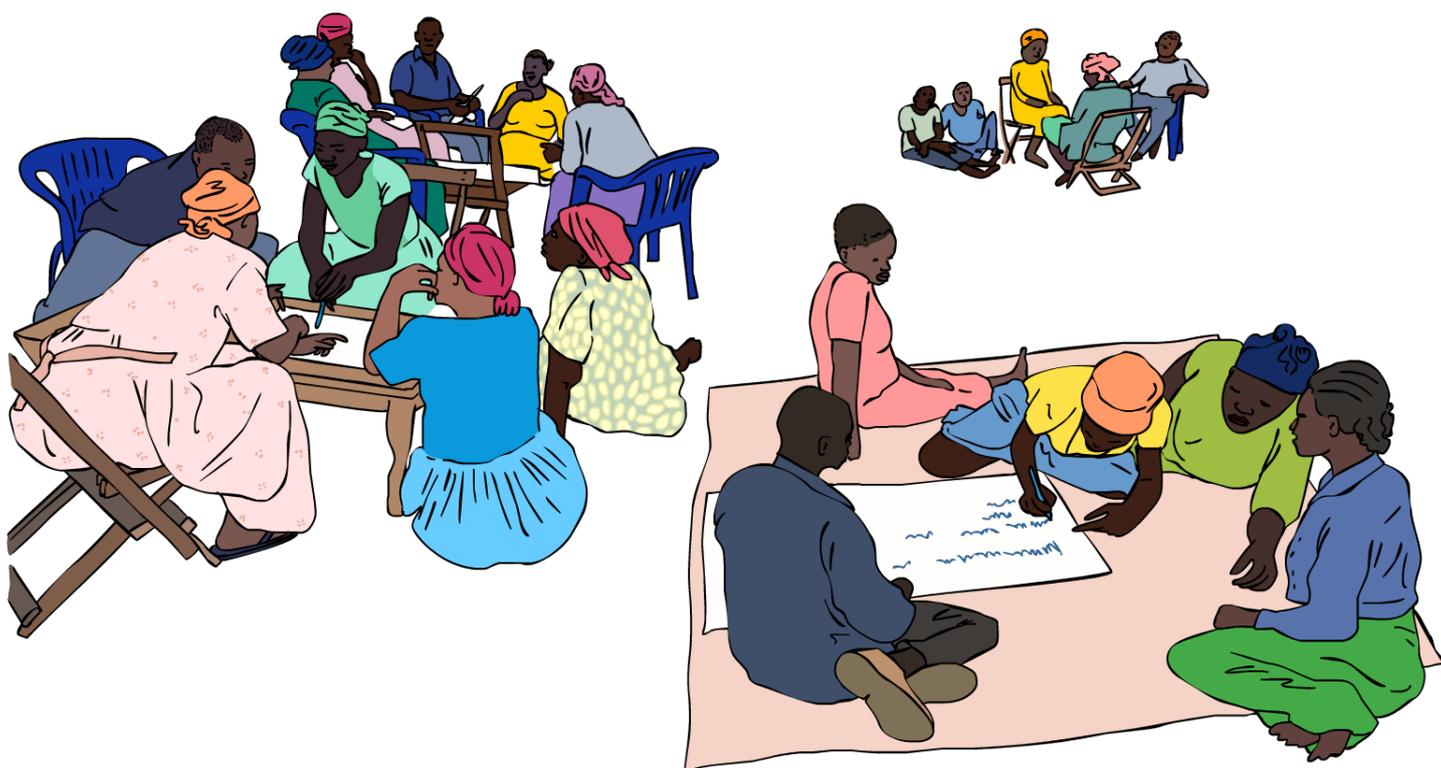


FACILITATORS' FIELD GUIDE FOR FARMER FIELD SCHOOLS ON LOCAL FOOD PLANTS FOR NUTRITION

Module: Diagnostic phase



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FACILITATOR'S FIELD GUIDE FOR FARMER FIELD SCHOOLS ON LOCAL FOOD PLANTS FOR NUTRITION

Module: Diagnostic phase

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Introduction

This document is meant to help facilitators complete the diagnostic exercises which are part of a Farmer Field School (FFS). It summarizes the information on FFS diagnostic and review phase present in the chapter 5 of the [Field Guide](#). The FFS diagnostic phase has also been summarized in the [Online Course on nutrition and local food plants](#).

Please note that these guidelines are not written in stone. They must therefore be seen as ingredients that can be used or adapted, rather than as a recipe that needs to be followed in a fixed order.

Overview - Why carry out a diagnostic exercise?

The diagnostic and review phase is the first step to ensure that the FFS addresses the needs and objectives identified by the farmers in a community. In short, it encompasses a set of participatory exercises that are conducted in a small number of subsequent FFS meetings. One or more exercises can take place in each FFS diagnosis meeting, depending on their duration. The diagnosis will finish with the definition of the research and development objectives that will lead the process for preparing the curriculum also the FFS activities that will be implemented.

As a shared learning process, the diagnosis and review phase has the following objectives:

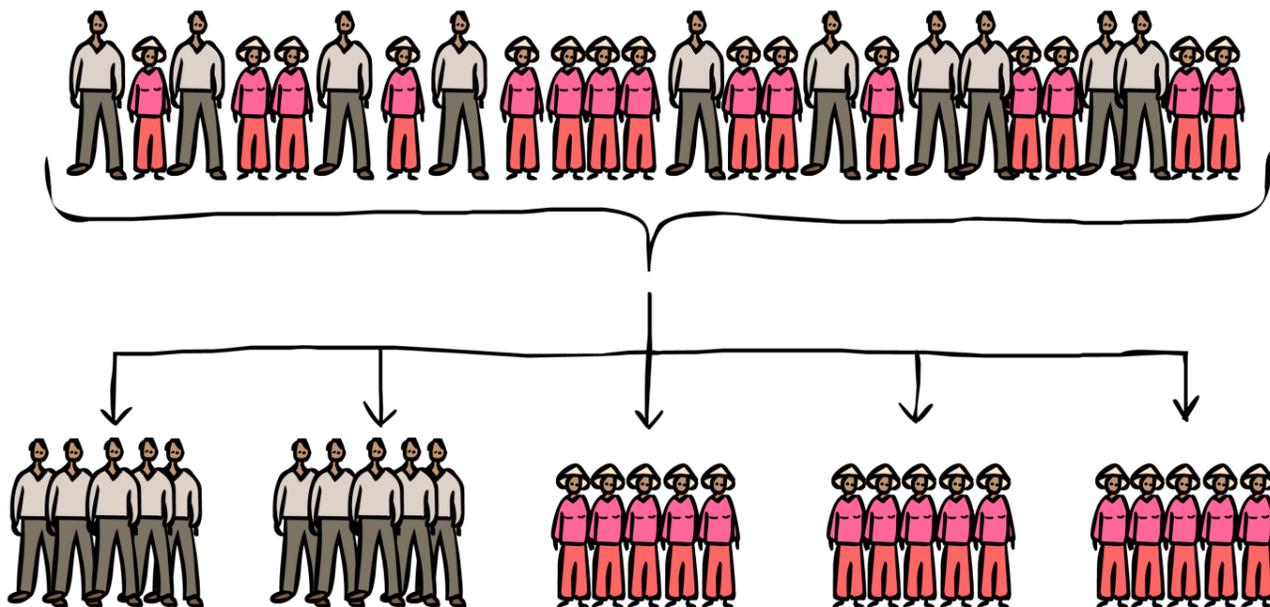
- To identify and reflect on the main problems of malnutrition and uneven intra-household food distribution.
- To exchange experiences and explore how local food plants can strengthen the coping strategies of households during the food scarcity season, and increase the diversity and quality of the diet.
- To share traditional knowledge on local food plants, particularly neglected and underutilized species (NUS), which is important for realizing their importance. The exercises not only will facilitate knowledge sharing between men and women, but also across generations.
- To discuss and prioritize the main bottlenecks that prevent the consumption of certain local food plants, and to identify potential solutions to tackle them.

Getting started

To make sure that objectives answer the needs of all members of the FFS, it is important to start by dividing the group of 25 to 30 farmers into subgroups of five. This enables 'segregation' (see below), and it helps participants to get to know each other better, feel more comfortable and play an active role.

Segregation

If possible, the subgroups should separate women and men. It can also be useful to separate participants in other ways, such as according to their access to assets (tools, machinery, irrigation systems, animals). This helps the facilitator make sure that all participants feel free to express their ideas and preferences.



Each subgroup independently conducts the exercises and writes down their results. The facilitator can rotate among the subgroups and encourage all members to participate.



Malnutrition problem tree

This exercise provides a visual overview and in-depth understanding of the root causes and consequences of malnutrition of the community. Malnutrition is influenced by many factors, such as the general access to food, diversity and quality of the diet, health, agricultural practices or the level of women's empowerment.

Recommended duration: 1 hour 30 minutes

Materials required: large sheets, paper, markers, pencils.



