MODULE 5

Causes of malnutrition

PART 3: TRAINER'S GUIDE

Introduction

The trainer's guide is the third of four parts contained in this module. It is NOT a training course. This guide provides guidance on how to design a training course by giving tips and examples of tools that the trainer can use and adapt to meet training needs. The trainer's guide should only be used by experienced trainers to help develop a training course that meets the needs of a specific audience. The trainer's guide is linked to the technical information found in Part 2 of the module.

Module 5 covers the causes of malnutrition. The module introduces a widely accepted conceptual model that helps to understand the causes of malnutrition and the levels at which they act. It looks at immediate, underlying and basic causes and how they influence the nutritional status of individuals. The application and limitations of the conceptual model are discussed.

Field workers involved in emergency nutrition programmes and/or senior managers may require training on the causes of malnutrition so that they can understand the multiple connected factors that cause malnutrition and develop appropriate interventions to improve the nutrition situation.

Navigating your way round the guide

The trainer's guide is divided into six sections.

1. **Tips for trainer** provide pointers on how to prepare for and organise a training course.

2. **Learning objectives** sets out examples that can be adapted for a particular participant group.

3. **Testing knowledge** contains an example of a questionnaire that can be used to test participants' knowledge on their understanding of the causes of malnutrition either at the start or at the end of a training course.

4. **Classroom exercises** provide examples of practical exercises that can be done in a classroom either by participants individually or in groups.

5. **Case studies** contain examples, one from Africa and one from Asia, that can be used to get participants to think.

6. **Field-based exercises** outlines ideas for a field visit that may be conducted during a longer training course.

CONTENTS

1. Tips for trainers

Step 1: Do the reading!

- Read Part 2: Technical Notes, of this module.

- Familiarise yourself with the technical terms from the glossary.

- Read through the following key documents (see full references and how to access them in Part 4 of this module):

  - FAO. (2005). *Protecting and Promoting Good Nutrition in Crisis and Recovery, Part 1*, p. 5-20. Rome: FAO.

  - FAO. (2007). *Distance Learning Course: Nutritional Status Assessment and Analysis, Learner Notes, Part 1*. Rome: FAO.

  - SCUK. (2004). *Emergency Nutrition Assessment: Guidelines for Field Workers, Chapter A1: Introduction to the causes of malnutrition*, p. 11-17. London: SCUK.

  - WFP. (2000). *Food and Nutrition Handbook, Chapter 4: Malnutrition*, p. 19-23. Rome: WFP.

- Refer to Module 1 which introduces nutrition in emergencies to remind yourself of the various types of contexts in which malnutrition develops.

- Be sure that you take time to read the exercises and model answers so that you can decide if they meet your training objectives.

- Decide which sessions to include and within sessions, which activities to include.

Step 2: Know your audience!

- Find out about your participants in advance of the training:

  - How many participants will there be?

  - Have any of them got experience of nutrition programming or assessments?

  - Could participants with experience be involved in the sessions by preparing a case study or contribute through describing their practical experience?

Step 3: Design the training!

- Decide how long the training will be and what activities can be covered within the available time. In general, the following guide can be used:

  - A **45-60-minute** classroom-based training session can provide a very basic overview of the causes of malnutrition.

  - A **90-minute** classroom-based training session can provide a more in-depth overview of the causes of malnutrition and include practical exercises to reinforce learning.

  - A **half-day** classroom-based training session can provide a more in-depth understanding and include all three practical exercises or a case study. Be sure to include classroom exercise 2 and one other. This module is an important step towards preparing for Module 8 on assessment and Modules 12 to19 on interventions to prevent and treat malnutrition.

  - A **full-day** classroom-based training session is appropriate if you do Module 5 as a stand-alone one-day course. You could include the case study material in the session where participants work in groups of about four people and present back their findings in plenary. If your participants all work in one country and have contextual experience of a specific scenario, you could use the session to develop your own case study with the group by getting them to write up the scenario following the model from the case studies presented here. This will reinforce their active learning.

  - A **3-5 day** classroom plus field-based training can provide a full training in order to carry out a causal analysis of factors impacting on the nutrition situation of a population for a particular context. This training would also include case studies and field exercises.

- Identify appropriate learning objectives. This will depend on your participants, their level of understanding and experience, and the aim and length of the training.

- Decide exactly which technical points to cover based on the learning objectives that you have identified.

- Divide the training into manageable sections. One session should generally not last longer than an hour.

- Ensure the training is a good combination of activities, e.g., mix PowerPoint presentations in plenary with more active participation through classroom-based exercises; mix individual work with group work.

Step 4: Get prepared!

- Prepare PowerPoint presentations with notes (if they are going to be used) in advance and do a trial run. Recommended PowerPoint presentations that can be adapted from existing sources include:

Existing PowerPoints for a session on the causes of malnutrition

	Author	Specific session
1.	FAO Distance Learning Course – Nutritional Status Assessment and Analysis	Part 1: PowerPoint and trainer notes, from slide 6 onwards
2.	WFP Basic Nutrition Training Course	Session 5: Causes of malnutrition (PowerPoint, trainer notes, exercise)
3.	NutritionWorks Nutrition In Emergencies Training Course	Causes of Malnutrition
4.	NutritionWorks and Feinstein International Famine Centre, Tufts University (2007). SPHERE Nutrition Training Module	Session 2: Assessment and Analysis. Part 1 of this session covers the causes of malnutrition in slides 4 to 14

- Prepare exercises and case studies. These can be based on the examples given in this trainer's guide but should be adapted to be suitable for the particular training context.

- Find the appropriate equipment for the session, such as flip chart paper and marker pens.

- Prepare a 'kit' of materials for each participant. These should be given out at the start of the training and should include:

  ◦ Timetable showing break times (coffee and lunch) and individual sessions.

  ◦ Handouts including Parts 1, 2 and 4 of this module plus exercises as required.

  ◦ Pens and paper.

REMEMBER

People remember 20 per cent of what they are told, 40 per cent of what they are told and read, and 80 per cent of what they find out for themselves.

People learn differently. They learn from what they read, what they hear, what they see, what they discuss with others and what they explain to others. A good training is therefore one that offers a variety of learning methods which suit the variety of individuals in any group. Such variety will also help reinforce messages and ideas so that they are more likely to be learned.

