

Agricultural Water Use for Homestead Gardening Systems

Volume 2: Resource Material for Facilitators and Food Gardeners

Part 1: Introduction, Chapters 1-3

Report to the

Water Research Commission

by

CM Stimie, E Kruger, M de Lange & CT Crosby





WRC Report No. TT 431/1/09 January 2010

Obtainable from

Water Research Commission Private Bag X03 Gezina 0031

The publication of this report emanates from a project entitled: "Participatory Development of Training Material for Agricultural Water Use in Homestead Farming Systems for Improved Livelihoods" (WRC Project number K5/1575/4).

This report forms part of a series of reports. The other report is entitled "Agricultural Water Use in Homestead Gardening Systems - Main Report" (WRC report no. TT 430/09).

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ISBN 978-1-77005-918-4 Set No. 978-1-77005-919-1

Printed in the Republic of South Africa

Acknowledgements

WRC Research Project Reference Group:

Sanewe, AJ (Dr) Chairman (Water Research Commission)

Backeberg, GR (Dr) Water Research Commission

Crosby, CT (Mr)

Private Consultant

Zakhe Training Institute

Ferreira, F (Ms) UNISA

Gabriel, MJM (Ms) DoA: WUID

Van Averbeke, W (Prof)

Tshwane University of Technology

Williams, JHL (Mr) Independent Consultant

Sally, H (Dr) International Water Management Institute

Moabelo, KE (Mr) Tompi Seleka Agricultural College

Mariga, IK (Prof) University of Limpopo

Monde, N (Dr) Human Sciences Research Council

Engelbrecht, J (Mr) Agriseta

WRC Research Project Team:

CM Stimie (Mr) Project Leader – Rural Integrated Engineering
M de Lange (Ms) Coordinator – Socio-Technical Interfacing
E Kruger (Ms) Principal Researcher – Mahlatini Organics

M Botha (Mr) Layout and Sketches – Tribal Zone

W van Averbeke (Prof) Urban agriculture – Tshwane University of

Technology

J van Heerden (Mr) Engineering – Rural Integrated Engineering

CT Crosby (Mr) Advisor – Private consultant

The dedication and passion of Erna Kruger, Marna de Lange and Charles Crosby for this project and its outcomes are acknowledged with gratitude.

Special recognition and acknowledgements to:

 LIRAPA – Ministry of Agriculture and Food Security Nutrition and Home Economics, Horticulture Division, PO Box 14915, Maseru 100, Lesotho.

Department of Crop Services, Horticulture Division, PO Box 7260, Maseru 100, Lesotho

MaTshepo Kumbane and the Water for Food Movement

Collaborated with:

- The Smallholder Systems Innovation (SSI) Programme from UKZN in Potshini,
- The Farmer Support Group
- School of Bio-resource Engineering, UKZN
- Specific thanks to Michael Malinga and Monique Salomon (FSG), Prof Graham Jewitt, Victor Kongo, Jody Sturdy (SSI).
- DWAF pilot programme for Homestead Rainwater Harvesting
- World Vision; Okahlamba Area Development Programme specific thanks to Jamie Wright and Monica Holtz
- ARC (ISCW); Eco-Technologies Programme in Hlabisa specific thanks to Hendrik Smith and the local DAEA extension office
- Pegasus, Mpumalanga
- LIMA Rural Development Foundation Eastern Cape
- AWARD Limpopo
- Bush Resources Bushbuckridge
- Border Rural Committee Eastern Cape.
- Centre for Adult Education (UKZN) specific thanks to Zamo Hlela and Kathy Arbuckle.
- Umbumbulu thanks to the Ezemvelo Farmers Association and assistance by Dr Albert Modi, Crop Science Department, UKZN

Agricultural Water Use for Homestead Gardening Systems

Resource Material for Facilitators and Food Gardeners

Introduction to the Resource Material

Chapters: Resource Material

Introduction to the Learning Material (TT 431/1/09)

Chapter 1	Rural realities and homestead food gardening options (TT 431/2/09)
Chapter 2	 Facilitation of homestead food gardening (TT 431/2/09) Handouts: Chapter 2 – Homestead Food Gardener's Resource Packs
Chapter 3	 Living and eating well (TT 431/2/09) Handouts: Chapter 3 – Homestead Food Gardener's Resource Packs
Chapter 4	 Diversifying production in homestead food gardening (π 431/3/09) Handouts: Chapter 4 – Homestead Food Gardener's Resource Packs
Chapter 5	- Garden and homestead water management for food gardening (TT 431/3/09) - Handouts: Chapter 5 – Homestead Food Gardener's Resource Packs
Chapter 6	 Soil fertility management: Optimising the productivity of soil and water (TT 431/4/09) Handouts: Chapter 6 – Homestead Food Gardener's Resource Packs
Chapter 7	Income opportunities from homestead food gardening (TT 431/4/09)

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The use of icons in the material

You will find that several different icons are used throughout the Learning Material. These icons should assist you with navigation through the Chapter and orientation within the material. This is what these icons mean:



Facilitation tools

Processes that you can use in workshop situations, to support your work in the field.



Research /Case study

The results of research or case studies that illustrate the ideas presented.



Looking at research, facts and figures to help contextualise things.



Activity

This indicates an exercise that you should do – either on your own (individual) or in a group.



Copy and handouts

These sections can be copied and used as handouts to learners / participants.

1. Introduction

Rationale for this work

In recent years, there has been a growing recognition among development practitioners in South Africa of the central importance of household food security. Particularly, greater appreciation developed of the impact of food insecurity and malnutrition – especially among preschoolers – on the individual, the family, and the wider economy. Focus started to shift to the potential role of the homestead yard in food production for improved family diets, and government started to realise that lack of water had prevented many people from growing crops in their backyards.

This Resource Material for Facilitators and Food Gardeners on Agricultural Water Management in Homestead Farming Systems was developed with funding by the Water Research Commission (WRC) of South Africa, and is the output of a research project entitled: "Participatory development of training material for agricultural water use in homestead farming systems for improved livelihoods".

The process of 'participatory development' of the material entailed two main aspects:

- Drawing widely on the material and know-how of practitioners in the fields of household food security, homestead farming, farmer training, rainwater harvesting and homestead water management, thereby achieving a collation of existing expertise and material; and
- Field testing and refinement of the collated material with food secure and insecure households in rural villages.