NB: at the start of this session, the facilitator explains the objective of the exercise and the steps that need to be taken.

Step 1: Explaining malnutrition

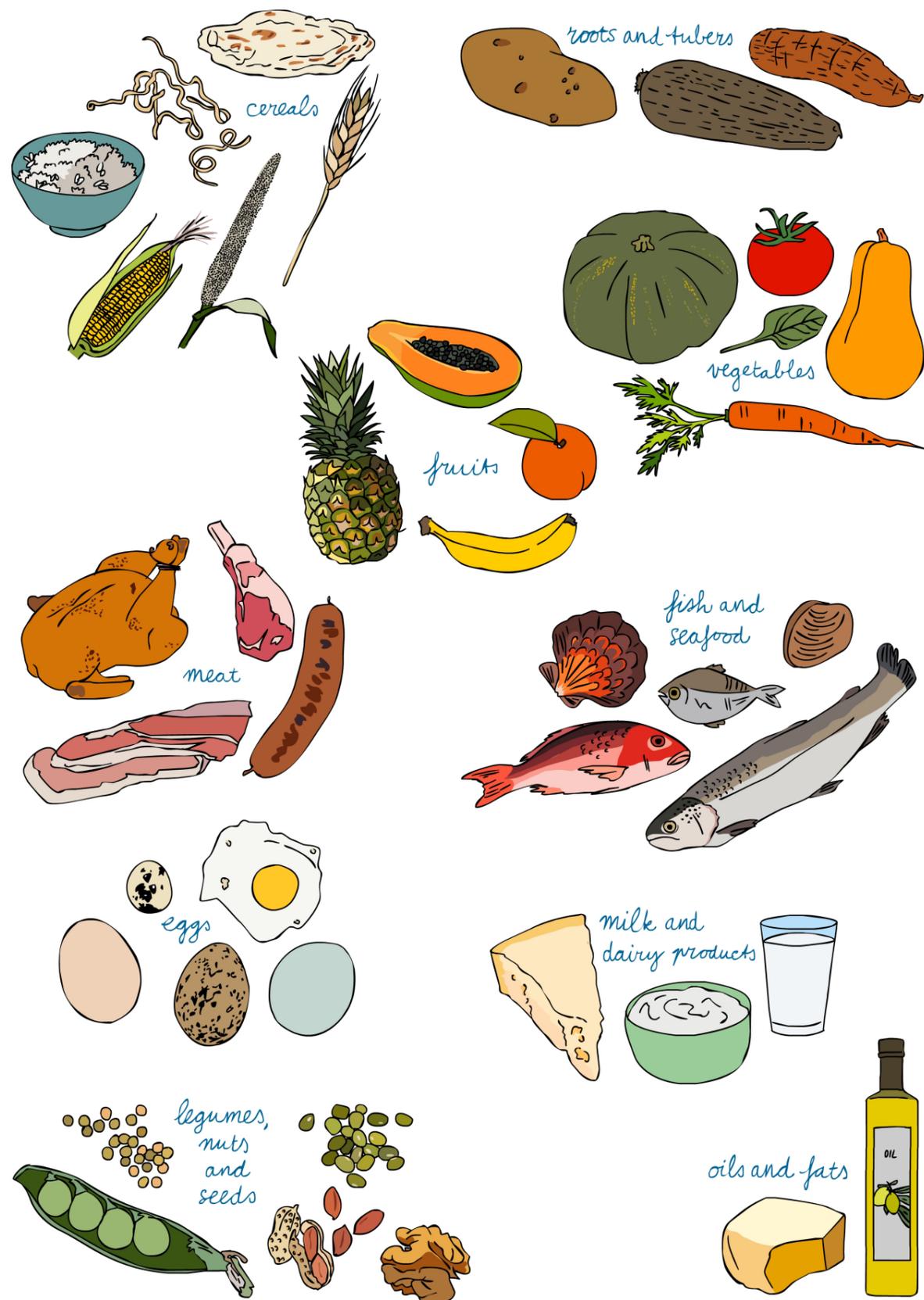
The facilitator or a guest health/nutrition expert explains the major causes and consequences of malnutrition at a country or regional level. This can be done by using any available training materials, such as those prepared by the Ministry of Health. This short presentation must show why it is important to consume food from different groups. It can highlight the importance of dietary quality, and also show that a malnourished body cannot fight infections easily, falling ill more easily.

Nutrition

Nutrition is made up of three underlying components: food, health and care.

- Food: related to the adequate access to sufficient food sources. Diet is the composition of the consumed food.
- Health: affected by the state of the local environment, water quality, access to public health facilities, and sanitation practices.
- Care: includes home practices, i.e. monitoring if children are consuming enough nutrients.

Nutrition refers to the use of food by our body in order to provide for the functions of living, working, growing, protection from diseases, and a healthy development. It is determined by the digestion, absorption in the body, assimilation and use of the nutrients present in food items.



This illustration shows the different food groups. A balanced diet considers the sufficient quantity and quality of food items from each food group, or what is generally known as dietary diversity. Each food group provides different substances that are equally indispensable for the body. It is recommended to vary the foods consumed within each food group.

Step 2: Reflecting on the malnutrition tree

Invite participants to look at or think about a tree. Then ask them the following questions:

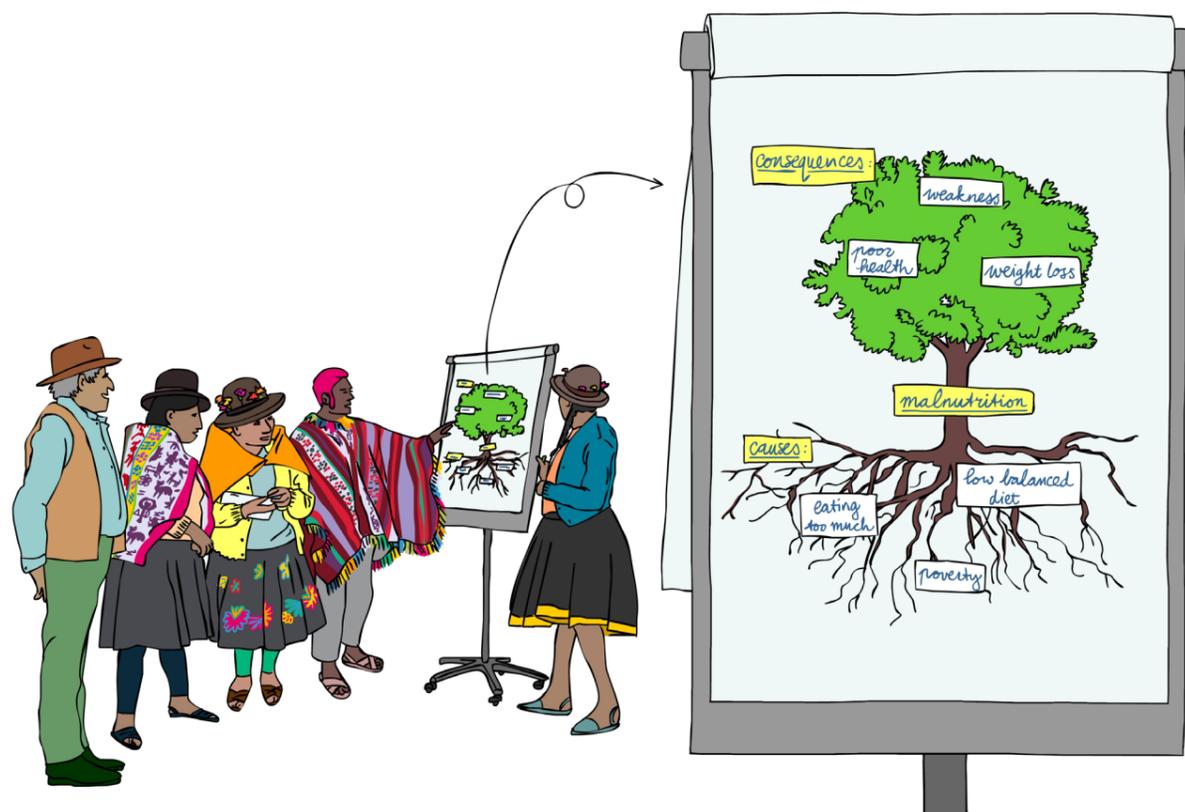
- What makes trees strong?
- Which parts of the tree do we see, and which ones are invisible?
- Why are the roots of the tree important?

Explain that the roots of the tree are essential to give it strength and nutrients, and to help it grow. Indicate that this session will be about identifying and explaining the root causes of malnutrition.

Step 3: Drawing the tree

Divide the participants into sub-groups and give each sub-group a piece of paper and markers. Ask them to complete the following tasks.

- Draw a tree and label the trunk of the tree "malnutrition" (or a more specific issue such as anemia, low birth weight or vitamin deficiency).
- Draw the branches and leaves (the parts we can see). Label the branches with the "signs and consequences of malnutrition", and ask them to write them down.
- Draw the roots of the tree and label them "causes of malnutrition" and ask them to write them down. To that end, challenge the group by asking continuously "yes, but why?".
- Ask participants:
 - Which food groups are lacking in the diet?
 - Do you consume a variety of foods within each food group?
 - If dietary diversity is low, why is that so?
 - Has dietary diversity increased or decreased over time?