---

2. Learning objectives

Below are examples of learning objectives for a session on the causes of malnutrition. Trainers may wish to develop alternative learning objectives that are appropriate to their particular participant group. The number of learning objectives should be limited; up to five per day of training is appropriate. Each exercise should be related to at least one of the learning objectives.

Examples of learning objectives

At the end of the training participants will:

- Be able to explain the causal factors of malnutrition that are identified in the conceptual model and the level they act on.
- Be aware of how the various factors impacting on nutrition are often connected and be able to give examples of how they influence each other.
- Understand the application of the conceptual framework.
- Understand the limitations of the conceptual framework.
- Describe the two immediate causes of malnutrition (inadequate diet and disease) and their inter-relationship.
- Recognize the links between inadequate household food security, inadequate care and inadequate services and an unhealthy environment e.g. safe water and sanitation as inter-related causes in both emergencies and non-emergencies.
- Understand how basic causes can affect nutritional status, especially in emergencies.
- Understand how seasonal factors may influence the nutrition situation and how seasonal changes act on the different levels of causality.
- Apply the conceptual model to identify and prioritise the needs and gaps in services of a population.

3. Testing knowledge

This section contains one exercise which is an example of a questionnaire that can be used to test participants' knowledge about causes of malnutrition either at the start or at the end of a training session. The questionnaire can be adapted by the trainer to include questions relevant to the specific participant group.

Exercise 1: What do you know about the causes of malnutrition?

What is the learning objective?

- To test participants' knowledge about the causes of malnutrition

When should this exercise be done?

- *Either* at the start of a training session to establish knowledge level.

- *Or* at the end of a training session to check how much participants have learned.

How long should the exercise take?

- 20 minutes

What materials are needed?

- **Handout 1a:** What do you know about the causes of malnutrition?: Questionnaire

- **Handout 1b:** What do you know about the causes of malnutrition?: Questionnaire answers

What does the trainer need to prepare?

- Familiarise yourself with the questionnaire questions and answers.

- Add your own questions and answers based on what is appropriate for the participant group.

Instructions

Step 1: Give each participant a copy of Handout 1a.

Step 2: Give participants 10 minutes to complete the questionnaire working alone.

Step 3: Give each participant a copy of Handout 1b.

Step 4: Give participants 5 minutes to mark their own questionnaires and clarify the answers where necessary.

Handout 1a: What do you know about the causes of malnutrition?: Questionnaire

Time for completion: 10 minutes

Answer all the questions.

Note that for some questions there is only ONE correct answer while for other questions there are SEVERAL correct answers

1. Common consequences of malnutrition in emergency situations include: *Circle the correct answers*.

    a) Food allergies

    b) Growth failure

    c) Increased risk of disease

    d) Reduced ability to work

2. True or false?

    The main immediate causes of malnutrition are a lack of food and inappropriate cooking practices.

3. Which of the following statements are true or false?

    a) Malnutrition increases the severity of disease

    b) Malnutrition increases the duration of disease

    c) Malnutrition increases the resistance to disease

    d) Malnutrition increases the risk of disease.

4. The main causes of death during an emergency include: *Circle the correct answers*.

    a) Iron deficiency anaemia

    b) Acute respiratory tract infections

    c) Malaria

    d) Measles

5. True or false?

    Household food insecurity affects all members of the household in the same way

6. True or false?

    Adequate shelter serves to keep people safe and warm which helps protect them from disease.

7. True or false?

    The values of the society influence the priority given to the care of children, women and the elderly, but all societies prioritise the care of children above all else.

8. The elements of care most critical for women during pregnancy and breastfeeding include: *Circle the correct answers.*

    a) Extra quantities of good-quality foo

    b) Extra rest time

    c) Extra health care

    d) Extra bedding

9. Which of these are seasonal factors to consider in nutrition emergencies? *Circle the correct answer.*

    a) Market price of foods

    b) Migration patterns of wild animals

    c) Tides

    d) Diarrhoeal diseases

Handout 1b: What do you know about the causes of malnutrition?: Questionnaire answers

1. Common consequences of malnutrition in emergency situations include:

    a) Food allergies

    b) **Growth failure**

    c) **Increased risk of disease**

    d) **Reduced ability to work**

    Specific food allergies are not normally caused by malnutrition although severely malnourished individuals may have a low tolerance of all foods.

2. True or **false**?

    The main cause of malnutrition is lack of food and inappropriate cooking practices.
    False. The main immediate causes are related to inadequate diet and disease. Lack of food and inappropriate cooking practices may be factors that influence the diet, but are not the immediate causes.

3. Which of the following statements are true or false?

    a) Malnutrition increases the severity of disease. T

    b) Malnutrition increases the duration of disease. T

    c) **Malnutrition increases the resistance to disease. F**

    d) Malnutrition increases the risk of disease. T

    Resistance to disease is generally decreased by malnutrition.

4. The main childhood killers include:

    a) Iron deficiency anaemia

    b) **Acute lower respiratory tract infections**

    c) **Malaria**

    d) **Measles**

    While anaemia has serious health consequences in individuals, and in extreme forms can contribute to the cause of death, most children worldwide die of the other 3 diseases in the list along with a fourth, diarrhoea.

5. True or **false**?

    Household food insecurity affects all members of the household in the same way.
    False. Individuals within a household have different needs and some are able to cope better than others. For example, young children have a higher metabolic rate than adults, so require proportionately more energy and nutrients for their body weight. Household food insecurity affects members differently at different times. For example, if there is a reduction in available food at the household level it is likely to affect children, the elderly and the infirm more quickly than able-bodied adults. Mothers often give up food to feed their children, but this can harm the mother's health, especially if she is pregnant.

6. **True** or false.

    Adequate shelter serves to keep people safe and warm and that allows them to protect themselves from disease.
    True. Shelter is a basic need that protects people from their environment and helps to protect them from disease.

7. True or **false**.

    The values of the society influence the priority given to the care of children, women and the elderly, but all societies prioritise the care of children above all else.
    The values of society play an important part in influencing the priority given to the care of children, women and the elderly. However, cultural norms will protect different members of society through formal and informal systems with different degrees of success. Therefore, not all societies prioritise the care of children above all else, this may also be partly due to entrenched poverty.