The material built particularly on existing material of the Food and Agriculture Organisation of the United Nations (FAO, 1997), the LIRAPA manual (Kruger, 2007) and various South African resources. Through this WRC research project, it has been integrated with the practical experience of practitioners and then field tested – in its integrated form – for local circumstances.

The following aspects of the resource materials can be viewed as innovations or useful adaptations of existing practices:

Well-known Ma Tshepo Khumbane devoted forty working years to household food security facilitation, and had countless successes in mobilising households for food security. One of the more difficult challenges for facilitators who wanted to learn from her, is to use her 'present situation analysis' in the Mind Mobilisation This resource material is aimed at facilitators and tutors-of-facilitators in household food security, homestead farming and rainwater harvesting.

It also contains handout materials for food gardeners.

process, because this can be very traumatic for participants, and thus for facilitators. (See Chapter 2 for more details). It is however, a very effective mobilisation tool... A breakthrough came when the research team developed the Nutrition Workshop as an alternative mobilisation tool to be used within the

- overall Mind Mobilisation process. The Nutrition Workshop, measured effects of its use, and later refinements of the process are described in Chapter 3.
- ❖ This resource material draws, practically, on ways to understand and deal with the psychological aspects that typically affect food insecure households. When these are overcome, the journey to food security and wellbeing becomes much more achievable.
- ❖ The use of learning groups has been advocated and used with varying degrees of success in agricultural development in recent years. Through this research, and again, practical experience of a wide range of people, it was possible to better define and refine the proper role for a 'Garden Learning Group' (or any other name preferred by the particular group of households) to enable households to support each other morally, while avoiding conflicts which most often stem from some form of induced economic interdependence among group members.
- ❖ In knowledge sharing with and among households, the successful use of household experimentation as a learning process is well worth mentioning, and discussed in more detail in Chapter 2.
- ❖ On the technical side, a significant range of technologies were selected and field-tested, based on their affordability for cash-strapped households, and on how they build up rather than break down the environment. Of particular interest is the practical integration of a range of rainwater harvesting techniques with organic plant production practices.

This Resource Material complements the Household Food Security Facilitators' short learning course at UNISA, as well as further courses planned by UNISA's Human Ecology Department that will draw on this material.

The University of KwaZulu-Natal was a valuable partner in the development of this material and is presenting an elective on household water management as part of its CEPD (Certificate in Education; Participatory Development) programme, within the School of Education.

The Department of Agriculture requested the project team to develop specific training courses as part of the implementation of the Agricultural Education and Training, drawing on this resource material.

How this resource material responds to rural realities

In the decade or so after the 1994 elections, agricultural extension and assistance was targeted at group projects, rather than at individual or household initiatives. This approach was adopted to enable government to reach more people simultaneously, but has meant that assistance was not targeted at households who wanted to develop independently, rather than being part of a group project (communal garden, chicken project, irrigation scheme, land reform project, etc.)

Several shifts in thinking have since taken place, including the following:

An increased realisation of the reality of malnutrition and food insecurity in South African households, exacerbated by the rapid food and fuel price increases in 2007/08;

- Better understanding of the challenges inherent in group-based projects – especially the typical conflicts around the handling of group finances;
- An appreciation of the potential for food production in the homestead yards – a neglected tradition – and the need for water to enable production at the homesteads; and
- Awareness of the potential of a range of water access options, over and above the conventional bulk supply and piped distribution systems; namely 'multiple-use-systems (MUS)', and especially rainwater harvesting in its various forms.

The strategy of homestead production was voiced by poor people during the World Summit on Sustainable Development (WSSD) hosted in Johannesburg in 2002. Food insecure women from various provinces gathered at the World Summit and declared 'War on Hunger'. Calling themselves the Water for Food Movement, they vowed to do everything they could to achieve Millennium Development Goal (MDG) 1a, namely: "to reduce by half the number of people living with hunger, by 2015."

To diplomats, ministers, and officials at the World Summit, they said: "We are the ones going hungry, not you. Therefore we are the ones who must beat hunger and achieve MDG1. Please don't block us. If you can, walk next to us, but not in front of us, dictating to us. We know our situation better than you do; this is our 'war'."

These women then returned home and showed practically at their homes what they meant, by harvesting rainwater and digging underground rainwater tanks (or 'dams') to support their homestead production. Stemming from their demonstrated success, the then Department of Water Affairs and Forestry approved a subsidy to introduce rural households across the country to this type of low-cost, but intensive home food production, and to finance the construction of homestead rainwater dams to enable people to grow nutritious food at home – throughout the year.

The Water Research Commission (WRC) recognised homestead farming (and especially food gardening) as poor households' own self-identified coping strategy to help protect themselves against the vulnerabilities of poverty. WRC then decided to develop this resource material for facilitators on 'Agricultural Water Management in Homestead Farming Systems' to help support poor households in their efforts to grow food.

This resource material thus responds to people's initiatives, and is aimed at helping households to grow more food at home, while using as little as possible of their scarce cash resources.

It also provides some ideas for value-adding and marketing strategies to support those households that decide to take their production to the next level. (See Chapter 7: Income opportunities from homestead farming)

Objectives of the research

Overall objective

The overall objective of the research sets its focus clearly on **home food security**, and practical testing of the learning materials, as follows:

Improve food security through homestead food gardening, by developing and evaluating the appropriateness and acceptability of training material for water use management, training the trainers and training household members in selected areas.

The specific objectives, deliverables and products for the research were as follows:

Specific objectives

- 1. Identify current indigenous crop/livestock production practices.
- 2. Describe water related practices and efficiency of water use.
- 3. Identify developmental constraints on opportunities from natural resources, infrastructure, human resources, HIV/AIDS, gender considerations, nutrition, institutions and culture, for both rural and urban households.
- 4. Specify alternative and improved agricultural practices for use in homestead gardens.
- 5. Determine economic incentives and entrepreneurial opportunities with specific reference to the youth.
- 6. Identify value adding opportunities and appropriate marketing systems.
- 7. Determine training needs of household/home gardeners in relation to available knowledge.
- 8. Develop and test training material to address needs.
- 9. Implement the training programme and interactively refine materials with trainers and households.
- 10. Assess the impact of the project on food security of trained households.

