# Module 4
## Food behaviour and nutrition

**Module code:** PHFS04N

<table>
<thead>
<tr>
<th>Role</th>
<th>Name(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project leader</td>
<td>A Barlow-Zambodla</td>
</tr>
<tr>
<td>Programme coordinator &amp; Curriculum coordinator</td>
<td>FM Ferreira</td>
</tr>
<tr>
<td>First authors</td>
<td>Food and Nutrition team</td>
</tr>
<tr>
<td>Critical reader</td>
<td>Nutritionist</td>
</tr>
<tr>
<td>Educational consultants</td>
<td>C Randell</td>
</tr>
<tr>
<td></td>
<td>E Whitlock</td>
</tr>
<tr>
<td>Language editor</td>
<td>Not done yet</td>
</tr>
<tr>
<td>Layout artist</td>
<td>Not done yet</td>
</tr>
</tbody>
</table>

University of South Africa 2010
This draft study guide, **PHFS04N for Food Behaviour and Nutrition**, was reworked to incorporate some lessons learned from the pilot of the Programme for Household Food Security in agreement between the South African Institute Distance Education and the University of South Africa.

**This work is licensed under the Creative Commons Attribution – Share Alike License.**

This means you are free:

- **to Share** — to copy, distribute and transmit the work
- **to Remix** — to adapt the work

**Under the following conditions:**

**Attribution** — You must attribute the work in the manner specified by the author or licensor (but not in any way that suggests that they endorse you or your use of the work).

**Share Alike** — If you alter, transform, or build upon this work, you may distribute the resulting work only under the same or similar license to this one.

This study guide is a draft for a pilot run of the Programme for Household Food Security in agreement with SAIDE and UNISA.
This project for training household food security facilitators was initiated by the South African Institute for Distance Education (Saide) using funding from the WK Kellogg Foundation. The funding was used to help facilitate the design, development and implementation of a programme aimed at further upgrading the skills of rural and peri-urban community development workers and volunteers. Saide partnered with the College of Agriculture and Environmental Sciences of the University of South Africa to develop a 6 module short learning programme worth 72 credits.

This Study Guide for the Module PHFS04N Food Behaviour and Nutrition is the fourth of the six modules initially piloted with groups of volunteers linked to non-governmental organizations (NGOs) and community development workers (CDWs) working for the department of local government in the Eastern Cape.

The Eastern Cape NGO Coalition (ECNGOC) is an umbrella non-profit organization for over 400 non-governmental, community and faith based organizations (NGO’s, CBO’s and FBOs) in the Eastern Cape region. The ECNGOC supported the intervention through advocacy and helping to link organizations with the project thus enabling the recruitment of practicing volunteers and community development workers who needed training in facilitating Household Food Security. During 2009 organizations such as Student Partnership Worldwide (SPW), Transkei Land Services Organization (TRALSO) as well the Directorate for Social Responsibility in the Anglican Diocese of Grahamstown had students on the pilot programme. Other organizations as well as the provincial department of Local Government (in the Eastern Cape) and the Mbashe Local Municipality came on board during 2010.

The project is managed by a Project leader from Saide, Dr Alice Barlow-Zambodla, and has a designated Programme Coordinator, Mrs Fransa M Ferreira from the CAES, Unisa. Six writing teams participated in the initial curriculum development and design process together with other stakeholders. Their names are listed on the front page of each Study Guide.

The Programme in Household Food Security is an approved UNISA Short Learning Programme that serves to promote community engagement with UNISA by linking curriculum and tuition, research and community service with the delivery of higher education. This is in line with the UNISA vision: The African University in service of humanity.
Main references used
We acknowledge the use of the following publications in the development of this study guide.

Other sources


Carter, I. 2001 Building the capacity of local groups: A PILLARS Guide. Tearfund, Teddington, UK


UNIT 1: Challenges for food and nutrition security

Introduction.................................................................................................................. 1
Specific and learning outcomes..................................................................................... 2
Key concepts.................................................................................................................. 3

1.1 Protecting household food security, nutrition and livelihoods ...... 4
   1.1.1 The building blocks for household food security, nutrition and livelihoods................................................................. 5
   1.1.2 The right to food .................................................................................................................................................. 8
   1.1.3 Linking food security and nutrition to livelihoods................................. 9