8. The elements of care most critical for women during pregnancy and breastfeeding include:

    a) **Extra quantities of good-quality food**

    b) **Extra rest time**

    c) **Extra health care**

    d) Extra bedding

    Pregnancy and lactation place extra nutritional requirements on women to ensure adequate foetal and infant growth. They also require qualified medical staff to look after their health and they should avoid strenuous work.

9. Which of these are seasonal factors to consider in nutrition emergencies?

    a) **Market price of foods**

    b) **Migration patterns of wild animals**

    c) **Tides**

    d) **Diarrhoeal Diseases**

    All the above seasonal factors should be considered during a nutrition emergency as they all have the potential for influencing the adequacy of the diet and the health status of an individual. Tides are governed by the moon on a monthly cycle and cultural norms in some societies influence the foods eaten during these times. Although the relationship may be less obvious, it is still a potential factor to be explored.

4. Classroom exercises

This section provides examples of practical exercises that can be carried out in a classroom context by participants individually or in groups. Practical exercises are useful between plenary sessions, where the trainer has done most of the talking, as they provide an opportunity for participants to engage actively in the session. The choice of classroom exercises will depend upon the learning objectives and the time available. Trainers should adapt the exercises presented in this section to make them appropriate to the particular participant group. Ideally, trainers should use case examples with which they are familiar. Exercise 2 cannot be done as a stand-alone exercise to explain the causal factors impacting on the nutrition situation.

Exercise 2: Match the picture to the most likely underlying cause

What are the learning objectives?

- To be aware that malnutrition has multiple causes

- To understand that the causes of malnutrition act on the individual, household, community and society to affect the nutritional status of individuals

When should this exercise be done?

- *Either* at the start to establish what is known

- *Or* half-way through the session, once the main concepts have been covered

How long should the exercise take?

- 30 minutes

What materials are needed?

- **Visual aids for Module 5, Exercise 2**

- PowerPoint presentation with photos provided separately

- Small blank cards, thick marker pens and Blu-tack to stick the cards and photos

- **Handout 2a:** Match the picture to the most likely underlying cause: Model answer

Instructions

Step 1: Divide participants into groups of three or four people. Hand out three photos/printouts representing situations that depict possible causes of malnutrition to each group.

Step 2: Ask each group to discuss each photo and identify which of the three underlying causes of malnutrition it represents best. They should note down their reasons. Give them 10 minutes to discuss the three photos and to label on the pieces of card whether they fall under the INADEQUATE HOUSEHOLD FOOD SECURITY, INADEQUATE CARE or INADEQUATE SERVICES AND UNHEALTHY ENVIRONMENT groups of underlying causes and then ask them to stick their photos with the label they have given it on the wall (preferably all around the room).

Step 3: Once all groups have finished, ask participants to walk round the room looking at all the photos and labels for a few minutes. When they sit down again, find out if the groups agree with the labels given and, if not, get participants to explain which photo and label they disagree with, one by one, and help the group resolve the discrepancy in plenary.

Step 4: Use Handout 2a as your explanatory notes during the plenary session and give out copies to each participant at the end.

Handout 2a: Match the picture to the most likely underlying cause: Model answer

Slide 1 – CARE

This is an Albanian mother in the back of a truck being taken to a refugee camp during the Kosovo conflict. She is feeding her newborn baby from a bottle.

This illustrates the Care group as breastfeeding is one of the most important ways to ensure the adequate growth and development of a newborn in that it simultaneously addresses needs for food, health and care. Mothers need to be given time, space and encouragement to breastfeed. This is particularly important during emergencies when the emotional bond between a mother and her baby needs to be reinforced.

Slide 2 – SERVICES and an unhealthy environment

This slide illustrates the Service group. It shows toilets and sinks in a refugee camp in Kosovo. During an emergency people need access to good sanitation and safe water supplies.

Slide 3 – FOOD SECURITY

This slide illustrates the inadequate household food security group. The empty grain stores in Ethiopia shown here is an example of food insecurity, either because the crop yields have been reduced or because people's purchasing power has been reduced so they have no money to buy supplies.

Slide 4 – FOOD SECURITY

This example illustrates the inadequate household food security group. Food aid can provide a vital form of food security during emergencies. Encourage participants to think of other situations where they may get free food (school meals, breast-feeding, at social events such as weddings) and how this differs from relief food in an emergency situation.

Slide 5 – CARE

This slide shows a father in southern Africa looking after his young son. It illustrates the Care group, in emergencies carers may die or become separated from their relatives, so others have to take over. This has been particularly true in disasters such as the Asian tsunami that killed many mothers, or in areas affected by HIV and AIDS pandemics, where many women of reproductive age have died.

Slide 6 – SERVICES – health

This slide shows a vaccination campaign being carried out in Nicaragua. This illustrates the Services group as vaccination (particularly against measles) is extremely important in emergencies because malnourished children are very susceptible to infection. Measles also suppresses the immune response and increases the risk of subsequent infection.

Slide 7 – ALL THREE

This illustrates all three groups (food security, care and services) of underlying causes in Zambia. HIV and AIDS have implications for food security, care and the health environment. HIV and AIDS are now among major contributory factors to emergencies in Africa, e.g., the southern Africa emergency in 2001-2003.

Slide 8 – MARASMUS AND KWASHIORKOR CASES

This shows two severely malnourished children, e.g., the outcome within the framework.

The child on the left is suffering from *kwashiorkor* (possibly marasmic-kwashiorkor), and on the right, the child has *marasmus*.

Use these slides as an opportunity to illustrate the consequences of malnutrition.

Key messages

These photo cards are meant to generate discussion. It is more important to get participants to think broadly and beyond food than it is for them to correctly answer these questions.

- The model aims to provide a practical and simple tool for describing, structuring and organising information related to the underlying and basic causes of malnutrition in a particular situation.

- The conceptual model recognises that malnutrition in the individual can be caused as a result of an inadequate diet and/or the presence of disease. These are referred to as the immediate causes of malnutrition and they can make each other worse in what is called the **infection-malnutrition cycle**.

- The conceptual model also recognizes that a wide range of complex and diverse factors at the community and household level can influence the immediate causes of malnutrition. These are broadly categorised in three groups: inadequate household food security, inadequate care and inadequate services including an unhealthy environment.