Step 4: Reviewing the answers

Bring the sub-groups together and ask each sub-group to present the results of their discussions in plenary.

Step 5: Reflecting on the results

Ask participants to discuss:

- What are the major causes of malnutrition that are common to the drawings of all sub-groups?
- What are the consequences of malnutrition listed by all sub-groups?
- Are there some families in the community that have less access to nutritious food? Why?
- Are there some household members more prone to be

malnourished? Who? Why?

- What are you doing to improve household and community nutrition?
- Which root causes of malnutrition could be addressed through the FFS? How?
- Which root causes of malnutrition should be brought to the attention of local authorities and policy makers?

You could compare the conclusions of the plenary discussion with local information on malnutrition provided by nutrition and health departments. In case of differences, encourage participants to discuss why they may have different perceptions on malnutrition.

Step 6: Summarizing the key points

Write down the results and make photographs of the tree diagrams. Note down the suggested actions. Write in each photo and report the name of the FFS and the date. The results of the subgroup discussions can be captured in (a copy of) Form A.

Intra-household food distribution

In this exercise, farmers (both female and male) will play a role game to analyze the food distribution processes within the household, look at the way in which decisions are made regarding food preparation and consumption, and explore how this may affect the nutrition of some family members.

Recommended duration: 2 hours

Materials required: large sheets, paper, markers and pencils, a pot with raw staple (e.g. rice, potatoes, etc.), local vegetables, meat (e.g. beef, chicken, fish, etc. of different sizes; alternatively they can be drawn on paper and cut), three eggs, 6 plates. The food items should be the ones commonly consumed in the community.



NB: at the start of this session, the facilitator explains the objective of the exercise and the steps that need to be taken.

Step 1: Understanding household decision-making in relation to food

Ask participants to divide into sub-groups and reflect on the following questions, sharing their opinions as a group :

- How often is food prepared (e.g. breakfast, lunch, dinner, other times)?
- Who decides what will be prepared for breakfast, lunch and dinner (or other types of meals that are consumed at home)?
- Who is responsible for preparing food?
- Who decides how much food must be cooked?

Step 2: Intra-household food distribution, setting up the scene

In contrast to other steps, this role game can be done in plenary, and not in sub-groups. Ask for six volunteers to come forward to play a role game. This consists of setting up a "typical" household for this community (i.e. representative in terms of number of children, presence of grandparents or in-laws, etc.). For example, one volunteer could act as the husband, the other as wife, and the others as mother-in-law, and a three-year old daughter, etc. Remember this is just a role play.

Ask the volunteers to sit down, so that all participants can see them, and put an empty plate in front of each one. Read out loud to the entire group: "It is dinner time. The wife (or mother-in-law, depending on the answers to the questions of the previous exercise) has cooked rice (or local staple), some fish of different sizes (or other type of meat that is the most commonly consumed), three eggs, and some vegetables."

Step 3: Acting out the scene

Give the food items to the volunteer playing the wife (or the person responsible for distributing the food, depending on the answers to the previous questions) and ask her to distribute the food among the family members as it is commonly done in the community.



Step 4: Discussing the scene

Ask the volunteers for the role play:

- Is everybody happy with what and how much they got?
- Who are the winners and losers?

Ask the other FFS participants to reflect in plenary:

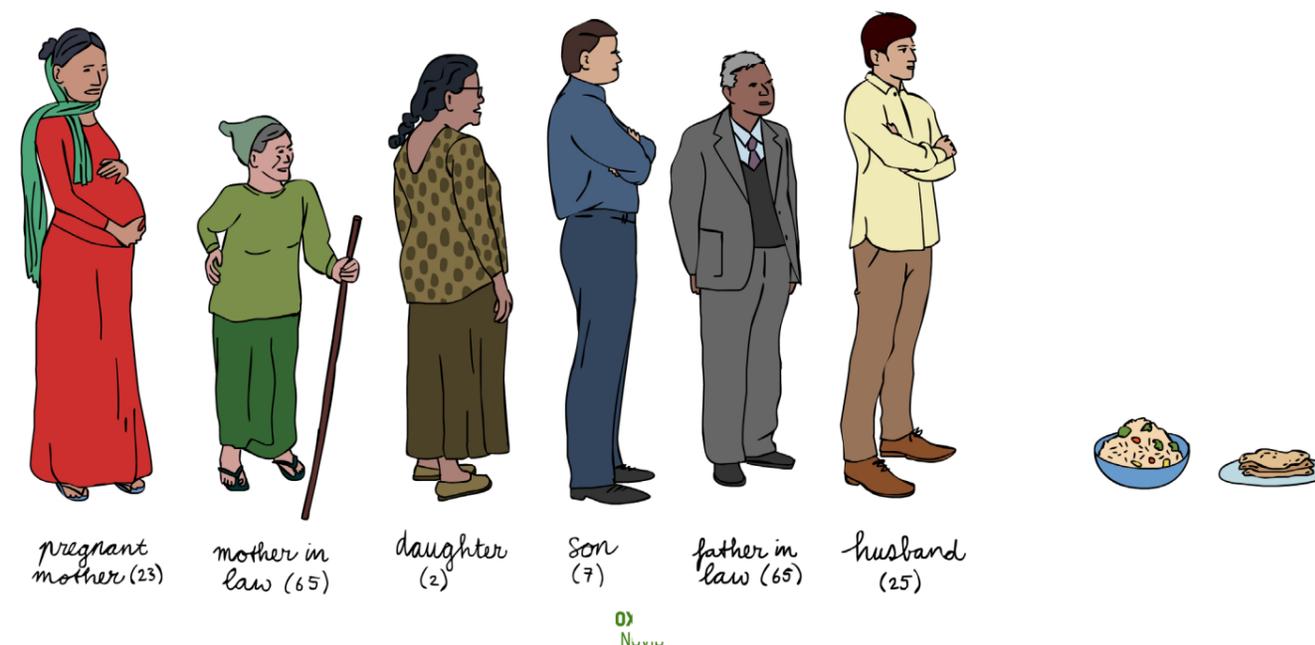
- Is this kind of food distribution familiar to you?
- Why did some people get more or better food than others?
- Who got the eggs? Who got the meat? Why?
- Who was served first? Who was served last? Why?
- Are there any differences between household members on how often they eat? Why?
- What is the effect of food distribution on the nutrition of different household members?
- Do you think that people in the household have different food needs? Who, what kind of food?
- Do you think children in the community are well-nourished? What is good in the food they receive and what is lacking?

- Do you think pregnant and breast-feeding women in the community are well-nourished? What is good in the food they receive and what is lacking?

Step 5: Reflecting on gender- and position-based inequalities

Ask all volunteers to stand up. Then ask the FFS participants to indicate their position of power in the household (based on the household member they represent in the role game) by moving them into a line, one standing behind the other. Volunteers have to re-organize themselves in the line for each question. The questions could be discussed in sub-groups or plenary.

- Who are the most and least powerful in terms of decision-making?
- Who are the most and least powerful in terms of their ability to raise income to buy food?
- Who are the most and least powerful in terms of access to food?
- Why are some members of the household more powerful or powerless? What gives them power?
- What is the effect of power inequality on the nutrition and health of each household member? Differentiate between men, women, girls and boys. Also consider pregnancy and breast-feeding.



Step 6: Highlighting key points in relation to inequalities

Based on the results of the previous steps, discuss the following:

- Issues of social exclusion and inequality need to be recognized, explored and addressed not only in the community, but also within the household.
- There is often a great deal of inequality in many households and, as a result, the nutrition, health and wellbeing of some family members are seriously affected. Often, discrimination occurs based on gender and age.
- When people feel that they are making a valuable contribution to the household and to the community, they have a good sense of self-esteem. A person's sense of self-esteem begins to develop during childhood.
- Boys and girls should be treated like equally valued individuals who deserve attention at home, in their communities and at school. They should have equal opportunities to be well-nourished and healthy.

Step 7. Summarizing the key points

Summarize the main results of the exercise. Write them down and make photographs of the large sheets (if any). Write in each photo and report the name of the FFS and the date. The results of the subgroup discussions can be captured in (a copy of) Form B.

A list with local food plants

In this exercise FFS participants will define a list of approximately 25 local food plants they will work with during the coming sessions. Although farmers might identify more plants, it is important to focus on this list, or otherwise the coming exercises could demand too much time.

Recommended duration: 1 hour

Materials required: large sheets, paper, markers and pencils, information about the local food plants that are important for tackling the main nutrition problems in the region (this list can be obtained from the local nutritionists or health department).



NB: at the start of this session, the facilitator explains the objective of the exercise and the steps that need to be taken.