Deliverables through the research process

- 1. Situation analysis report for South Africa.
- 2. Situation report for the selected target communities.
- 3. Report on how to use or to improve indigenous practices/systems, and on possible alternative agricultural practices/systems for the selected areas.
- 4. Report on potential economic incentives and opportunities with specific reference to the youth and value adding opportunities and appropriate marketing systems.
- 5. Report on training needs of households/home gardeners in the selected

- areas in relation to most promising opportunities.
- 6. Proceedings of the first stakeholder workshop to obtain feedback from stakeholders on the previous two reports.
- 7. Report on the refinement of practices and technologies after participatory evaluation.
- 8. Progress reports on development and testing of training material.
- 9. Report on the effectiveness of the training methodology and implementation
- 10. Proceedings of the second stakeholder workshop to obtain feedback from stakeholders on the previous two reports.
- 11. Final training material.
- 12. Final report.

Products of this research process (available documents)

- 1. Situation analysis report for South Africa (Raise awareness of potential and constraints of household agricultural production).
- 2. Situation analysis for selected target communities (selected areas report) (Inform policy makers of the scope for and constraints on household agricultural production).
- 3. Report on existing practices and technologies (Inform policy makers of the scope for and constraints on household agricultural production).
- 4. Impact analysis of introduced technologies and training (Informing for policy and budget considerations).
- 5. Training material (The Resource Materials for facilitators to implement training).
- 6. Final report (Informing policy and implementation programmes).

2. Guiding Principles and Overview

The Chapters contained in this resource material follow a certain logic, based on key questions the WRC research team had to ask itself.

On household mobilisation

Acknowledging that, while more and more households are starting home food gardens, many others don't believe it is possible or worthwhile, the research team asked itself: "

How can the significance of food gardening become a reality in people's minds?"

The research team developed and field tested the 'nutrition workshop', and found it a very effective method to 'create discomfort' – which we know is where all changes in habit springs from. The nutrition workshop enables the household to analyse their own diets, discover the gaps, and choose crops to plant in their home gardens to fill those gaps.

On 'need-to-know':

Deeply aware of the bewildering amount of information on organic production methods, family nutrition, irrigation and water management, the researchers asked themselves:

"What is the minimum, essential knowledge a household would need to successfully grow an intensive, worthwhile home food garden? And then, what does the facilitator need to understand to accompany these households on that journey of discovery?"

The topics of the chapters in this Facilitators' Resource Materials manual stems from that analysis, namely:

Chapter 1	Rural realities and	l homestead	l food gard	dening options	

Chapter 2 Facilitation of homestead food gardening

Chapter 3 Living and eating well

Chapter 4 Diversifying production in homestead food gardening

Chapter 5 Garden and homestead water management for food gardening

Chapter 6 Soil fertility management: Optimising the productivity of soil and water

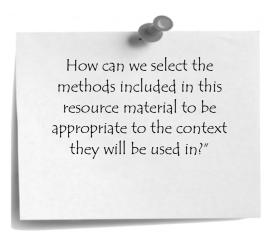
Chapter 7 Income opportunities from homestead food gardening

Handouts Homestead Food Gardener's Resource Packs

These chapters contain a lot more than the essential information. They enable a facilitator to select what is appropriate to any specific garden learning group.

On cash-scarcity:

Recognising that these households are growing their own food precisely because they have too little cash to buy enough nutritious food, the research team asked itself:



Because of the reality of cash-scarcity, we believe the Low-External-Input Sustainable Agriculture (LEISA) farming system (See Chapter 1: Rural realities and homestead farming options) works best for homestead farming.

Project process:

Developing the Resource Material

The research process and the development of the resource materials can be summarised as follows.

The Water Research Commission research team:

- Collated existing material;
 - Consulted other practitioners in three different ways, namely:
 - One-on-one consultations;
 - Worked together in the field; and
 - Held two well-attended stakeholder workshops;
 - Developed and implemented draft learning material with households in several villages, with Potshini as the main site. In implementing the draft learning material, the research team:
 - Worked through learning groups;
 - Emphasised follow-up home visits;
 - Emphasised learning processes that spanned at least one full growing season, but preferably longer;
 - Used household experimentation as a learning tool;
 - Refined the mobilisation, facilitation and support processes; and
 - Refined the technologies with households, based on their experiences with them;
 - Wrote the required deliverables and built these into the Chapters of the Resource Material where relevant. Of special significance were the following deliverables (these are described in more detail in section 4 of this document and in the Final Report: Participatory Development of Training Material for Agricultural Water use in Homestead Farming Systems for Improved Livelihoods):
 - An alternative approach to training needs assessment;
 - Refinement of practices and technologies after participatory evaluation; and
 - Impact assessment on the effectiveness of the training methodology and implementation of technologies;
 - Tried several approaches for training and support of facilitators, and built these lessons into the chapters of the resource material where relevant;
 - Refined and finalised the Resource Materials; and
 - Wrote a final report (WRC, 2009).

Examples

New ideas

4. Lessons learnt and impact of the research process

Herewith an overview of the key lessons learned and impacts achieved in this research and implementation process.

Cyclic, interactive learning processes: Look, learn, do

In the report on training needs assessment, the research team argued that cyclic, interactive learning processes were most appropriate and effective in the homestead food gardening context. Adults learn best:

- from each other;
- when there is an immediate need; and
- in cyclic, practical processes.

Table 1: Description of interactive learning processes used

-		
PROCESS	ACTIVITIES	METHODS/TOOLS
Assessment	OBSERVATION	Layout drawings Focus group discussions Sustainable Livelihoods Participatory Rural Appraisal
Analysis	LEARNING	Adult Education Farmer-to-Farmer Learning Groups In Situ Analysis of Gardens
EXPERIMENTATION - FOR PROBLEM SOLVING	ACTION	Farmer experimentation ACTIVITY CHARTS DEMONSTRATIONS
EMPOWERMENT -FOR OWN CHOICES TO CHANGE	PLANNING	MIND MOBILIZATION VISIONING INDIVIDUAL RECORD-KEEPING

By using a greater variety of methods/tools, as shown in the table above, opportunities for interactive, practical learning were maximised. In each cycle, learning is reinforced and deepened.

Sensible approach to training needs assessments

Conventional training needs assessments attempt to produce a list of 'training needs' for a geographical area. This inevitably results in a 'shopping list' of training needs which may well be generally applicable, but almost certainly fail to fit the specific training needs of any particular individual within that area. This results in ineffective spending on 'training needs assessments', and subsequently less-than-

ideal content of learning processes.

In contrast, we propose an alternative approach to training needs assessment for homestead food gardening.

- It starts with the **generic** (which is broad enough to cover the overall topic in most contexts);
- Followed by an **approximate contextualisation** (for instance, according to the local natural resource base); and
- Then eventually, specific training needs are defined only once the learning group has been formed and prior learning of the participating households established.