- These underlying causes are influenced by basic causes. These basic causes relate to the potential resources and the social, economic, ideological and political context. Informal and formal structures may be grossly disrupted during a conflict. The potential human, structural, natural and financial resources are likely to be reduced. A political, security and cultural analysis is helpful for developing an understanding of the basic causes that contribute to malnutrition.

Exercise 3: Create a seasonal calendar

What is the learning objective?

- To understand that all levels of causality may be affected by seasonal changes.

When should this exercise be done?

- Towards the end of the session after introducing seasonality as a concept

How long should the exercise take?

- 60 minutes

What materials are needed?

- **Handout 3a:** Create a seasonal calendar

- **Handout 3b:** Sample seasonal calendar

Instructions

Step 1: Divide the participants into groups of three or four people. If you have a group from different ecological zones, put people from the same zone together. Distribute Handout 3a and ask them to develop a seasonal calendar for a location they know. They should choose ONE location per group. Give them 30 minutes to do this and circulate between the groups, offering help.

Step 2: When the groups have finished, ask them to swap calendars so that each group looks at another group's calendar. Then ask the participants to present their group's calendar to everyone highlighting what time of the year different factors may affect the nutritional status of individuals. This should take 20 minutes

Step 3: Do not get too focused on the details of this exercise. Instead concentrate on ensuring that groups have grasped the idea of how seasonality affects the different levels of causality to different degrees at different times of the year. Remind them that a good analysis of the causes of malnutrition will identify seasonal influences that may impact on nutritional status during the year. This should take 5 minutes.

Step 4: Distribute Handout 3b as a model of a good seasonal calendar.

Handout 3a: Create a seasonal calendar

1. *Work in groups of three or four for this exercise. Decide on a location that all of you or at least one of you is familiar with and draw up a seasonal calendar based on the calendar below. You have 20 minutes.*

2. *Fill out the calendar below by marking the months when food security, care and services including the environment may influence the adequacy of an individual's diet and their health status. These factors may include:*

    Rainfall data (amount and density)   *Temperature and wind*

    Human disease patterns   *Animal disease patterns*

    Main crop harvests   *Workload changes related to food production*

    Animal movements   *Population movement/migration*

    Income flows   *Food price increases*

3. *Once you have finished you will be asked to give your calendar to another group for comments. Ask the trainer for help if you need it.*

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC

Handout 3b: Sample seasonal calendar

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC
RAINFALL		LIGHT	LIGHT	LIGHT		HEAVY	HEAVY	HEAVY				
STAPLE CROP HARVEST					▓	▓	▓	▓				
MARKET PRICE INCREASE FOR STAPLE CROP		▓	▓									
CASH CROP HARVEST									▓	▓	▓	
LIVESTOCK GRAZING AND CROP RESIDUE AVAILABILITY			▓	▓	▓	▓	▓	▓	▓	▓		
AGRICULTURAL LABOUR DEMAND	▓	▓				▓						
HUMAN DISEASES	DIARR-HOEA	MALA-RIA	MALA-RIA			ARI	ARI	ARI			DIARR-HOEA	DIARR-HOEA
FOOD STORES AT HOME					▓	▓	▓	▓	▓	▓		

This is an example of a seasonal calendar showing the changes in the calendar year that can affect availability and access to food in relation to rainfall patterns and the agricultural seasons, as well as livestock welfare related to fodder and water availability.

The price of the staple food in the market increases just before the harvest when stocks tend to be low.

Agricultural labour demand is related to the agricultural season, and related to the health status of workers whose work capacity can be affected by seasonal disease patterns. The calendar can help demonstrate that January and February are difficult months for households relying on agriculture as their livelihood because the price of the staple is high in the market, there is limited grazing availability for animals and the dry season may cause an increase in the expenditure on animal health care services. In addition, January and February see higher levels of diarrhoea due to the dry season and the onset of the rains brings malaria, possibly affecting household health and increasing expenditure on medicine. These are the months when malnutrition is more likely to increase.

Calendars are useful tools to understand when different underlying causes are most likely to affect the immediate causes.

Exercise 4: Understanding the interrelated relationship of the underlying causes.

What is the learning objective?

- To apply the conceptual model to different emergency contexts as a tool for analysing how changes in one of the underlying causes may impact on the other underlying causes.

When should this exercise be done?

- At the end of the theoretical part of the session.

How long should the exercise take?

- 45 minutes

What materials are needed?

- **Handout 4a:** Understanding the interrelated relationship of the underlying causes.

- The conceptual model for understanding the causes of malnutrition on a large sheet of paper to mount on a wall or flip chart

What does the trainer need to prepare?

- Familiarise yourself with the calculations and results before the session and ensure handouts are available and the participants will have calculators ready.

Instructions

Step 1: (5 min.) Start the exercise by asking the participants the following questions in plenary: What is the meaning of a good food supply? What are the factors that make it difficult for a household to attain a good food supply?

A good household food supply can be defined as having access to enough nutritious and safe food to meet the dietary needs of all household members year round. Households can obtain food either through their own production or by purchasing it, but more commonly through a combination of both. This requires family members who are healthy and strong enough to work in activities that produce food or provide the financial means to purchase food.

Disruptions to food production and marketing systems due to natural disasters or conflict can rapidly affect what household members eat, especially when people have to sell their assets or leave their homes. The food supply can be affected by changes in the yields of crops or fish, the labour force and the distance to markets to buy or sell food. Food preparation methods in the home affect household food supply. Over time, such factors are likely to have harmful consequences for the health and nutrition status of household members. Introduce the stages in the food supply system: **production/storage including large scale government grain reserve storage schemes down to storage at the household level/transportation/buying and selling/preparing/eating.**

Step 2: (20 min.) Distribute Handout 4a and ask participants to work in pairs. Go through the table together.

Step 3: (20 min.) Get participants to share some of their findings with the rest of the group. There is no model answer for this exercise as it is based on participants' experience. As a trainer you should make sure that participants can see that shortfalls in the food supply system affect not only FOOD SECURITY, but also SERVICES and CARE and may lead to malnutrition.

Handout 4a: Understanding the interrelated relationship of the underlying causes.

Time for completion: 20 minutes

Work in pairs for this exercise.

Look at the table below and become familiar with the different stages of the food supply system and the examples given for each stage in column 2.