Step 1: Discussing the definition of local food plants

Explain to participants: "local food plants are plants known and used by local communities as food. Local food plants include a wide range of species, ranging from domesticates (staples and minor crops), to semi-domesticated species and wild food plants. Local food plants not only grow in agricultural fields (where they can grow e.g. as crops or weeds), but also in home gardens, roadsides, aquatic ecosystems, forests and other environments".

Step 2: Listing local food plants

Ask each sub-group to write down in a big paper sheet a list of all local food plants they know. Then, ask sub-group participants to vote for the most important ones for household nutrition, in order to select

25 plants from this initial list. Ask them to look in detail at each of the 25 plants:

- Does this plant help to tackle the main nutritional problems in the region?
- Is this plant available during the food scarcity season?
- Does it provide variety to the diet?
- Does it have a health enhancement component?
- Does this species have to be consumed in moderation?
- Can it be consumed by children?
- Does it grow in a place where pesticides are sprayed?
- Does it need a special processing to remove toxic compounds?



Encourage them to remove from the list and replace any species that might contain toxic compounds.

Invite members of the different sub-groups to present their list to the large group. Write in another big paper sheet the compilation of all plants selected by all sub-groups. Indicate which plants were listed by more than one sub-group. Together with all participants, agree on the final list of 25 plants that will be the focus of the coming diagnostic exercises, based on the number of sub-groups that listed each plant.

Step 3: Reflecting on the local food plant list

Compare the list with the information on nutritious local food plants provided by local nutritionists or health department.

- Have these plants been included in the list?
- Would you like to add [some of] them to the final list?

Depending on the outcomes of this discussion, add species to the final list.

Step 4. Summarizing the key points

Summarize the main results of the exercise. Write them down and make photographs of the large sheets (if any). Write in each photo and report the name of the FFS and the date. The results of the subgroup discussions can be captured in (a copy of) Form C.

Timeline analysis

In this exercise farmers will assess how nutrition and consumption patterns of local food plants have changed in the past three decades, relating this to the changes seen in terms of the environment or to other cultural, educational, socio-economic or technological changes.

Recommended duration: 2 hours

Materials required: large sheets, paper, color cardboards, markers and pencils



NB: at the start of this session, the facilitator explains the objective of the exercise and the steps that need to be taken.

Step 1: Setting the timeline

Ask participants to think about a major event that occurred about 30 years ago, setting this as a point of reference. If participants prefer, it is also possible to define a different starting point, such as a moment that seriously affected the local food system.

Divide the FFS group into sub-groups. Provide a sheet to each sub-group. Draw a line on the sheet, write the starting point on one extreme and the present year on the other extreme. Add years along the x-axis. Ask participants to indicate important historical events on the timeline, such as a drought-period, presidential elections, the introduction of agricultural subsidies, the building of a road, etc.

Step 2: Identifying major changes in the context

Distribute cardboards to the participants in all sub-groups and ask them to write down the changes that happened in the community related to the following themes (one card per event):

- Agroecosystems: Appearance of new pest and crop diseases, new irrigation systems, introduction of fertilizers and pesticides, modern seeds, loss of soil productivity, new institutions/actors and other sources of knowledge and technologies working in agriculture.
- Health and diets: Major changes in the local diets, changes in the food scarcity season, new institutions/actors working on health and nutrition, food programs.
- Socio-economics: Changing access and roles of barter and money markets, road infrastructure, aid programs, migration.
- Political: Major policy decisions affecting the local livelihoods (from local to national).
- Environment: Loss of forest and lakes, droughts, floods and other extreme weather events.
- Culture, education and technology: New food preferences among the youth, access to new sources of information with mobile phones.

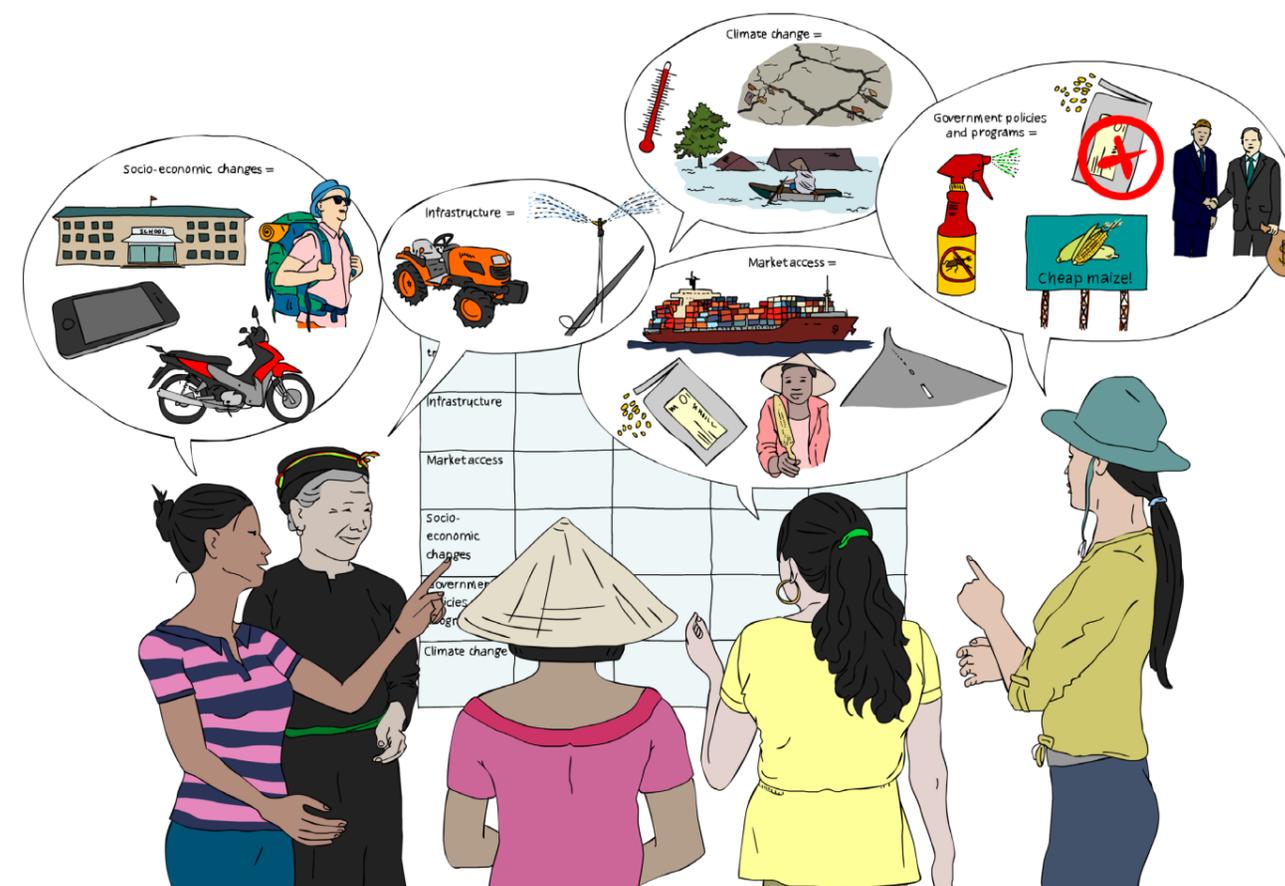
Ask participants to place each card along the timeline in chronological order.

Step 3: Describing the impact of major community changes on the use of local food plants and nutrition.

Ask participants to use cardboards (preferably a different color than in the previous exercise) to write any significant changes seen in relation to the access and use of local food plants (in particular plants from the list selected in the previous exercise). This could be, for example, a reduced presence of a species because of deforestation, lower consumption rates of a plant because young people associate it with backwardness and poverty, or increased consumption of a plant because it is promoted by rural extension. Also ask participants to write down in cardboards any major changes on the nutritional status of the community. Ask them to place the cards along the timeline according to the date when the change happened.

Reflect with participants why these changes happened, and their relation to the major community changes listed in the previous step of this exercise. The results of the discussions can be captured in the following table.

Context and trends	Past situation	Current situation	Impact on the nutritional status of the community	Impact on the use of local food plants
Agro-ecosystems				
Health and diets				
Socio-economic				
Environment				
Culture, education and technology				



Step 4: Discussing results of the analysis with the plenary group

Ask sub-groups to share their results in the plenary, asking them the following questions:

- Has the consumption of local food plants in the village changed in the last years?
- What were the major events that affected the consumption of local food plants?
- What were the major events that affected the nutritional status of the community?
- Did subgroups come up with a different analysis?
- What are the potential solutions to the challenges that you wish to address?
- What types of local food plants would you like to grow or use more to address these challenges?

Step 5. Summarizing the key points

Summarize the main results of the exercise. Write them down and make photographs of the large sheets. Write in each photo and report the name of the FFS and the date. The results of the subgroup discussions can be captured in (a copy of) Form D.

Resource flow map of local food plants

This exercise will allow the documentation and exchange of knowledge associated to local food plants in the community. This comes before the identification and assessment of the key bottlenecks for their production, harvest or consumption.