Table 2: Alternative process for effective Training Needs Assessment

	ve process for encourse framing recess Assessment
GENERIC: LEARNING CONTENT AREAS	The WRC Facilitators' Resource Material contains a generic set of learning content areas applicable to homestead agriculture. This is effectively what is "on offer", from which an applicable combination of material can be extracted for any particular set of needs. The WRC Research team collated this resource material through wide consultation and in-field testing. Facilitators can further augment this from other sources, should peculiar needs arise in a particular learning group.
	It is NOT necessary to perform a detailed training needs assessment at the village or regional level
	Establish whether there is an expressed need for household gardening, and specifically for <u>training</u> in household gardening
SITUATION ANALYSIS: REVIEW	Look at physical factors to see whether (and which of) the recommended soil and water management practices would work in the local context. Walk around the area and use external data sources to find out more about the conditions for gardening in the area.
BROAD CONTEXT	Find out what related processes have already taken place in the area. Are people gardening? How well are they doing? Have they had training before? What types of learning processes are preferred? Who is the specific target group for further training interventions?
	Establish whether there are any socio-political issues which may help or hamper the implementation of a training programme in homestead agriculture
Specific Specific	Confirm that the members of the household learning group are clear about what they want and can expect from participation in the homestead food gardening training programme; their expressed training need/learning agenda
TRAINING NEEDS OF HOUSEHOLD	Facilitate a group process through which members can express their know-how in gardening. This provides a way to recognise prior learning (RPL) in the group.
LEARNING GROUP: "LEARNING	Facilitate a "nutrition gap analysis" with the learning group. The households' shortfalls in the "Go, Grow and Glow" food categories are then used to plan their garden production and their "learning and action agenda" for the current season.
AND ACTION	Pick the actual training content from the WRC Facilitators' Learning Toolkit to suit their learning agenda .
AGENDA"	Incorporate own experimentation throughout the learning plan.
	Throughout the training programme , ask households about whether any specific problems are arising and where appropriate and possible, adapt the learning agenda to cover such issues.

Defining 'most promising' methods and technologies

After much debate, the team reached agreement on how to define the "most promising" methods and technologies.



These methods and technologies have in common that they help people <u>get more for their effort</u> in a cash scarce situation.

These methods help people to <u>intensify their</u> <u>production</u> thus getting better crop yield and quality, while using low cost methods and locally available inputs.

This improves <u>efficiency</u> in the use of resources.

We believe this definition provides a handy way of identifying further "promising technologies" in future. The most promising technologies identified to date include LEISA, (See Chapter 1) deep trenching and tower gardens (See Chapter 4), the runon water system, home-based water storage, and treadle pumps (See Chapter 5).

Following practical implementation, experimentation and evaluation in the field, we were able, in the "Report on the refinement of practices and technologies after participatory evaluation", to analyse each of the technologies that were introduced at the hand of the following questions:

- A description and/or analysis of the method/technology (What does it entail?);
- 2. How the method differed from existing local practice (How is it different?);
- 3. How the method had been refined or adapted to improve it or make it more suitable (**How has it been refined?**)
- 4. The outcome of assessments with households on how their performance compared to existing local practice (**Do people say it works better?**); and
- 5. Measurements (where possible) of the performance of these methods and technologies (**How much better/worse?**).

These questions provided a framework for systematic and comparative analysis and reporting on the refinement of the technologies, as well as the effects of the refinement. It provided a framework within which both **people's opinion** on the usefulness of a technology, and available **scientific work** on the subject, could contribute to the analysis. (For more detail on this, please see the Final Report.)

This set of questions also provides a mechanism for analysis and comparison of further technologies as they become apparent in future. For instance, in field visits subsequent to the completion of this report, we found it easier to assess the suitability of the newly developed 'pipe pump' and the diaphragm pump, and a home-made innovation for water-storage-and-irrigation which we discovered in one of the sites.

The method of analysis also helped highlight for us where we may not have been clear enough in our own thinking on certain aspects. For instance, it was somewhat difficult to explain the run-on concept to households, and working through the theory and practice of it amongst ourselves, we all gained new insights and felt we would be better able to explain it to others in future (see the section on 'Turning runoff into run-on' in Chapter 5).

It is a well-known phenomenon that tension almost invariably arises in multidisciplinary teams, typically because of the difference in points of departure and thinking processes employed by technically and socially oriented people, respectively. We feel that the development of the Resource Materials benefited greatly from constructive interdisciplinary analysis and interaction among members of our team. Possibly, the way in which the questions lent equal weight to technical and social matters, helped the interdisciplinary process of analysis.

Development and testing of the Resource Material

The research team used the following two questions in selecting the basic content of the learning material contained here:

- For Households' learning content: What is the essential knowledge a household needs to grow food at home?
- For Facilitators' learning content: What would a facilitator need to know and be able to do, to teach or facilitate this content for food gardeners?

This approach provided sufficient structure and logic to plan the layout and content of the learning modules for facilitators, as well as the handouts for food gardeners, the latter which is included here in several languages.

The feedback received on the draft material, both during the second stakeholder workshop and independently from other individuals, has been positive. There is great interest in the utilisation of the material by several public and private training institutions. The process of developing and testing the training material is discussed in detail in the Final Report (WRC, 2009).

Impact of the use of the material

The report on the effectiveness of the training methodology and implementation sought to answer two main questions:

- 1. To what extent have people taken up and implemented the new ideas brought to them through the training?
- 2. How has the process used to introduce people to the new ideas affected the uptake of the new ideas?

From surveys undertaken by the WRC team and others, it was clear that both the uptake and continued use of the technologies at Potshini had surpassed expectations. (See Final Report for details).

On the second question, the research team felt that our point of departure on effective training methodology for the rural homestead context had been validated.

Our approach is described in significant detail in the Training Needs Report, and our conclusions after evaluation are, in a nutshell:

- The use of Garden Learning Groups and learning through own household experimentation is highly effective.
- The use of household self-analysis of nutrition gaps (the Nutrition Workshop) is an important innovation as a 'mind mobilisation' tool to catapult households into action, i.e. to start gardening to address their nutrition gaps. (The most common nutrition gaps are protein and micronutrient deficiencies which are easily available from fruit and vegetable production at home).
- Rushed training without follow-up is worth very little, and training and support should be spread over at least one to three seasons to allow people to experience the entire agricultural calendar with the necessary support for seasonal problems as they arise.

