to three potential solutions** (across all the underlying causes) they think are **most likely** to have a high level of impact on addressing or solving the problem with the resources the community has available.
 - Finally, ask the community if they can select the one **appropriate solution** that they would like to work on first. Sometimes the solutions are very similar so it may be possible to work on more than one at once, but in general it is best to advise communities to start on one solution activity and move onto others later.
 - If the community insists on attempting more than one appropriate solution at a time, then it may be better to encourage the community to identify two groups who each trial and test the solutions and then report back to each other, so they can share experience.

Step 8: Select a task force to design a plan of action

Form a task force with some of the interested community members alongside any lead farmers, local extension officers, research institutions, non-governmental organisations or community-based organisations. Task force members should have useful experience or can offer support to help identify a plan of action for how to implement, test and trial the appropriate solutions identified and then demonstrate successful methods and approaches to the wider community. The task force may need more than one meeting to design a plan of action. It is important that the task force keeps feeding back their ideas to the wider community to cross check that the wider community agree.

Volunteers should refer to Section 6 on 'Lead Farmers and Demonstration Farming' which describes a way of spreading new farming practices through identifying lead farmers who can trial and then demonstrate the new or alternative ideas to other people. Once some workable solutions or alternatives for each of the community identified problems have been identified, use the information on 'Spreading New Ideas' in the Introduction to this handbook to help you advise the task force on the best ways to explain and demonstrate the new and alternative ideas to the community.

The best way for people to learn how to do new things is for them to see how it is done and trial and test things together first and then for themselves (see the ideas in Section 6 'Lead Farmer and Demonstration Farming').

Communities are advised to trial new practices in groups first or on small demonstration plots on selected farmers' fields. After success has been demonstrated in a community trial, people should have a small trial on their own land for themselves before deciding to use more widely. Remind people that one of the main messages to reduce peoples risks and withstand crisis is to maintain diverse types of production and income generation strategies, so that if things go wrong, they have alternatives.

The same process of bringing the community and knowledgeable and experienced together to assess and prioritise problems and solutions can also be used to help assess other community problems related to livestock, water, or other problems such as health and sanitation issues.



Photo: Chad, 2019 © George Osodi/British Red Cross

Identify a task force.

Things to watch out for

- ⚠ Try to make sure any experienced people invited to join the community discussions do not discourage the ideas that local people give, dominate in meetings, or put forward unrealistic, outside or unproven solutions.

Top tips

- ✓ Encourage people to test the ideas in a small way first.
- ✓ Consider organising a ceremony or activity so that after any successes, results can be observed and celebrated. Invite local leaders, authorities and even other neighbouring communities, or people that do not participate, to come and see the results. This could motivate other people to get involved.



Photo: Zimbabwe, 2019 © Jordi Matas/British Red Cross

Links to other sections in this handbook

This approach of identifying problems and solutions can also be used to address livestock, poultry or any other problems such as health or sanitation issues.



Section 1 Gardens



Section 2 Compost



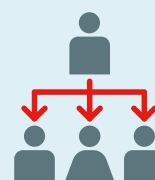
Section 3 Shaded Seedling Nurseries



Section 4 Homemade Liquid Fertilisers



Section 6 Lead Farmers and Demonstration Farming



Section 11 Early Warning and Early Action



Resources and skills needed



What resources are needed to run the activity?

This activity relies on the experience of local people and should involve the resources, land, tools and ideas that people already have as much as possible.



Approximate costs

Depends on the activities selected.



What skills or knowledge do volunteers need?

No specialist knowledge, just the confidence to talk to local extension officers and bring people together to discuss matters in community meetings.



What skills do participants need?

No specialist skills.



What needs to be monitored or followed-up?

If people stop attending the community meetings, regular follow-up with these people can help the volunteer understand if people have lost trust in the process. Once the activity begins, the volunteer should check whether the ideas are working and if people are doing them and spreading the ideas to other people correctly.