Recommended duration: 2 hours

Materials required: large sheets, paper, markers and pencils, cards with the names of the 25-30 local food plants selected in the 'Local food plant list' exercise.

! NB: at the start of this session, the facilitator explains the objective of the exercise and the steps that need to be taken.

Step 1: Distributing the local food plant species among sub-groups

Distribute the cards with the names of the 25-30 local food plants among sub-groups, with each sub-group receiving 5-6 plants.

Step 2: Drawing the food system map

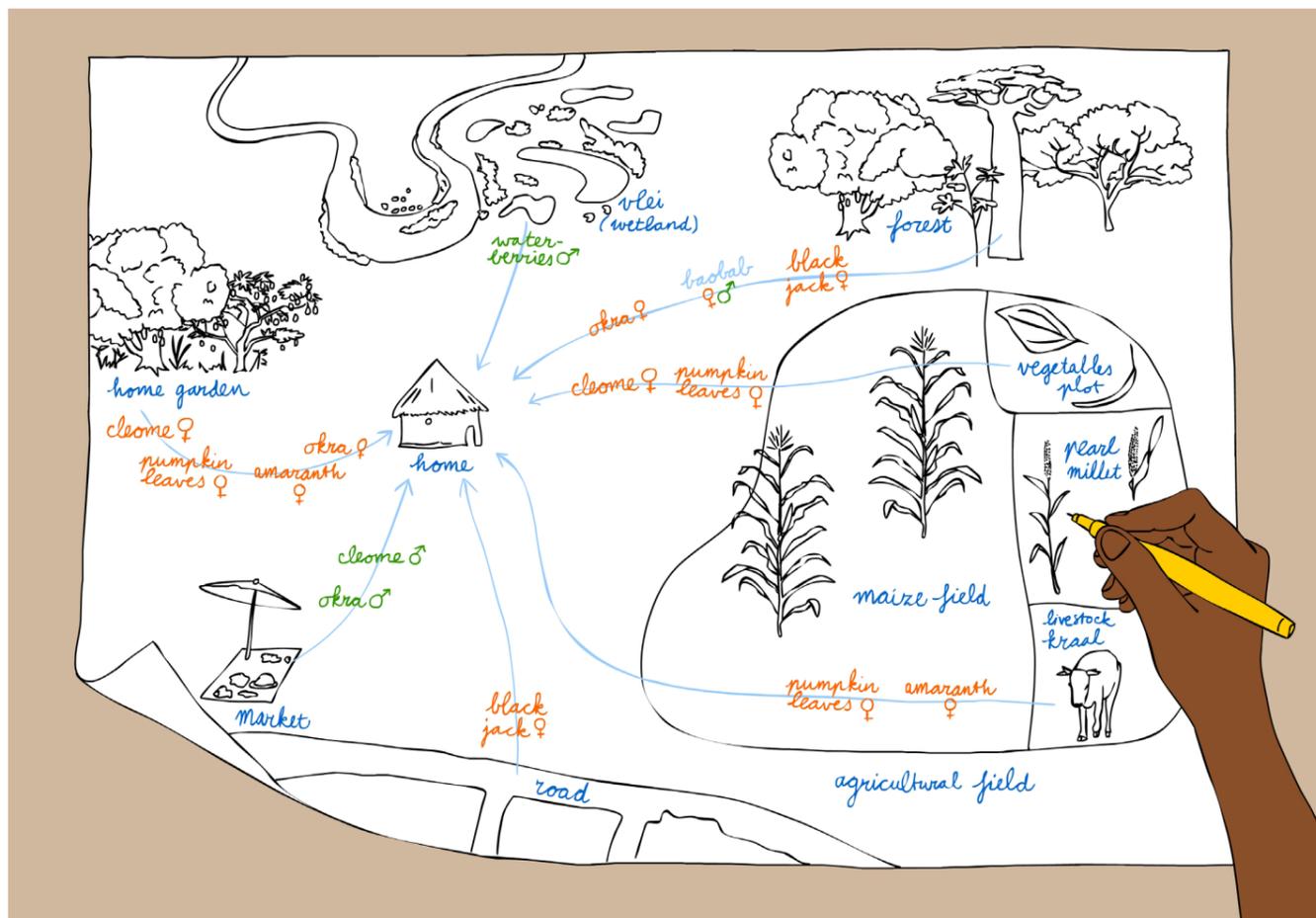
Give each sub-group a large sheet and ask them to draw a house (including the home garden), farm, forest, river and other features and sites in the area from where they regularly obtain food plants. Make sure to include the market place. When necessary, start the process of drawing and let the participants take over.

Step 3: Filling-in the resource flow map

For each local food plant in a sub-group's list, ask participants to draw one arrow in the map pointing towards the house, indicating where

this plan is usually taken from (e.g. forest). Explain that they can use more than one arrow per species if it is found in different places. Ensure that both men's and women's knowledge is captured.

- Are people reluctant to eat it? Who? Why?
- Does it have any stress-tolerance qualities? (i.e. flood tolerant, drought tolerant, pest resistant).



Step 4: Reflecting on the importance of each plant species

Ask sub-groups to present their resource flow maps in the plenary. While presenting the results, capture the importance of each plant according to how useful it is for the local household. FFS participants may introduce additional characteristics of local food plants into the discussion.

Step 5. Summarizing the key points in the local food plant register

Write down the results and make photographs of the maps. Write in each photo and report the name of the FFS and the date. The results of the subgroup discussions can be captured in (a copy of) Form E, including information for the 25-30 species.

For each plant, ask participants to specify the following:

- Who harvests or gathers each plant? For that purpose participants can use different symbols or colors for men, women and children.
- Which are its edible parts? (i.e. roots/tubers, stem, leaves, flower, fruits, shoots, seed, stalk of flower, whole aerial parts).
- What is its seasonal availability? (e.g. all year, dry season, rainy season).
- Does it have any perceived nutritional or medicinal values? Which ones?

Seasonal calendars and coping strategies

In this exercise FFS participants will prepare the seasonal calendar of the community, including the food scarcity period, in order to highlight the role local food plants play to strengthen the coping strategies households apply during times of stress.

Recommended duration: 2 hours

Materials required: large sheets, color cards, paper, markers and pencils, cards with the names of the 25-30 local food plants selected in the "Local food plant list" exercise.

! NB: at the start of this session, the facilitator explains the objective of the exercise and the steps that need to be taken.

Step 1: Setting the calendar

Ask participants to set a particular month as the starting point of the year-calendar. Divide the FFS group into sub-groups and ask each sub-group to draw on the top of a large paper sheet an horizontal line starting with the month set as starting point. Indicate the 12 months of the year along the line. Then ask participants to highlight the seasons and other periods they may distinguish, showing them below the line.