The process of analysis of the impact of training had a useful side-effect for the research team. It sharpened our minds to the challenge of 'training the trainers' especially trainers for whom this would be a relatively new and unknown field of practice. Again, rushed, quick-fix approaches to the preparation of facilitators yielded disappointing results.

In contrast, the material was used very effectively (with merely some telephonic input from the WRC team members) by an experienced facilitator with appropriate agricultural background.

This led us to identify two complementary strategies for the development of skilled Household Food Security (HFS) Facilitators, namely:

- Longer term, structured academic and practical education of HFS Facilitators; and
- Transfer of the material and concepts to skilled agricultural facilitators, who could in turn provide a 'learning-by-doing' opportunity for new facilitators by training and mentoring them in real-life implementation situations.

Stakeholder consultation

In addition to one-on-one discussions with other practitioners and various stakeholders throughout the research period, two stakeholder workshops were held.

The first stakeholder workshop was well attended by a good cross-section of practitioners, researchers and officials. It was held in Bergville, and included a field visit to Potshini village, where stakeholders could interact with households that had been part of the research process, and could witness the results of the facilitation and learning processes. For the research team, the main outcome of the first stakeholder workshop was a strong recommendation by stakeholders that the research output should NOT be a single 'training course' or 'training material'.

Stakeholders argued that due to the range of situations found in practice, resource material or a "facilitator's resource pack" would be of greater benefit. This would enable practitioners to select material from the resource material and tailor make their own learning processes in response to every new situation they may encounter over time.

The Reference Group and the Water Research Commission accepted this change, with the following consequence:

- The material in Chapters 1 to 7 was structured as resource material, rather than a training course.
- The material was still structured along Outcomes Based Education principles, using interactive layout, examples, case studies and activities for facilitators' self-study.
- The material also contains structured facilitation tools which the facilitator can use for interactions with target households in field situations.
- A set of handouts was added, namely the 'Homestead Food Gardener's Resource Packs', which contains material that facilitators may give to participants in the facilitation processes that they undertake.

The second stakeholder workshop was not a large affair. Instead, the team aimed at inviting skilled and knowledgeable individuals representing a cross-section of fieldworkers, training and development practitioners and academics, who all have an interest in the interface between household food security and homestead water management.

The day was most valuable, with meaningful debate and concrete suggestions to the WRC team towards the refinement of the material, its possible application through various institutions and processes, and mechanisms for the future training and establishment of Household Food Security facilitators.

Some of the key suggestions were to strengthen the Facilitators' Resource Material as much as possible with references to scientific work, where these were available; and to seek opportunities to introduce and test the material in further test sites in follow-up work to the current WRC project. This has been done, and references are provided throughout Chapters of the Resource Material.

This material can be adapted for a variety of stakeholders to suit their needs. It can also be augmented by developing material above and below NQF (National Qualifications Framework) level 5.

5. Points of departure

Incentives for homestead farming

What motivates people to grow food at home, and particularly, to keep on doing it? The possibility to save – and even earn – some money, is an obvious incentive to engage in homestead farming, but is that all there is to it? Many never start, and some start enthusiastically, but abandon the practice after some time. Households who keep on growing their food gardens year after year, would appear to be those who have succeeded in adopting it as a way of life – as **part of their daily or weekly routine**, and as part of their planning for the season or the year.

A better understanding of the range of reasons that **get people into home food production**, and of the motivating factors and processes that help people to **stay committed** to this, should help to maximise the contribution of homestead farming to the food security, healthy eating and even some income supplementation of households in South Africa.

Key questions

- 1. What gets people into home food gardening and to keep on gardening (incentives), and conversely, what keeps them from growing their own food or stopping once they started (disincentives)? Are there proven ways to mobilise more households into homestead farming and to avoid abandonment?
- 2. Can one use a variety of approaches to reach people who differ greatly in their objectives and abilities?
- 3. How can food insecure people come to believe in themselves and their ability to grow their own food with what they have?
- 4. How can one compensate for the inherent scarcity of cash in food insecure households? Can one introduce production methods that reduce the cash requirement for inputs?
- 5. How can people's own seed storage and the revival of seed exchange traditions help increase the diversity and robustness of local varieties over time?
- 6. What is the role of local interest/learning groups in mutual encouragement among gardening households? Can the collective memory for planting dates and practices and the 'annual planting calendar' tradition be revived to remind and encourage all households to start their preparations in time?
- 7. Is it achievable to save and even earn significant money from homestead farming in South Africa? And are there opportunities for value-adding which are achievable for resource-poor households?
- 8. Can one easily recognise and avoid seemingly attractive possibilities that carry too much risk for already food insecure households?

Different incentives for different people

What people do, arise from what they think and believe. This is influenced by their circumstances. People have different reasons for getting involved in homestead farming.

For instance:

- An established homestead farmer, like Mr Mapumulo in Umbumbulu, may be thinking about planting out-of-season to capture lucrative markets;
- ❖ A grandmother could be planning to plant a range of foodstuffs to be ready for harvest during her children and grandchildren's annual visit over Christmas;
- ❖ A cash-strapped household may want to plant food to replace expenditure on essential foodstuffs;
- A concerned mother may wish to find an affordable way to increase the diversity and attractiveness of family meals, and of having healthy snack foods for young children; and
- ❖ Some households may want to generate additional income by selling vegetables, seed, adding value through preservation, packaging, etc.

The two 'pull' factors: Food and income



Professor Tushaar Shah (Shah, 2004) describes what he calls 'push' and 'pull' factors for agricultural development.

All the factors of production are 'push factors'. These are the things that <u>enable</u> production, such as land, inputs, machinery, credit, and

even institutional arrangements and training. Often, shortfalls in these 'push factors' are what government support programmes offer in an attempt to stimulate development, or production.

However, Professor Shah states that:

...push factors in themselves do not lead to development production.

A 'pull factor' is needed to stimulate people into production. The main pull factor is the market, which makes it worth people's while to produce. The more lucrative a market is, the stronger the pull factor. Further, if people perceive that it is within their

ability to provide what the market wants, they will go to great lengths *themselves* to find the means (the 'push factors'), in order to benefit from that market.

Shah then quotes an example of what he calls 'runaway' or 'wildfire development' - in the ideal case where the market wants - in significant quantities and at a worthwhile price - something which is very easy for a large number of poor

An even stronger and primary 'pull factor', of course, is one's stomach

– both actual hunger and the fear of hunger.

households to produce – and with means already at their disposal. In such a case, almost everyone can respond very quickly to the 'market pull', and the need disappears for government to try to 'push' development along. For instance, such 'wildfire development' happened in West Africa, when the demand and price for local fish soared, and poor households could suddenly earn good income from an established and well-known traditional practice.