- Production

- Storage

- Transporting

- Buying and selling

- Preparing

- Eating

Decide on an emergency situation that one participant is familiar with in which there was a high prevalence of malnutrition. This could be a slow onset emergency, a sudden onset disaster or a protracted situation. Personal experience is not essential; some general information about the situation is enough for this exercise.

Discuss which particular shortfalls could apply to the situation you have agreed to work on and what could be their consequences on the underlying causes of malnutrition. Place a tick in the columns that apply, as shown in the example:

- Food security

- Care

- Services e.g. health care, safe water and sanitation

Use the last column in the table to write down the reason why a particular food supply problem (including shortfalls and blockages) can be one of the underlying causes of malnutrition. When you have finished, be prepared to present your findings to the rest of the group in a session led by the trainer. You should be able to see how food is linked to the other underlying causes of malnutrition.

Shortfalls in the food supply system and how they link to the three underlying causes of malnutrition

STEPS IN FOOD SUPPLY SYSTEM	SOME TYPICAL SHORTFALLS IN THE FOOD SUPPLY SYSTEM	FOOD	CARE	SERVICES e.g. health,	REASON FOR LINK TO UNDERLYING CAUSE OF MALNUTRITION
Food production	**Example: Father is too ill to work hard**	✓		✓	**Reduced income Increased health cost**
	Hand tools restrict amount of land cleared				
	Limited access to fishing waters				
	Cash crops destroyed by irregular weather				
	Expensive seeds				
	No extension worker services				
	No access to credit				
	Lack of rain causing water and fodder shortages for animals				
	Armed soldiers stealing crops				
Storage	Inappropriate storage facilities e.g. grain not kept dry.				
	Infestation of insects/rodents into stored grain				
Transporting Food and selling and buying	Middleman increases transport costs				
	Roads destroyed by floods – cannot travel				
	Bad terms of trade at market				
	Food prices increase suddenly				
	Money spent on low nutritional value foods				
Food preparation	Mothers have no time to cook				
	Unfamiliar foods distributed by aid agency				
	Limited access to clean water for cooking				

5. Case Studies

Two case studies are presented in this section: one from Afghanistan and one from the Democratic Republic of the Congo. Case studies are useful for getting participants to think through real-life situations. They also provide an opportunity for participants to work in a group and develop their analytical skills. Trainers should develop their own case studies which are contextually appropriate to the particular participant group. Ideally, trainers should use examples they are familiar with.

Exercise 5: What are the causes of malnutrition?

What is the learning objective?

- To apply the conceptual model for understanding the causes of malnutrition to different emergency contexts and to identify the needs and gaps in services for a population.

When should this exercise be done?

- At the end of the session

How long should the exercise take?

- About 90 minutes (30 minutes to prepare, 10 minutes per group to present and 10 minutes to wrap up). This does not include 15 minutes needed for participants to read the case study before the session.

What materials are needed?

- **Handout 5a:** Case study task; instructions.

- **Handout 5b:** Case study I: Afghanistan 2001

- **Handout 5c:** Case study II: Rwandan refugees in the Democratic Republic of the Congo/Zaire 1997

- **Handout 5d:** Discussion points for case study I

- **Handout 5e:** Discussion points for case study II

- Flip charts, coloured pens, display board and pins

What does the trainer need to prepare?

- Prepare a case study from a context familiar to the participants based on the template found in Handouts 5b and 5c.

Instructions

If possible, distribute the handout the day before for participants to read.

Step 1: Divide the participants into groups of five people (maximum).

Step 2: Give each participant a copy of Handout 5a with the questions and allocate a case study for each group to work on from Handouts 5b or 5c.

Step 3: Give the groups 30 minutes to answer the questions and prepare a presentation of their answers.

Step 4: Give each group 10 minutes for feedback in plenary.

Step 5: Handout 5d and 5e to the groups to identify any factors not identified and discuss.

Handout 5a: Case study task: Instructions

Time for completion: 30 minutes

Spend up to 15 minutes reading through the case study you have been given.

In your group, and once you have all had time to read through the case study, nominate a rapporteur to record your main points and a spokesperson to provide feedback to the wider group. Answer the questions below.

1. Discuss and identify the causes of malnutrition and state the level at which they act. Consider the three groups of underlying causes: food, care and services including the environment.

2. Construct a seasonal calendar for key events that influence nutritional status, such as the agricultural cycle or disease transmission. Comment on the seasonal patterns of these underlying causes.

3. Consider how the various factors impacting on the nutrition situation are connected and how they are influenced by one another.

4. Prepare your answers on a flip chart using the conceptual model of the causes of malnutrition and prepare to share your findings with the rest of the group.

Handout 5b: Case study I: Afghanistan 2001

Time for completion: 30 minutes

Continuing conflict between the ruling Taliban government and an alliance of factions mainly from Afghanistan's minority communities based in the north, has forced repeated displacement of people, both internally and externally, particularly to the neighbouring countries of Iran and Pakistan. The Taliban, who come from the Pashtun majority, control 90 per cent of Afghanistan. Twenty years of conflict have left the economy and infrastructure in ruins.

Afghanistan is in the grip of a third successive year of a countrywide drought which is being described as the worst for 30 years. The combined effects of the drought and ongoing conflict have resulted in the internal displacement of an estimated 600,000 people over the last year alone. Many of them have moved from rural areas to the cities of Mazar-E-Sharif and Faizabad in the north, Herat in the west and Kabul and Jalalabad in the east. At least 170,000 displaced people have crossed the border into the North West Frontier Province of Pakistan.

Drought

The countrywide drought and resulting food crisis in Afghanistan has particularly affected farmers in the northern provinces, destroying nearly all rain-fed crops and decimating livestock. The drought has been exacerbated by a very harsh and long winter. Estimates suggest that 12 million Afghans are affected by the drought of whom 3 million to 4 million severely affected. The cereal deficit has now exceeded 2.3 million tons. The next harvest is due in May to June but it is already clear that it will not meet the food needs of the people. A WFP survey conducted in 24 provinces shows that almost one third of farmers intend to plant crops on less than half of the land they normally sow, citing lack of seeds and fear of continued losses as the main reasons.

Eighty five per cent of Afghanistan's population depend on agriculture. Most land is owned by a relatively rich elite, while many poor and vulnerable groups depend on agricultural labour for an income (for example, the landless, sharecroppers and wage labourers).