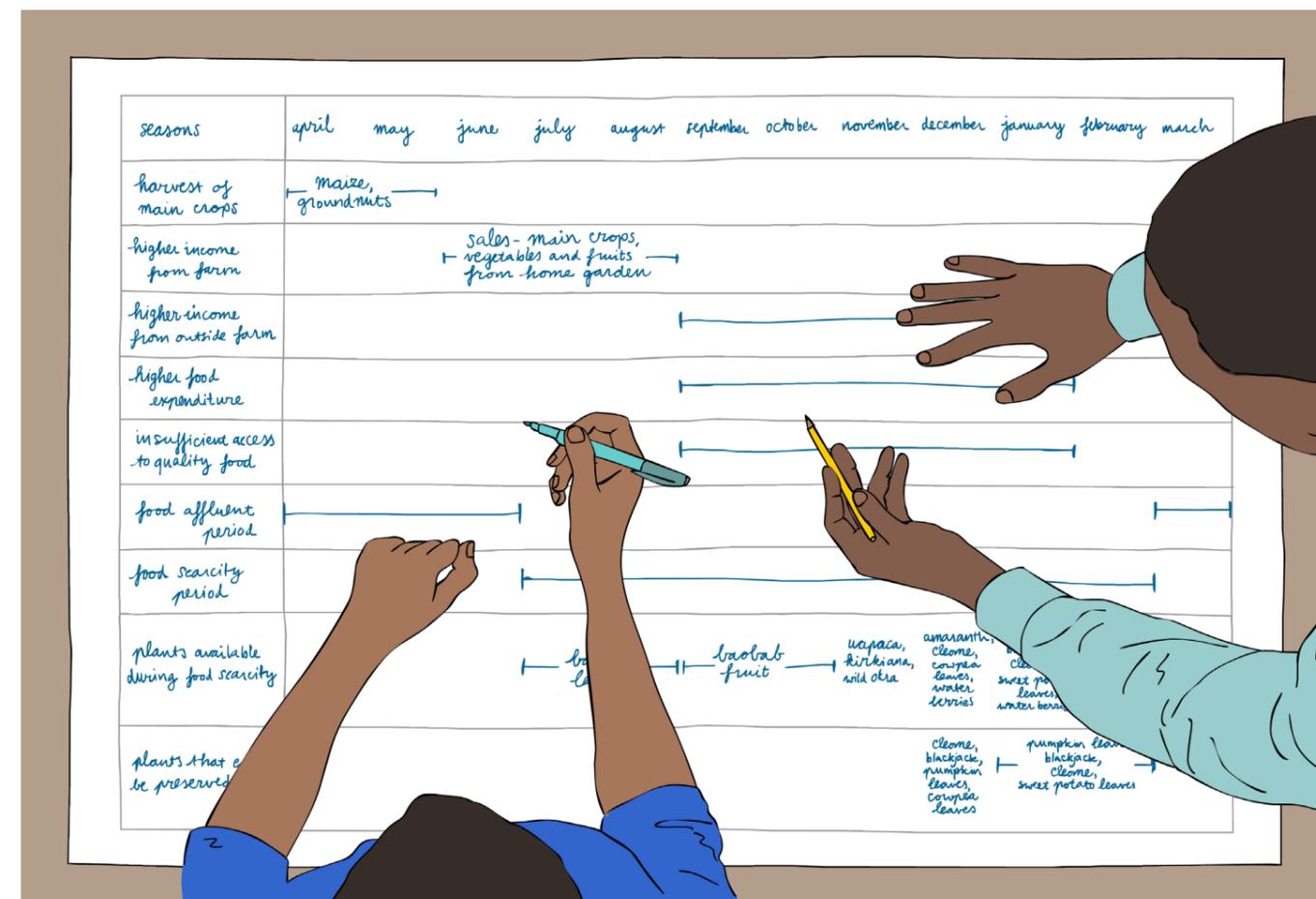
Step 2: Filling-in the calendar

Ask participants to show (also below the line):

- When are the major crops harvested?
- When do community members have a higher income (from farm and off-farm activities)?
- When do they spend more money and resources on food?

- When is the access to good quality food insufficient?
- When are the affluent and food scarcity periods?
- What are the main characteristics of the food scarcity period?

Invite sub-groups to present their results in plenary. Reflect on the main characteristics of the food scarcity season, and list them in a separate large paper sheet.

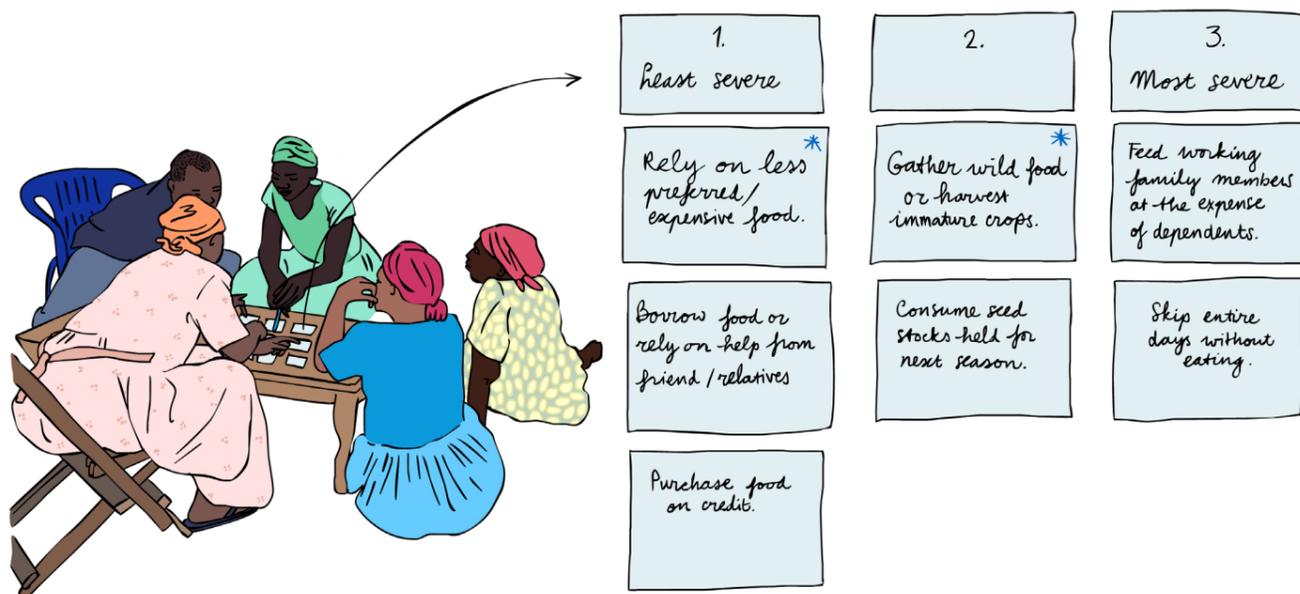


Step 3: Listing the coping strategies

Ask each sub-group to write the main strategies they use to cope with food scarcity, using separate cards.

Step 4: Reflecting on the severity of the coping strategies

Ask participants in each sub-group to sort the coping strategy cards according to their severity. Use three degrees of severity, separating those used during the extreme food scarcity periods and those used under least extreme situations. Draw an asterisk on the cards corresponding to the strategies that can be strengthened with the use of local food plants. Make a photo of the results of each sub-group and write down the results.



Step 5: Discussing and reflecting on the role of local food plants

Distribute the cards with the names of the 25-30 local food plants among sub-groups, in a way so that each sub-group receives 5-6 plants. Ask participants to go back to the seasonal calendar and write – below the food scarcity period – the names of the local food plants that are consumed during this time. Then ask them to write down, in a different color, the names of the plants that could be preserved to increase their availability during the food scarcity season.

Invite sub-groups to present their results in plenary. Discuss how the consumption of local food plants could strengthen their strategies to cope with food scarcity.

Step 6: Summarizing the key points

Write down the results and make photographs of the calendar and card sorting. Write in each photo and report the name of the FFS and the date. The results of the subgroup discussions can be captured in (a copy of) Form F.

Management and domestication

This exercise looks at the species that are domesticated, semi-domesticated and wild, placing them along a continuum of human management. Following the principle that management is not exclusive to domesticated species, it further explores the management practices that are applied to semi-domesticated and wild species, and their related problems.

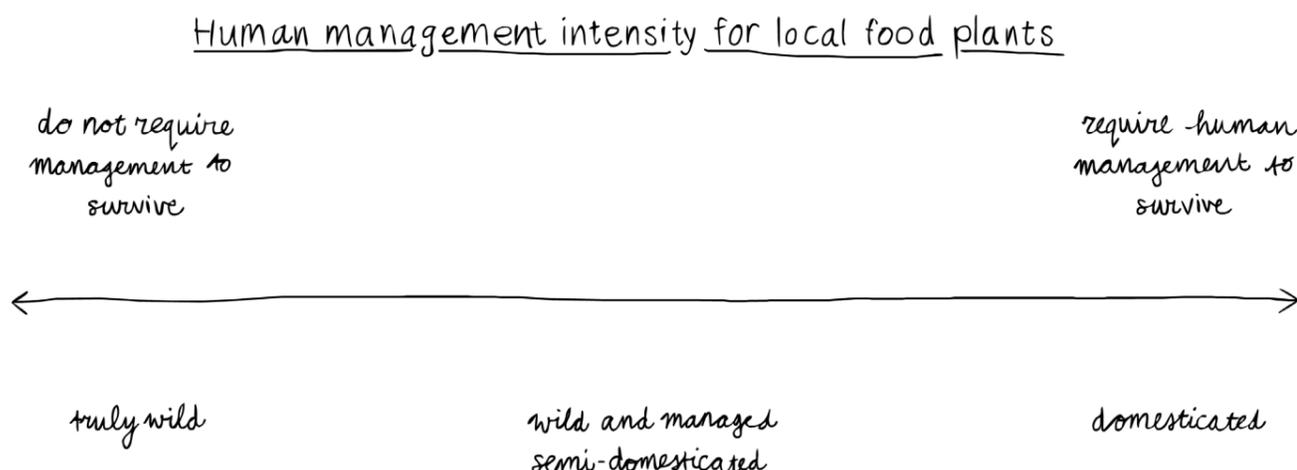
Recommended duration: 1 hour 30 minutes

Materials required: large sheets, color cards, paper, markers and pencils, cards with the names of the 25-30 local food plants selected in the "Local food plant list" exercise.

! NB: at the start of this session, the facilitator explains the objective of the exercise and the steps that need to be taken.

Step 1: Setting the local definitions of 'domesticated' and 'wild'

Ask farmers to give their own definition of a 'wild plant' and write the answers in a large paper sheet. Then ask for their idea of a 'domesticated plant'. After this short discussion, explain that local food plants occur along a continuum of different degrees of intensity of human management.



General insights on management of semi-domesticated and wild local food plants

Management practices include transplanting, watering, protecting, fertilizing, pruning, weeding, and mulching, among others. For example, transplanting a plant from an agricultural field to a home garden is a type of management. One plant could be managed by none, one or more types of practices. Management practices can take place in the original place occupied by the plant, or when transplanted to another place. Management practices could differ in different locations.