An old Chinese proverb says: "A hungry man sees only one problem. Once the hunger is satisfied, he sees many."

Maslow's hierarchy of human needs

Maslow's well-known hierarchy of human needs also argues that a person's higherorder needs become motivational factors only once the <u>basic elements for survival</u> are in place. The satisfaction of lower level needs act like a stable foundation for further personal development.

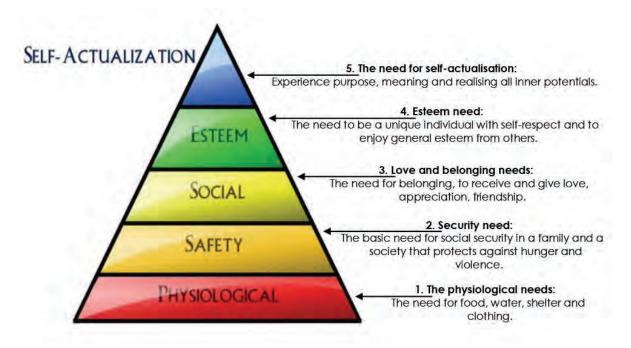


Figure 1: Maslow's hierarchy of human needs

Maslow's theory is useful to identify the different types of needs, even if not everyone agrees that these needs follow in hierarchy. Chilean economist and philosopher Manfred Max Neef (Neef, M.M.) argued that fundamental human needs are non-hierarchical, and are part of the condition of being human. Poverty, he argues, is the result of any one of these needs being frustrated, denied or unfulfilled.

Ma Tshepo Khumbane is a social worker and development activist who has worked in many parts of South Africa and Lesotho for over 40 years. She points out that where there are serious relationship clashes in a household, it becomes very hard for the household caregiver to engage in visioning, planning and implementation for a better future. Conversely, good relationships (social needs) and respect of neighbours (esteem needs) provides motivation and a strong foundation for growth. This points to the interrelatedness between human needs, whether or not they are hierarchical.

An understanding of the interplay between human needs also goes a long way to explain the role and usefulness of the Garden Learning Group approach to facilitation. (See Chapter 2 for more detail).



Understanding

Understanding the interrelatedness between human needs helps a facilitator to become more effective in motivating and mobilising households, by:

- Understanding why there might be a lack of progress in a specific household;
- Coming up with alternative mobilisation and facilitation strategies to work around such problems; and/or
 - Arranging for specific interventions or assistance for a household to solve such problems.

It is interesting that in recent years, a sixth level of Maslow's hierarchy of needs has been proposed, namely 'transcendence', which is sometimes described as 'helping others to self-actualise'. This recognises the motivational value to oneself, of reaching out to others. Participants in the Garden Learning Groups are encouraged to help others around them, in spite of their own dire situation, because reaching out actually helps their own healing process.

The Ten 'Human Capabilities'

Martha Nussbaum (Nussbaum, 2007) takes the thinking about human needs further with the 'human capabilities' theory, which shows the range of **material** and **non-material** factors that enables a person to live a full life – in other words, a life where a person can develop all ten their 'human capabilities'.

Humans need to be all that they can be, by developing all ten of the human capabilities (see Table 6 below). The capability approach contrasts with a common view that sees 'development' purely in terms of Gross National Product (GNP) growth, and 'poverty' purely as income-deprivation.

In this approach, poverty is understood as being not just income deprivation but also encompassing capability-deprivation. It is noteworthy that the emphasis is not only on how human beings actually function but on their having the capability, (which is a practical choice), to function, (i.e. functional capability) in important ways if they so wish. Someone could be deprived of such capabilities in many ways, e.g. by ignorance, government oppression, lack of financial resources, or false consciousness.

The approach emphasizes substantive freedoms, such as the ability to live to old age, engage in economic transactions, or participate in political activities. These are construed in terms of the substantive freedoms people have reason to value – such as happiness, desire-fulfilment or choice – rather than mere access to utilities or resources such as income, commodities and assets.

This understanding now underpins the Human Development Index and the Human Development Report produced annually by the United Nations Development Programme.



Personal responsibility, excellence and faithfulness:

The ability to develop all the human capabilities does not necessarily result in them being developed. Personal responsibility and faithfulness is also necessary.

When everything is in place for people to achieve something, they can still choose whether or not to try/persevere.

Table 3: The ten human capabilities

"A list of specific capabilities as a benchmark for a minimally decent human life"

1. Life.

Being able to live to the end of a human life of normal length; not dying prematurely, or before one's life is so reduced as to be not worth living.

2. Bodily Health.

Being able to have good health, including reproductive health; to be adequately nourished; to have adequate shelter.

3. Bodily Integrity.

Being able to move freely from place to place; to be secure against violent assault, including sexual assault and domestic violence; having opportunities for sexual satisfaction and for choice in matters of reproduction.

4. Senses, Imagination and Thought.

Being able to use the senses, to imagine, think, and to reason – and to do these things in a "truly human" way, a way informed and cultivated by an adequate education, including, but by no means limited to, literacy and basic mathematical and scientific training. Being able to use imagination and thought in connection with experiencing and producing works and events of one's own choice, religious, literary, musical, and so forth. Being able to use one's mind in ways protected by guarantees of freedom of expression with respect to both political and artistic speech, and freedom of religious exercise. Being able to have pleasurable experiences and to avoid non-beneficial pain.

5. Emotions.

Being able to have attachments to things and people outside ourselves; to love those who love and care for us, to grieve at their absence; in general, to love, to grieve, to experience longing, gratitude, and justified anger. Not having one's emotional development blighted by fear and anxiety. (Supporting this capability means supporting forms of human association that can be shown to be crucial in their development.)

6. Practical Reason.

Being able to form a conception of the good and to engage in critical reflection about the planning of one's life (protection for the liberty of conscience and religious observance.)

7. Affiliation.

A. Being able to live with and toward others, to recognize and show concern for other human beings, to engage in various forms of social interaction; to be able to imagine the situation of another. (Protecting this capability means protecting institutions that constitute and nourish such forms of affiliation, and also protecting the freedom of assembly and political speech.)

B. Having the social bases of self-respect and non-humiliation; being able to be treated as a dignified being whose worth is equal to that of others. This entails provisions of non-discrimination on the basis of race, sex, sexual orientation, ethnicity, caste, religion, national origin.