The widespread displacement of people is a clear sign that many people have chosen to leave the land and move to densely populated urban centres in an attempt to find work. This is rapidly depopulating drought-affected rural areas, something that many agencies are now desperately trying to prevent. There is a lack of detailed knowledge of household food security but it would seem that many families rely on remittances from relatives who work outside Afghanistan, as well as the highly refined charitable redistribution network, called *zakat*.

From February to December 2000, an NGO called *Action Contre La Faim* (ACF) conducted seven nutritional surveys of children and their mothers in the six main cities of Afghanistan. Internally displaced persons (IDPs) in the cities were included in the sample. These surveys provided information on nutritional status and on the possible underlying causes of malnutrition related to food, health and services. They are summarized below together with other available reports.

Central Region: Kabul City

The number of displaced people in Kabul has increased from about 81,000 in August 2000, to between 100,000 and 500,000 estimated by WFP in December 2000.

ACF has a nutritional surveillance system in Kabul City based on bi-annual surveys and, since the last refugee nutrition information system (RNIS) report, has conducted nutrition surveys in February and in October 2000. The February survey estimated that 2.8 per cent of children were wasted and 0.2 per cent were severely wasted. No difference was found between the nutritional status of displaced and resident children. According to ACF, this represents a surprising improvement in nutritional status compared with the past five years, which was attributed to greater economic and political stability since the Taliban took over Kabul following their conquest of the south-eastern regions of Afghanistan in 1996 and 1997. This had allowed increased NGO activity, including the re-opening of 18 ACF supplementary feeding programmes and 17 therapeutic feeding programmes. Despite this positive result, ACF expected nutritional status to decline in the summer as a result of a seasonal increase in the incidence of diarrhoea, which coincided with an increase in admissions to feeding programmes (see Figure 1 below). By October, 8 per cent of children were wasted and 0.6 per were severely wasted. It was estimated that 22.2 per cent of wasted children were participating in feeding programmes. (ACF, Feb. 2000; ACF, Oct. 2000; WFP 15 Dec. 2000).

In February 2000 the main source of income was casual or daily labour, with female-headed households relying on handicrafts, processing dried fruits, child labour and begging as their main source of labour. Other sources of income were food assistance – including WFP cereals distributed through WFP bakeries – remittances from relatives in other regions, the sale of assets and borrowing money (ACF Feb. 2000).

The prices of wheat and bread did not rise in Kabul City between February and October 2000.

Figure 1: Rates of global (overall) wasting and severe wasting by ACF survey, Afghanistan, 2000 (with 95 per cent confidence intervals)
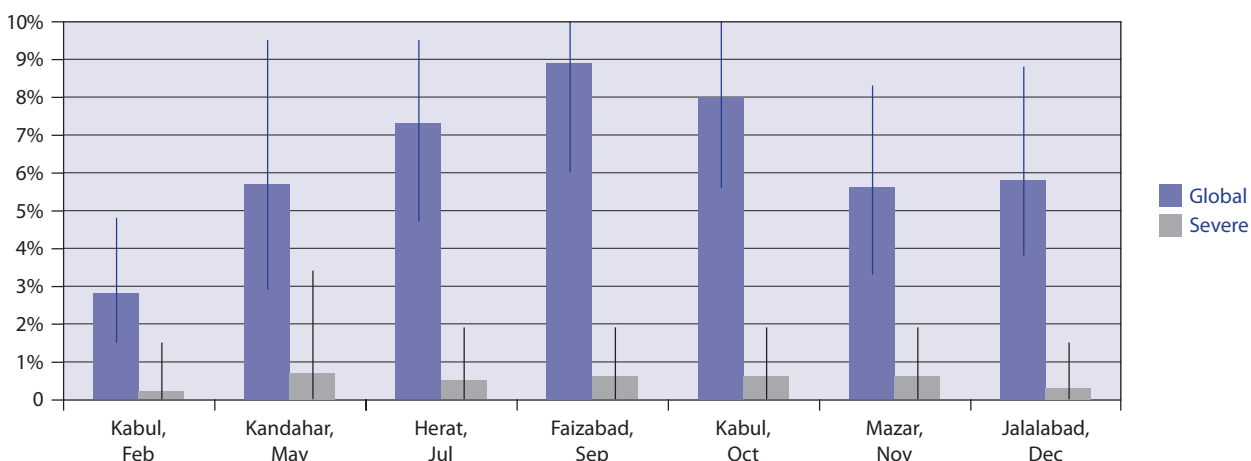
These prevalences are by far the highest reported by ACF in any nutritional surveys in Afghanistan since 1995 (ACF, 08/00).
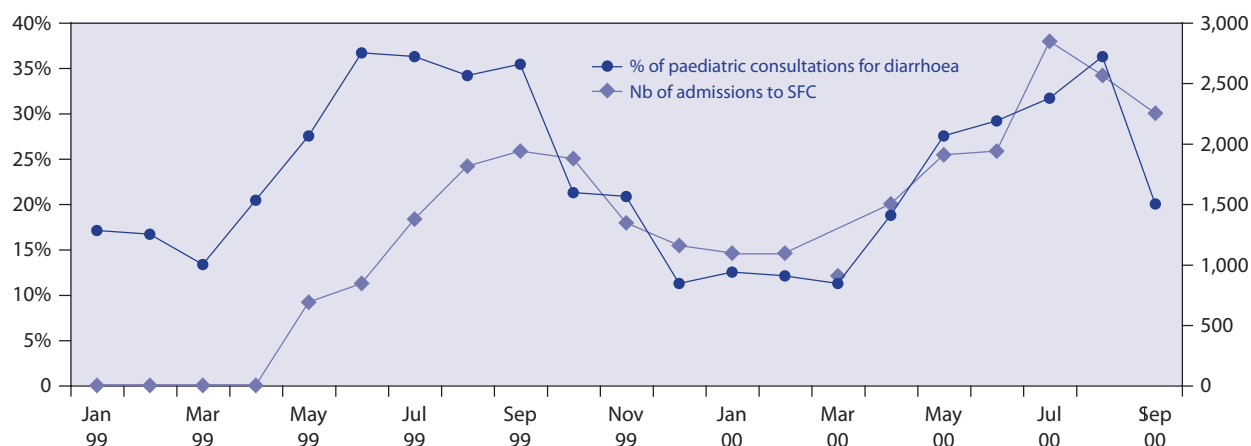
Panjshir Valley and Shamalle Plains

The Panjshir Valley is one of the strongholds of forces opposed to the Taliban. Food supply and trade are limited. The front line in the Shamalle Plains to the south combined with the tense political situation in the north and the harsh climate (very severe winters) restricts the delivery of supplies of food and other products.