1.2 Threats to food security and nutritional health of households ................................................................. 13
   1.2.1 Threats to food security impact negatively on dietary intake ..........14
   1.2.2 Threats to adequate maternal and child care feeding practices .......16
   1.2.3 Threats to adequate health, water, sanitation and shelter protection ........................................................................... 19
   1.2.4 Interaction between inadequate dietary intake and infection......... 19

1.3 The food nutrients needed for adequate food intake.........................20
   1.3.1 Carbohydrates and their importance............................................. 23
   1.3.2 Proteins and their importance...................................................... 25
   1.3.3 Fats and their importance............................................................... 25
   1.3.4 Vitamins and their importance..................................................... 27
UNIT 3: Food Behaviour change for diet diversity.................101

Introduction........................................................................................................101
Learning outcomes..................................................................................................102
Key concepts.........................................................................................................103

3.1 Why do we eat what we eat?.................................................................104
  3.1.1 What factors affect what people eat?.............................................106
  3.1.2 Natural and physical environment .............................................109
  3.1.3 Socio-cultural factors.................................................................115
  3.1.4 Individual factors.......................................................................116

3.2 Eating a variety of food – Food based dietary guidelines..........122
  3.2.1 Why divide food into food groups?..............................................122
  3.2.2 The Food-based Dietary Guidelines for a healthy diet ..............126

3.3 What is dietary diversity.................................................................129
  3.3.1 The food groups used for planning and assessing diet diversity ......129
  3.3.2 Dietary diversity and the nutritional quality of the diet ..............150

3.4 Planning meals using a variety of foods........................................157
  3.4.1 Number of meals......................................................................157
  3.4.2 Meal Composition......................................................................158
    3.4.3 Food Combinations..................................................................160
    3.4.4 Food preparation and food practices.....................................163

3.5 How people develop or change food behaviours......................166
Concluding remarks........................................................................................................168

TAKE ACTION
   4.1 How to approach portfolio activities .................................................................169
   4.2 The portfolio activities for module 4 .................................................................171
Portfolio activity 4.1 Understanding the terms and concepts relating to malnutrition..................................................................................................................174
Portfolio activity 4.2 Developing a Malnutrition Problem Tree ..................................179
Portfolio activity 4.3 Assessing diet diversity and food variety ...............................185
Portfolio activity 4.4 Household food security and nutrition seasonal activity calendar......................................................................................................................191
Portfolio activity 4.5 Household food security action plan........................................196
Introduction to the module

Congratulations on choosing to take a leadership role by engaging in community development, as only a few feel called to facilitate the improvement of lives in their community. Credo Mutwa, an internationally acclaimed cultural historian, spiritual leader and author, uses the following Zulu instruction to learner healers. It has particular relevance for community development facilitators.

“Learn from the hornbill, the bird of unconquerable hope – no matter how bad the drought, no matter how desperate the famine, the hornbill always holds its head high, its beak pointed toward a better tomorrow. Never be like a crow whose ugly beak points earthwards in

This inspiring thought encourages you to remain optimistic when carrying out your important work with households in rural and urban communities across the country.

We commend you on your decision to improve your knowledge, skills and attitudes in the important field of Household Food Security. As you work through this module you will gain a much better understanding of the concepts that are relevant to the field of food security. The key words and concepts in each unit are used throughout the programme. The module has been designed to assist you to help support people in your community to find their own solutions and gain access to the range of services provided by government. As a household food security facilitator you are in a unique position: you can communicate to households how government services work and give feedback to government structures on your community’s needs and resources.

The central theme in this fourth module is about working together with households to assess their own knowledge and learn about basic nutrition principles and food based guidelines. You will help them assess their own sanitary hygiene, dietary habits and practices (both cultural and behavioural) in order to later determine how they can improve their food and nutritional security. Before you can take action you have to know what challenges
households face in relation to food and nutrition security as well as what their nutritional needs are during different phases of their lifecycle. You will also need to learn about the various care practices required to ensure that household caregivers are able to provide nutritious meals. The most important aspect of your role as facilitator is to assist the households to learn about and gather accurate information about their food security and nutrition situation, help them to analyze the information, and support them in their efforts to take action to achieve sustainable food and nutrition security.

**Purpose of the module**

This module requires you to learn to facilitate the use of acceptable food and nutrition behavior practices that lead to improved food and nutrition security.

In Module 4 you are revising the important concepts from Module 1 such as food security, food insecurity, nutrition security and livelihood security. We add nutrition for the vulnerable, food behaviour, food choices, dietary patterns and diet diversity, as well as the role played by different stakeholders involved in food security. Together with the households you will gain knowledge on these issues and help the households themselves to gather information about their nutrition related problems, vulnerability, risks and malnutrition. You will together with them analyse the causes of these problems on different levels, from the macro to the micro level.