8. Other Species.

Being able to live with concern for and in relation to animals, plants, and the world of nature.

9. Play.

Being able to laugh, to play, to enjoy recreational activities.

10. Control over One's Environment.

A. Political. Being able to participate effectively in political choices that govern one's life; having the right of political participation and protections of free speech and association.

B. Material. Being able to hold property (both land and movable goods), and having property rights on an equal basis with others; having the right to seek employment on an equal basis with others; having the freedom from unwarranted search and seizure. In work, being able to work as a human being, exercising practical reason and entering into meaningful relationships of mutual recognition with other workers.

Summary

The desire to fulfil a 'human need' or to develop a 'human capability' is what motivates a person to do something. We need to understand these motivational factors if we want to become more successful at:

- Mobilising people into homestead farming; and
- Motivating them to keep on producing year after year.

We also need to learn more about those things that discourage or demotivate gardeners, and events that cause a break in production which could make it hard to get back into production again. Following the old adage 'prevention is better than cure', we can then try to help people avoid demotivating situations and events.

For the mobilisation of households into homestead farming, we can focus on two 'pull factors', namely food, and income.



Aim:

To identify the 'pull factors' for homestead production in a given situation, and understand its role in mobilisation and in the sustainability of homestead farming.

Instructions:

- 1. Read through the situations described under 'different incentives for different people' above. In each situation, try to identify whether **food** or **income/money** is the incentive for production. Do you think this can change over time for a specific household?
- 2. Now read though the 'human capabilities'. Which of these ten 'needs/capabilities' could possibly also provide incentives for home food production? For each 'need' among these ten that you consider to be a possible incentive for home food production, do the following:
- i. Describe a situation where you think this could be the incentive.
- ii. State whether you think this incentive would mobilise a person into production, and/or motivate a person to <u>carry on producing</u> year after year.
- 3. Think about '7 Affiliation or the need to feel part of a group. Would you agree that being part of an ongoing group of gardening friends could help motivate some people to carry on planting their gardens? Because we realise that people want to 'belong', we may think of ways to make the Garden Learning Groups interesting and meaningful. This can help to create that sense of belonging and shared experiences the good times and the hard times which tie people together in a circle of friendship.
- 4. Now you may also want to reflect on possible motivating factors for food gardening related to 2 bodily health; 5 emotions; 6 practical reason; 8 other species; and 10 control over one's environment.

5. Now think about the Human Capability (=Need=Motivating Factor) to **play**. Can you see the value of building lots of fun into the Garden Learning Group sessions? Fun and laughter is not only a very strong motivator, it is also recognised in medical circles as the single most effective antidote to stress. (Science Daily. April 10, 2008)



Facilitator's note:

Many people find the human capabilities somewhat abstract and not easy to understand. Do not get discouraged if it does not make sense to you immediately.

Tools to help us differentiate between incentives

A number of tools and approaches can help the facilitator to better target advice and interventions.

- 'Household typologies' can be developed to categorise people with similar objectives. This approach was used for smallholder irrigation schemes, and is also suitable to help target facilitation and intervention strategies for households with different objectives in homestead farming.
- The Helicopter Planning method is a combined vision-building/action-planning/self-monitoring process, which helps the household to think themselves into a possible future, and to decide on a practical plan of action to achieve their desired future through achievable and measurable steps. The method is described in more detail in Chapter 2 of this document.

Both the 'Helicopter Planning' and the household typologies use scenario-based planning to assess possibilities and their consequences, which can then also be used to plan facilitation, training and intervention steps.



During initial scoping
(information gathering and
analysis) in a village, one gets a
broad idea of the types of
situations found in that village.
Household typologies or
categories can be developed at
that stage



Later in the process, when the facilitator starts working directly with specific households, she can use Helicopter Planning as a tool to help each household to get clarity about their own objectives, and to plan their own actions accordingly.

Some household typologies

The following case studies help us to think about the differences between households' situations. The facilitator needs to interpret what s/he sees and hears, in order to plan effective facilitation strategies, and to do problem-solving in specific cases.



Case study 1: Ms Beauty Mbhele (Mantshalolo Village)

The situation:

Ms Mbhele (52) lives alone with her two teenage children (19 and 20 years) and a younger severely handicapped son. They survive off her pension. She is a traditional healer.

The homestead is small and somewhat unkempt. She had planted some maize in her field, but her vegetable garden was lying fallow at the time.

Ms Mbhele paid a person R800 that she had made from selling potatoes she had grown, to excavate the hole for her underground rainwater harvesting tank. A demonstration in trenchbed production and channelling rain water to the garden was held at her home. The family collected manure and grass prior to the demonstration.

Household Typology summary:

People:

1 adult (active), 3 children; high dependency ratio as children are grown up and could contribute, and due to physical disability of one child.

Income:

Pension and traditional healing.

Cropping:

Maize, potatoes and beans for household use.

Livestock:

Some free range chickens.

Intensification: Rainwater harvesting and vegetable production.

Infrastructure: Small homestead, fenced, by vulnerable.

Human capacity: Received some training.

Possible enabling interventions:

Assistance: Grants, food support, health supporting Vegetable production: Intensification for household use, to include fruit and small livestock

Income replacement interventions: For example processing of food, grain banks (for seed and food security)

Assistance with productive assets: fencing, water, fruit trees, small livestock

Community services: Clinic, crèches and school with feeding schemes

Learning group support: For sharing and supply of crops (introduce new ideas), e.g. potatoes, maize, beans, sweet potatoes, onions, tomatoes.

Supply of surplus produce to local projects, where possible,

A view of Miss Beauty Mbhele's homestead.



Photo: E. Kruger, LIMA – DWAF, 2006

Nonhlanhla, a community facilitator for the NGO working in the area, interviews her. The disused vegetable garden is in the background.





Case study 2: Mr Michel Mbhele (Kayeka Village)

The situation:

This is a reasonably sized homestead (with one large and 2 small dwellings) with 2 adults and 7 children. Income consists of 1 child grant and Mrs Mbhele sells snacks at

the nearby school.
They have received some food production training from LIMA and Vukani. Rainwater is presently harvested in 2 × 200 I drums and used for watering

The property is fenced. Fields above and below the homestead have been planted to maize and traditional beans.

plants.

Household Typology summary:

People:

2 adults (active), 7 children; high dependency ratio.

Income:

grants and small business activities.

Cropping:

maize and beans for household use.