A survey was conducted by ACF in August 2000 in the southern part of the valley and the northern part of the plains. Fourteen per cent of the sample was displaced people. The survey estimated that 18.2 per cent of children were wasted and 2.8 per cent severely wasted. The crude mortality rate was 2.3/10,000/day and the under-five mortality rate was 5.5/10,000/day, which is high and can be described as an emergency situation that is out of control.[1] ACF attributed this to the high seasonal incidence of diarrhoea among the population, with half of the reported deaths caused by diarrhoea (ACF, Aug. 2000). Water and sanitation services are reported to be very poor, as the river is the main source of drinking water.

---

[1]   MSF (1995) Nutrition Guidelines

The percentage of children who had been vaccinated against measles was 6.8 per cent (by card) or 22.6 per cent (by history); the low rate was partly attributed to the closeness of the front line that limited the activities of aid agencies. The very low measles vaccination coverage and the high incidence of diarrhoea were major causes for concern, and are most likely factors contributing to the high death rate. ACF has two supplementary feeding centres in the Shamalle Plain and three in the Panjshir Valley. The difficulty of access was the most likely reason for the low coverage of the selective feeding programme (only 17.3 per cent of the total wasted children attended the programmes[2]). The sample of children in Charikar District in the Shamalle Plains had a significantly worse nutritional status: 6 per cent severely wasted as compared with 2 per cent severely wasted in other surveyed areas. In this area, it was estimated that 22.2 per cent of wasted children were participating in feeding programmes.

---

[2] ACF 2000

Handout 5c: Case study II: Rwandan refugees in the Democratic Republic of the/Zaire 1997

Time for completion: 30 minutes

The population

In April 1994 over 1 million Rwandans crossed the border into Zaire. This was a mass exodus of largely Hutu civilians, caused by the military and political organisations of the former regime in Rwanda, the Interahamwe and the FAR. The assistance given in refugee camps was organized through commune leaders, who were often people that had been directly involved in the Rwandan genocide. This arrangement reinforced the commune leaders' authority over the population by directly controlling the distribution of resources. Food assistance was unequally distributed.

By November 1996 after the return of some 600,000 refugees to Rwanda, the refugees that remained in Zaire were considered by Laurent-Desire Kabila's Alliance of Democratic Forces for the Liberation of Congo (ADFL) to be a political and military threat. The military strategy of the ADFL constituted direct attacks and physical abuse of refugees. Access to resources was denied to weaken support for the former members of the Interahamwe and the FAR. Local Zairian communities were encouraged to view refugees as a threat to their physical and material security, and they used this to justify looting and other forms of exploitation.

Since late 1996 every major refugee population in Zaire had been attacked. Refugees in Lulingu had been under attack in Bukavu and later in Shabunda, some of whom dispersed into the forest around Lulingu. About 8,000 refugees settled around Lulingu. The UNHCR is under great pressure to repatriate these refugees as quickly as possible.

Local environment and food security

Refugees in Lulingu are dispersed in over 105 locations; some are staying alone in villages, some with local families and others deep in the forest. The length of time that refugees have stayed around Lulingu varies but some have been there for five months.

Of the refugees staying with families, some work on the family's farm and others share the family's food. Host families and refugees prepare and eat food together. Refugees living alone have to find food by doing farm work or other manual labour. A day's work will earn 20,000 to 25,000 zaires, which buys one ùcupû of rice and one ùcupû of beans, but considerably more cassava.

In some locations, groups of refugees are staying together in local churches or schools. These refugees face the worst conditions. They are too malnourished and sick to move, and are entirely dependent on charity. Four deaths a day were reported among a group of around only 400 people in Nyambembe. Most of these refugees have no possessions.

There appear to be differences between groups of refugees staying in different areas in the forests. Some are young men who are strong and healthy and are working in local mines. Some groups live three- to four-days walk into the forest, whereas others are only two to three hours from the edge. They come into villages during the day to find work and food, but disperse into the forest at night for fear of attack. There are people in some groups that are reported to be too weak to move into one of the population centres or are prevented by their ùleadersû from doing so.

In Lulingu the existing roads were initially inaccessible by car and most of the refugees could only be reached on foot. There is no road to Lulingu from elsewhere in Zaire. Some cars were airlifted to Lulingu for United Nations and NGO staff use. There is only one truck, which is broken down most of the time.

Leadership structures

Among the refugees the unequal power relationships that existed in the camps between 1994 and 1996 were magnified, as the proportion of former FAR and Interahamwe members was higher. Differences were apparent within each small refugee group in Lilingu. Almost every group contained one or more physically strong and politically powerful 'representative', who were clearly ex-FAR and exerted control over the rest of the group. It was in their interest to keep refugees where they were, as they could not return to Rwanda for fear of arrest and they would not allow people to leave the group.

GREAT LAKES -- Complex Emergency
Situation Report #39
June 27, 1997

Nutritional status and mortality

No nutritional surveys were done, but a large number of severely malnourished adults, e.g., with oedema, could be observed. Death rates of 22.5/10,000/day have been reported among Rwandan refugees in similar situations in the region. Large proportions of the population were too weak even to move and were lying down in churches and schools in population centres.

Health environment

Water is obtained from the many streams in the area. Sanitation is mostly not a problem, except for the people staying in local churches. The most common diseases are malaria and diarrhoea. There are health posts in most population centres, but the supply of essential drugs is limited. Vaccination coverage is unknown. There is a hospital in Lulingu 'town' with qualified health staff.

Food assistance

The standard ration used by WFP throughout the Great Lakes region is:

WFP/UNHCR ration (g/person/day)

Maize meal	350
Peas	120
CSB	50
Oil	20
Salt	5
Kcals	1,990

In this situation the refugees were widely dispersed and highly vulnerable as a result of their poor health and nutritional status, although some were obviously stronger and fitter than others, but also because of their political status and the threat of attack from the local population.