Management practices could have different intensities, placing species along a continuum. The continuum starts from truly wild plants that do not require any type of management to survive. In between, there are wild and managed or semi-domesticated plants that require one or more types of management practices. The continuum finalizes in domesticated plants, which are these that include [about] all types of management practices, given that they are more dependent on human management for survival.

The continuum of human management is bi-directional, and does not necessarily involve preordained steps toward a greater management intensity and, ultimately, domestication. In other words, a wild plant may be protected, transplanted, cared for and even cultivated without becoming a domesticated species. Likewise, for many species the transition from cultivation to domestication does not fully occur. For instance, while some plants that used to be intensely managed in the past are only tolerated or slightly protected at present, other wild food species are becoming domesticated ones.

Step 2: Discussing the management practices associated to local plants

Distribute the cards with the names of the 25-30 local food plants among sub-groups, in a way so that each sub-group receives 5-6 plants. Ask participants to discuss the management practices associated to each assigned local food plant, taking into account that one plant could be managed with one or more practices.

You can ask the following questions:

- Do you transplant planting material of this species from one place to the other? Explain that transplanting could take place in the same environment (e.g. from home garden to home garden) or from one environment to another (e.g. from agricultural field to home garden).
- If yes, could you please list the places or environments where you obtain the planting material, and the environments where you plant it? Indicate that planting material not only includes seeds, but also non-reproductive parts of the plant (i.e. for vegetative propagation).
- Do you water the plant? Explain that a plant could be exclusively watered, or watered as part of a group of different plants that grow together.
- Do you protect it? Some examples of protection are: putting a stick so the plant can climb on it (for vines), placing a small fence around a plant so the animals cannot eat it, placing a plant pot on a higher place so the chicken cannot damage it, among others.
- Do you fertilize it? Indicate that a plant could be exclusively fertilized, or fertilized as part of a group of different plants that grow together.
- Do you prune it?
- Do you weed it?
- Do you mulch it?

Add any management practice missing in the list of questions above.

Ask participants to discuss in which environment(s) each management practice takes place. Write down the results on a large paper sheet.



Step 3: Placing the local food plants along the management continuum

Ask participants to draw an arrow in a large paper sheet, representing the management intensity – ranging from 'truly wild' species to 'domesticated species'. In the middle of the continuum indicate 'semi-domesticated species', which is equivalent to 'wild and managed' (please see the definitions in the box). Ask participants to place the cards with the names of the plants along the continuum.



Step 5: Summarizing the key points

Write down the results and make photographs of the large paper sheets. Write in each photo and report the name of the FFS and the date. The results of the subgroup discussions can be captured in (a copy of) Form G.

Step 4: Discussing the main management problems along the continuum

Ask participants to discuss the main management problems associated with the groups of plants found along the continuum:

- Do all wild and managed species share the same management problems?
- Do problems depend on their abundance or availability (i.e. whether a species is rare or has a weedy behavior)?
- Do management problems differ per growth place?
- Are the harvesting techniques used sustainable?

Ask sub-groups to present and discuss their results in a plenary session.

Importance and bottlenecks

In this exercise the participants will identify the bottlenecks that limit the consumption of local food plants. This information will be crucial for setting the FFS objectives.

Recommended duration: 1 hour and 30 minutes

Materials required: large sheets, paper, markers and pencils, cards with the names of the 25-30 local food plants selected in the "Local food plant list" exercise, results from the previous exercises.

! NB: at the start of this session, the facilitator explains the objective of the exercise and the steps that need to be taken.

Step 1: Defining the importance for the selection of local food plants

Distribute cards with the names of the 25-30 local food plants among sub-groups, in a way so that each sub-group receives 5-6 plants. Ask participants to write down the importance of each plant on a large paper sheet. Explain that one plant can be seen as important in more than way.

This is the moment to go back to the outcomes of the previous exercises, where farmers discussed how local food plants may help them to improve their diet and nutrition during the food scarcity and sufficiency periods. The results of the "Resource flow map" and "Seasonal calendar and coping strategies" are particularly useful.

Examples of criteria of importance, listed by farmers from Zimbabwe, Peru, Myanmar and Vietnam during the first phase of the program (2014-2018):

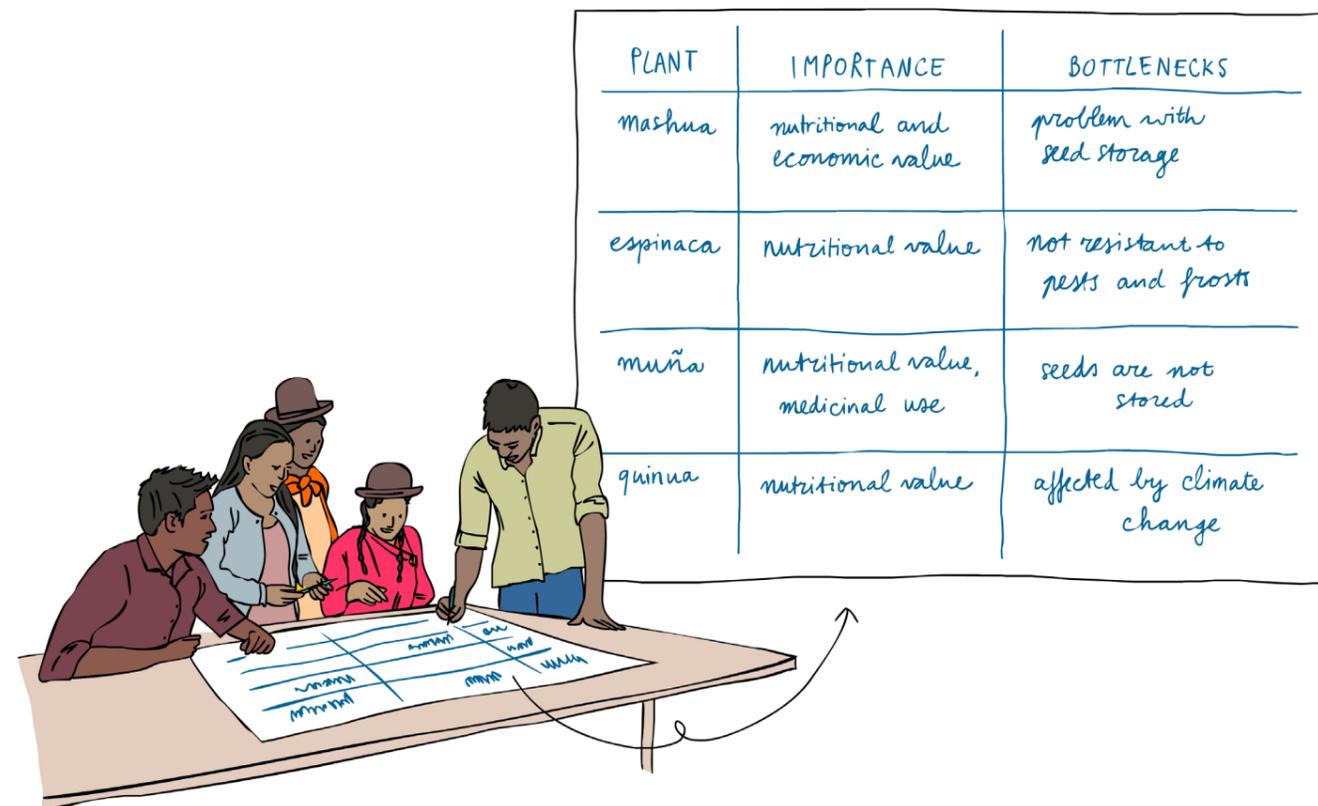
- Alternative food source during the food scarcity period
- Good taste or smell
- Attractive appearance
- Nutritional value
- Medicinal value
- Specific nutritional importance for children, pregnant women or elderly
- Role in specific ceremonies or cultural festivities
- Importance for cultural identity

Step 2: Defining the bottlenecks for the consumption of local food plants

Ask participants to write down on a large paper sheet the barriers or bottlenecks that limit the consumption of each plant. Explain that one plant could have one or more bottlenecks. This is the time to go back to the results of previous exercises, in particular "Management and domestication", where farmers listed the main management problems. However, note that bottlenecks could also be related to the access to markets, the local norms and traditions, knowledge, etc.

Examples of bottlenecks that limit the consumption of local food plants, listed by farmers from Zimbabwe, Peru, Myanmar and Vietnam during the first phase of the program (2014-2018):

- Reduced abundance: *"becoming scarce due to dwindling utilization or to climate change"*.
- Social stigmatization: *"not eaten by men because it is associated to poverty"*.
- Harvesting practices: *"lack of knowledge on sustainable harvesting techniques"*.
- Taste, smell and texture: *"bitter taste and bad smell"*.
- Availability and access: *"cannot be grown in summer"*.
- Cultivation: *"lack of knowledge on agronomic practices"*.
- Propagation: *"lack of knowledge on breaking seed dormancy"*.
- Seed conservation: *"lack of knowledge on seed management and storage"*.
- Health concerns: *"eating too much causes stomach pain"*.
- Cooking: *"preparation takes too much time"*.
- Preservation: *"difficult to store"*.
- Knowledge on nutritional value: *"lack of nutritional information"*.
- Commercialization: *"not available on the market"*.