The most important set of skills you will learn is how to work with households as a facilitator. You will walk alongside them on this journey, listening and learning from them. You will then help them to find their own solutions to problems and to take action. Another important skill you will acquire is how to report on the community situation regarding their situations with regards to hunger, lack of sufficient food, malnutrition, food vulnerability and related issues and request assistance for intervention from the relevant authorities.

**How Module 4 fits into the programme**

Each module is an important part of the Household Food Security Programme. The modules for the programme are:

<table>
<thead>
<tr>
<th>Module</th>
<th>Code</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>PHFS01K</td>
<td>Introduction to household food security</td>
</tr>
<tr>
<td>2</td>
<td>PHFS02L</td>
<td>Introduction to methods of working with households</td>
</tr>
<tr>
<td>3</td>
<td>PHFS03M</td>
<td>Sustainable natural resources use</td>
</tr>
<tr>
<td>4</td>
<td>PHFS04N</td>
<td>Food behaviour and nutrition</td>
</tr>
<tr>
<td>5</td>
<td>PHFS05P</td>
<td>Optimising household food production</td>
</tr>
<tr>
<td>6</td>
<td>PHFS06Q</td>
<td>Food resources management</td>
</tr>
</tbody>
</table>

The modules are linked and what you learn in one module will also help you in another.
Programme map

The diagram below is a *programme map* that provides you with an overall picture of the programme. It shows you the main purpose of the programme and the focus of each of the six modules.

The first two modules are part of your orientation to the field of food security and the methods you will use when working with households.

Modules 3 – 6 require you to work with the households in each of four key areas of household food security.

---

**Programme in household food security**

- **Orientation for HFS facilitators to concepts and tools**
- **Module 1**: Introduction to household food security
- **Module 2**: Introduction to methods of working with households
- **Module 3**: Sustainable natural resources use
- **Module 4**: Food behaviour and nutrition
- **Module 5**: Optimising household food production
- **Module 6**: Food resources management

The programme equips students with relevant knowledge and skills to strengthen the capacity of households in rural and urban communities to respond proactively to meet their food, nutrition and livelihood needs. By participation in achievable projects people in rural and urban areas are mobilised to take actions to break the cycle of poverty.
Module 4 map
The module map below gives you an overall picture of Module 4.

Module 4 learning outcomes
The table below shows the topics of the three units in Module 4 and gives you a good idea of what you are expected to know and do. The assessment in this module is closely linked to the outcomes. It includes two assignments, workbook activities and portfolio activities. You will find detailed information about the assessment activities in the General Tutorial Letter.

<table>
<thead>
<tr>
<th>Unit</th>
<th>Learning Outcomes</th>
<th>Assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Challenges for food and nutrition security</td>
<td>Determine household nutrition knowledge, food habits, cultural and behavioural practices.</td>
<td>Assignment 1 (10%)</td>
</tr>
<tr>
<td>2. Nutrition of the vulnerable in the nutrition lifecycle</td>
<td>Together with the household, assess member household practices, nutritional care, health and sanitation practices, environment and hygiene. Encourage the use of local health and social services provided within a team.</td>
<td>Assignment 2 (20%)</td>
</tr>
</tbody>
</table>
Food behaviour and diet diversity

Apply food-based dietary guidelines based on basic nutrition principles to assist households to improve diet quality and prevent nutrition deficiency.

Optimize the use of available food for meal planning and preparation and the

<table>
<thead>
<tr>
<th>Portfolio activities (60%)</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Workbook (10%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Selected activities from all units</td>
</tr>
</tbody>
</table>

What is in the units?
All three units are linked and provide a good introduction to the field of food and nutrition security. The emphasis is on helping you to understand food security concepts and see them within an overall food security framework. When you have completed Module 4 you should be able to link vulnerability of households to food security on a micro level, and on a macro level and identify stakeholders for support and services to households.

Unit 1 – Challenges for food and nutrition security
Unit 1 starts off with an explanation of what is meant by food security and food insecurity. You are introduced to the concepts of vulnerability, risks and shocks in the context of food security, namely food access, food availability, food utilization and food stability. These dimensions are an important part of the food security model working with vulnerable and poor households in adverse conditions. This model provides a comprehensive picture of food security and shows how different threats challenge household food and nutrition security on different levels.