Handout 5d: Discussion points for case study I

Case study I: Afghanistan 2001

Outcomes

- The prevalence of wasting in Kabul increased from 2.8 per cent in February to 8 per cent in October. The prevalence outside Kabul is the highest since 1995, especially in the Panjsheer valley where it is 18 per cent.

Immediate causes

- The incidence of diarrhoea increased during the summer months

Underlying causes

Food insecurity

- Rain-fed agriculture

- Livestock need water

- Low crop production expected; planting one third less than previous year

- Price of bread stable, but a reliance on food aid

Care

- Reliance on remittances from abroad

- Displacement and family separation due to conflict

Service, health, water and sanitation

- Seasonal increase in incidence of diarrhoea

- Poor quality drinking water from the river in the Panjsheer

- Measles vaccination coverage very low especially in areas affected by the ongoing conflict.

Basic causes

- Continuing conflict and internal displacement

- Drought

- Rural poverty – poor people are unable to own land so rely on low wages as farm labourers.

Handout 5e: Discussion point for case study II

Case study II: Rwandan refugees in the Democratic Republic of the Congo (DRC) 1997.

Immediate causes

- Refugees in a very weak state; high mortality rates recorded; no nutritional data but evidence of oedema

- Adults too weak to move

Underlying causes

Food insecurity

◦ Refugees are destitute, relying on food aid; some low waged daily labour available.

Care

◦ Commune leaders involved in genocide are now in charge of aid distribution.

◦ Refugees being attacked by local DRC population due to fear.

◦ Refugees waiting for repatriation by UNHCR.

Health and hygiene environment

◦ Drinking river water.

◦ Hygiene basic, some overcrowding.

◦ Malaria and diarrhea.

◦ Limited health care, limited staff and medical supplies.

Basic causes

◦ Continuing conflict and displacement of 1 million people.

◦ Political status a threat to security.

6. Field-based exercises

This section outlines an exercise that can be carried out as part of a field visit. Field visits require a lot of preparation. An organisation that is actively involved in programming or nutrition surveillance has to be identified to 'host' the visit. This could be a government agency, an international NGO or a United Nations agency. The agency needs to identify an area that can be easily and safely visited by participants. Permission has to be sought from all the relevant authorities and care taken not to disrupt or take time away from programming activities. Despite these caveats, field based learning is probably the best way of providing information that participants will remember.

Exercise 6: Causal Analysis

What are the learning objectives?

- To understand the different factors and their level of causality that impact on the nutrition situation of a population.

- To understand how the causes of malnutrition are interrelated.

- To understand how seasonal changes may influence the nutrition situation.

- To identify and prioritise the needs and gaps in services of the population.

When should this exercise be done?

- As part of an in-depth course and after all teaching sessions have been completed

How long should the exercise take?

- 10-18 hours (excluding travel) over a three-day period

What materials are needed?

- **Handout 6a:** Causal analysis field exercise: Instructions

- Sphere Handbook, Minimum standards in food security and nutrition chapter, or section on assessments.

What does the trainer need to prepare?

- Prepare the briefing document (this will include information concerning the area where the causal analysis will take place) and the questions to be completed following the field exercise.

- Obtain relevant data including previous assessments from the area where the field exercise will take place.

- The trainer will need to identify a suitable organisation and area for the field visit and organise all logistics (transport, fuel, meals, etc.) for the visit. It is essential that the trainer visits the field site in advance to identify potential problems and ensure there is permission from all the relevant authorities to conduct the analysis.

Exercise 6: Causal Analysis (continued)

Instructions

Step 1: Give each participant a copy of Handout 6a and the briefing paper.

Step 2: On the morning of day 1, groups read Handout 6a and the briefing paper and have opportunities to ask questions.

Step 3: The available relevant data on the area where the field exercise will be conducted is shared among the participants and this information is analysed. This work can be done in groups or individually. All the findings are shared among the participants and summarised by a designated participant.

Step 4: With the trainer, the group identify what data is required, who may have this information and the appropriate method of collecting this information.

Step 5: The participants are divided into groups and with the trainer develop appropriate questions for interviews, focus group discussions or questionnaires.

Step 6: The participants should familiarise themselves with the Sphere standards for food security and nutrition assessments and the associated actions and indicators.

Step 7: Divide participants into three groups: divide the list of key informants among the three groups according to geographical location of key informants and related information to collect and provide each group with the relevant list of questions/ outlines for focus group discussions/questionnaires.

Step 8: Participants travel to location near the project site to stay overnight and possibly take a look at the area where the causal analysis will take place.

Step 9: Participants spend all day in the field conducting interviews and collecting information.

Step 10: Participants travel back home.

Step 11: Participants reconvene in class and prepare the presentation of their findings.

Discussion points for feedback in plenary

➡ Triangulate the information from all the groups. Are there any contradictions? Who needs to be asked what to sort out the contradictions? Are there any gaps in the information? Who needs to be asked what to fill the gaps?

➡ Discuss any difficulties in obtaining the information from reports, group discussions and key informants.

➡ If the exercise was to be repeated what would you do differently?

Handout 6a: Causal analysis field exercise: Instructions

Time for completion: 10-18 hours over 3 days

Participants should first read the prepared briefing paper about the area where the field exercise will take place.

With the assistance from the trainer the participants will;

a) Analyse available data including previous assessments from the area to be visited.

b) Identify what data is required, who may have this information and the appropriate method of collecting this information from the various key informants.

c) Divide into groups to develop appropriate questions for interviews, an outline for focus group discussions or questionnaires for the various key informants.

The participants will be divided into three groups. The list of key informants will be divided among the three groups according to geographical location of key informants and related information to collect. The different groups must familiarise themselves with the information they must collect, who they will collect it from and how they will collect the information.

The groups will travel to the site where the information will be gathered.

It is advisable that each group nominates an individual to ask questions in each of the interview sessions and at least two other individuals in the group to take notes of the answers. Another individual could take notes on dynamics of the interview, e.g. if it was dominated by one individual or if observers may have inhibited responses, etc.

Each group will then return home and prepare a presentation to the plenary group on day three. Once all the information has been presented a more complete picture of the different factors impacting on nutrition should have developed. The group should then discuss and answer the following:

•   What are the different factors and their level of causality that impact on the nutrition situation of the population?

•   Explain how the causes of malnutrition are interrelated.

•   Explain how seasonal changes may influence the nutrition situation.

•   Identify and prioritise the needs and gaps in services of the population.