Ask the different sub-groups to discuss and share their results in the plenary:

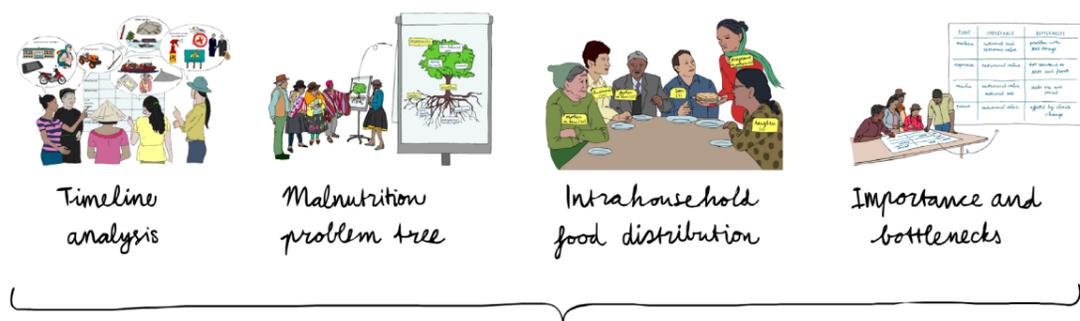
- Does everybody in the FFS agree on the importance and bottlenecks assigned to each local food plant?
- Which criteria of importance are specific to women, men or youth?
- Which bottlenecks are specific to women, men or youth?
- Is there anything to add to the results of the exercise?

Step 3: Summarizing the key points

Write down the results and make photographs of the large paper sheets. Write in each photo and report the name of the FFS and the date. The results of the subgroup discussions can be captured in (a copy of) Form H.

Setting FFS research objectives

In this exercise, FFS participants will define and prioritize the objectives and results that they would like to achieve with the FFS work, and their corresponding activities. The discussion will be based on the results coming from the previous diagnostic exercises.



Setting FFS research objectives for single or multiple species that contribute to the objectives of the FFS:

- Improving the quality and diversity of the diet
- reducing the severity and length of the food scarcity period

Recommended duration: 2 hours.

Materials required: large sheets, paper, markers and pencils, cards with the names of the 25-30 local food plants selected in the "Local food plant list" exercise, results from all FFS diagnostic exercises.



NB: at the start of this session, the facilitator explains the objective of the exercise and the steps that need to be taken.

Step 1: Identifying the research and development objectives

Invite participants to divide themselves into sub-groups. Ask each sub-group to reflect on the main results of the exercises "Malnutrition problem tree", "Intra-household food distribution" and "Timeline analysis", and to propose potential objectives. Explain that these objectives should be based on how local food plants could help to tackle the problems. Write them down in a large paper sheet. This first group of objectives most likely will be based on different groups of species.

Ask participants to reflect on the main results of the exercises "Seasonal calendar and coping strategies", "Management and domestication" and "Importance and bottlenecks", which are more applied to single species. Revise the main results for each individual species, particularly the bottlenecks that prevent their consumption, and propose potential objectives that would help to tackle the respective bottlenecks. Write them in the large sheet. This second group of objectives most likely will be for single species; but different species – which share similar bottlenecks – could also share similar objectives.

Some examples of research objectives addressing the main bottlenecks that limit the consumption of local food plants, listed by farmers from Zimbabwe, Peru, Myanmar and Vietnam during the first phase of the program (2014-2018):

Bottleneck	Corresponding research objectives
Reduced abundance	To explore sustainable harvesting practices
Social stigmatization	To improve cooking and processing methods for acceptability To promote seed and knowledge exchange
Harvesting practices	To improve harvesting practices
Sensory characteristics	To explore cooking and processing methods to improve taste, smell, or texture
Availability and access	To improve propagation techniques To explore methods of seed conservation To promote seed and knowledge exchange To explore food preservation and processing techniques
Cooking	To explore cooking and processing methods

Step 2: Prioritizing the research objectives for the first FFS cycle

If appropriate, explain that it may be difficult to address all objectives in one single FFS cycle. In some cases, several FFS cycles might be needed to achieve a particular objective for a single plant. Ask each sub-group to choose from three to five research objectives to present and discuss in the plenary. In the case of objectives corresponding to single species, they could select the plants based on their importance (see results of the previous exercise "Importance and bottlenecks").

Ask sub-groups to present and discuss their results in the plenary, where participants will be encouraged to agree on the main research objectives for the next FFS cycle. Ensure that the objectives are feasible and achievable using the FFS approach. Throughout the exercise, ensure that men, women and youth participate, and that the ideas and priorities of both are taken into account.

Step 3: Identifying the FFS activities

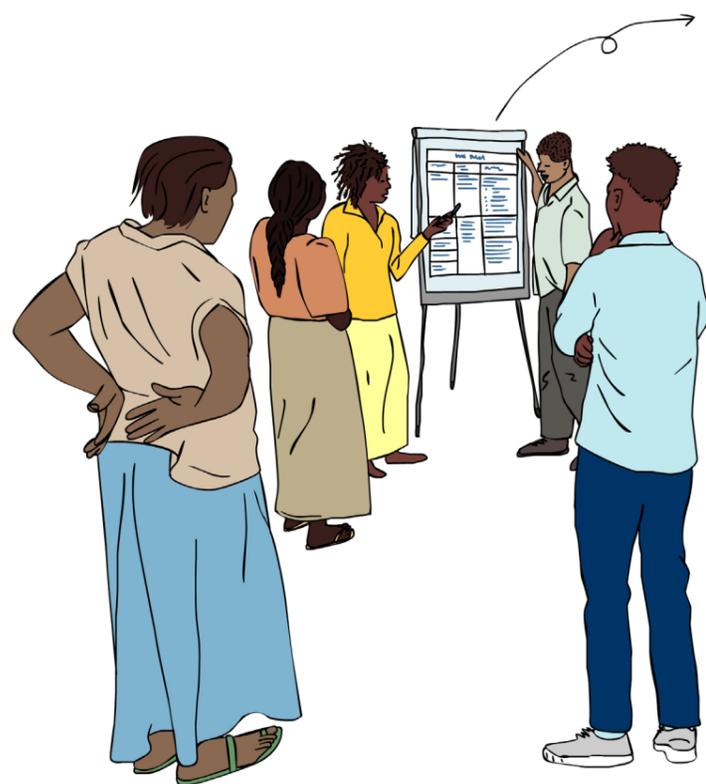
Once the research objectives for the next FFS cycle have been selected, ask participants to discuss in sub-groups which activities would have to be carried out in order to achieve the desired results satisfactorily.

Ask sub-groups to share their results, and prepare a consolidated list of activities in a large sheet, building on the inputs of the different sub-groups. Reflect with participants:

- Are all activities relevant for achieving the objectives?
- Are they all feasible?
- Are the activities listed in the right order?
- Are any additional activities needed?
- Which local knowledge and skills will be used to meet the objectives?
- Which new (scientific or technical) knowledge and skills need to be developed in order to successfully conduct the activities?

- Do you have guidelines in the FFS Field Guide on Nutrition and Local Food Plants?

The sheet should also include tasks to be carried out during the weekly FFS meetings, and outside the FFS meetings, such as the purchase of material (e.g. seeds) and/or the coordination steps to be taken with institutions or authorities.



PLANT: NYEVHE		
Bottlenecks	Research objectives	FFS activities
Does not germinate easily	To evaluate germination rates after different seed treatments	Designing experimental plots with the following treatments: 1. regular farmer practice 2. hot water 3. use of ash 4. dry planting 5. scarification
The leaves are too small and difficult to harvest	To explore new ways of preparation with cooking demonstrations	Harvesting leaves from the top, middle and bottom of the plant, cooking them separately and noting the time needed to cook.
It takes a long time to cook		
It has a bitter taste		Testing different recipes to improve taste (e.g. adding fresh milk, 'mova' or pumpkin leaves)
Limited recipes available		

Step 4. Summarizing the key points

Write down the results of the exercise. Make photographs of the sheets. Write in each photo and report the name of the FFS and the date. The results of the subgroup discussions can be captured in (a copy of) Form I.

Form A: Malnutrition problem tree

Question	Answer
What are the leading causes of malnutrition perceived by farmers?	
What are the consequences of malnutrition perceived by farmers ?	
What are the possible solutions to malnutrition as perceived by farmers?	

Form B: Intra-household food distribution

Question	Options	Answer
Who decides what to eat in the household?	(1= Father, 2= Mother, 3= Children, 99= Other, please specify) [multiple options allowed]	
Who are the most powerful household members in terms of access to food?	(1= Father, 2= Mother, 3= Children, 99= Other, please specify) [multiple options allowed]	
Who are the least powerful household members in terms of access to food?	(1= Father, 2= Mother, 3= Children, 99= Other, please specify) [multiple options allowed]	



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