Unit 2 – Nutrition of the vulnerable in the nutrition lifecycle
Unit 2 examines how food security is linked to nutrition of people in different stages of the life cycle and the income resources needed for living. Concepts such as malnutrition, hunger, vulnerability and poverty are explained in regard to child nutrition, school nutrition, the elderly and people living with HIV AIDS.

Unit 3 – Food behavior and diet diversity
Unit 3 looks at food choices, the diet and changing the dietary patterns that constitute the food behavior of people and the factors having an influence on this food behavior.

The development of the South African Food Based Dietary Guidelines and their use for buying, growing and planning healthy foods for meals are discussed as it highlights "eating a variety of Food". The measurement of dietary diversity scoring and its use are explained. The diverse food groups are linked to assessing for an adequate nutritional diet. The accessibility of the foods is referred to in the context of rediscovering African Foods and keeping a household garden. Different activities that can be used to help change food behaviour are given as tasks to help in communicating nutritional health messages.

**Portfolio activities**
The section at the back of Module 4 called *Take Action* gives you detailed information about the portfolio activities for this module. Start your Module 4 learning journey by identifying the portfolio activities as this helps you to plan them as linked and not separate activities.

**The learning and teaching approaches in this programme**
There are three main learning approaches and methods used in this programme these are: the “Triple A” Approach, individual and group learning from learning resources and facilitated group learning.

**The “Triple A” Approach**
What we do flows from the plans we make. These plans are based on information we have at the time and how we understand that information. As we start implementing our plans we learn more and can improve our plans and actions. In all the modules in this programme we use a reflective approach known as the “Triple A” Approach, that is illustrated below.

**Figure 1.2 The “Triple A” Approach (Adapted from FAO, 2005)**

The “Triple A” is a well-known community development method in which ongoing planning
and re-planning happens. We gather information (assess), think about it and use it to come up with plans (analyze). We then implement those plans (act), as we continue gathering new information. The “Triple A” Approach engages you in an ongoing cyclical process of assessing, analyzing and acting based on the new information which you have learnt.

How is the “Triple A” Approach implemented in this module?

• Unit 1 provides information on the key concepts of the vulnerability, risks and food insecurity threats to poor households using the food security systems model (assess).
• Unit 2 provides insights into the importance of household food security and nutritional care and how they link to different life cycle stages of the household. (analyze)
• Unit 3 focuses food choices and food behaviour for meal planning using the Food Based Dietary Guidelines. It also looks at how to measure diet diversity for planning diverse diets and also measuring diet diversity in interventions to change food behavior. (act)

In the portfolio activities that are linked to the three units you apply knowledge and skills that enable you to work with households to improve their food security situation.

Learning from learning resources
For most students learning from resources such as study guides may be a new experience. The study guides have been designed specifically to guide you in your learning journey. You can call your study guides your ‘portable teachers’ as you can take them with you wherever you go and learn from them when it suits you. Get used to engaging with the study guides daily. If you experience difficulties understanding something then, ask questions at the next group session. Form a study group with interested other students in the programme that live close to you. Research has shown that small study groups can be particularly helpful in the learning process and the support of others can keep you motivated to achieve success.

Learning in facilitated group sessions
Trained facilitators have been appointed to run regular structured group sessions. The main purpose of the group sessions is to give you an opportunity to explore food security issues in some depth, to clarify issues that you are unsure of, to reflect on your actions with the households and the contextual challenges, and to give you opportunities to practice practical skills. Come to the group sessions well prepared. Ask questions, raise issues, and contribute to the discussions.

What is in your study pack?
Check your study pack for this module. It should contain the following:
This study guide
A module workbook
Portfolio worksheets
A tutorial letter 101(TUT 101) with your assignments and information about when you should submit them

During the year you will receive additional tutorial letters that give you general feedback on the assignments submitted.

Finding your way in the study guide
Please note that extracts from articles and important food security reports are shown in shaded blocks

How to work with the materials and assessment tasks

Here is a suggestion for working through the programme:
1. Work through each unit in sequence. For each unit do the following:
   a. Start by making sure you fully understand the different concepts associated with the unit.
   b. Complete the activities for the unit in both your study guide and workbook.
   c. Complete the portfolio task linked to each unit. For example when you complete unit 1 of this module you should then complete Portfolio task 1.1: Understanding the terms and concepts of malnutrition.
2. Complete the assignments. You will find it easy to do them after having had some practical experience doing the portfolio tasks and engaging with the content in your study guide.