Livestock:

Some free range chickens, kraal for cattle and goats.

Intensification:

Rainwater harvesting and vegetable production.

Infrastructure:

Well developed homestead, fenced fields and garden, rainwater harvesting tanks.

Human capacity: Received training, entrepreneurial ability.

Possible enabling interventions:

Vegetable and crop production intensification.

Supply of surplus produce to local projects.

Learning group support for sharing and supply of crops (introduce new ideas), e.g. potatoes, maize, beans, sweet potatoes, onions, tomatoes.

More intensive production of small livestock for use and sale of surplus.

Cropping: Soil fertility interventions for greater yield.

Livelihood diversification: Further grants or part-time employment.

Further development of entrepreneurial activities.

Saving schemes for productive purposes.

Grain banks.

Mr Mbhele stands next to his bean field talking to Nonhlanhla, the community facilitator for that village in 2006.



The same view of the same field two years later, shows that the family have now planted fruit trees (oranges, peaches and plums) inside the fence of the field, and evidence of ploughing and planting of potatoes is

visible. Photo: E Kruger, DWAF, LIMA, 2008.



Mr Mbhele volunteered to dig his own hole for his rainwater harvesting tank. He had completed a portion of his excavation by the follow up visit in 2006. Here Mrs. Mbhele stands by their completed tank which is now full of water, ready for use for vegetable production. Photo: E Kruger, DWAF, LIMA, 2008.





Case study 3: Mr Phelemon Mnguni (Ziqalabeni Village)

The situation:

This is a well developed homestead (7 dwellings) with 7 residents.

They have no stable income outside of 2 child grants. Mr Mnguni works on the roads from time to time.

There are 2 small, well-fenced vegetable gardens. Water is led into one of the gardens by means of a furrow from the yard. The gardens are well planted and well tended. There are numerous large fruit trees (peaches, plums, apples, grapevines).

Rainwater is harvested also from 2 ×200 l drums from the roofs and this is used for watering vegetables.

He also has an enclosure for his geese and a number of chickens in the yard.

Household Typology summary:

People:

4 adults (active), 3 children; low dependency ratio.

Income:

Grants and part time employment.

Cropping:

Maize, potatoes and beans for household use and sale.

Well developed vegetable garden with fruit trees.

Livestock:

Chickens, duck and geese houses, kraal for cattle and goats.

Intensification:

Rainwater harvesting and vegetable production.

Infrastructure:

Well developed homestead, fenced fields and garden, RWH tanks.

Human capacity: Received training, entrepreneurial ability.

Possible enabling interventions:

Specific commercial cropping or gardening ventures possible. Learning and management of marketing processes required.

Vegetable and crop production management for efficiency and diversification, e.g. low tillage, inter-cropping, crop rotation and new crops.

Supply of surplus produce to local projects and markets further afield.

Learning group support for sharing and supply of crops (introduce new ideas), e.g. potatoes, maize, beans, sweet potatoes, onions, tomatoes.

More intensive production of small livestock for use and sale of surplus.

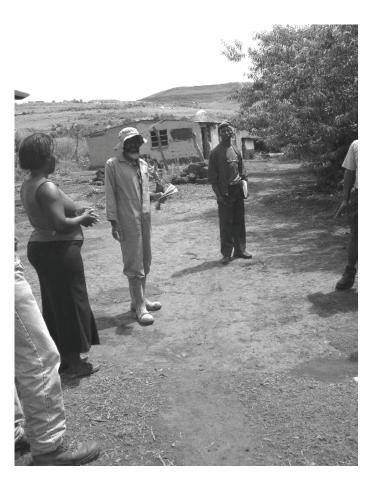
Cropping: Soil fertility interventions for greater yield.

Livelihood diversification: Further grants or part-time employment.

Further development of entrepreneurial activities.

Saving schemes for productive purposes.

Grain banks.



Mr Mnguni's homestead. He is standing in the centre of the picture.



A view of his geese enclosure.



A view of Mr Mnguni's vegetable garden. He already follows many good fertility and rainwater harvesting practices in his garden shown here by trench beds with water harvesting furrows he has constructed. He has been gardening in this way for some time and was originally trained in these methods through Vukani.

Analysis of the Household Typology Case studies

The three case studies above were chosen to clearly represent different household typologies (or as clearly as is possible in the real world, anyway!). The three categories or typologies of households have different opportunities and constraints, different incentives and disincentives, depending on their livelihood situations, which we will briefly summarise in the table below. The idea is that this kind of categorisation can help you as a facilitator to decide what interventions or grouping of interventions are appropriate for different homesteads. Obviously, this is not set in stone! Peoples' own motivation and ability plays an important role as well.

Table 4: Linking household typologies to livelihoods and appropriate interventions

Case study	Livelihood summary	Interventions
1: Mrs Mbhele	Woman headed household, with a large dependency ratio and little or no income. Resources and infrastructure limited.	NO RISK CAN BE TAKEN! DIVERSIFICATION, MAINTENANCE AND PROTECTION OF INCOME. Assistance, e.g. grants, food support, health supporting. Vegetable production intensification for household use, to include fruit and small livestock. Income replacement interventions, e.g. processing of food, grain banks (for seed and food security). Assistance with productive assets, e.g. fencing, water, fruit trees, small livestock. Community services: clinic, crèches and school with feeding schemes.
2: Mr Mbhele (different family to Case 1 above!)	Male headed (husband and wife) household with a large dependency ratio. More diverse source of income. Reasonable infrastructure and resources.	SLIGHTLY MORE RISK CAN BE TAKEN. DIVERSIFICATION AND INTENSIFICATION OF PRODUCTION AND INCOME GENERATING ACTIVITIES, MOSTLY LOCAL. Vegetable and crop production intensification. Supply of surplus produce to local projects.
3: Mr Mnguni	Family headed household (2 generations of family members), small dependency ratio. Diverse source of income. Infrastructure and resource development evident and well established	MORE RISK CAN BE TAKEN. DIVERSIFICATION OF INCOME, AND PRODUCTION OF SPECIFIC PRODUCE (crops, livestock) FOR SALE. Specific commercial cropping or gardening ventures possible. Learning and management of marketing processes required. Vegetable and crop production management for improved efficiency and diversification, e.g. low tillage, inter-cropping, crop rotation, new crops Supply of surplus produce to local projects and markets further afield.

Look at the activity below. It will assist you to further think through incentives and disincentives of the households in the three case studies presented above.



Activity 2:

Identifying incentives and disincentives within the different household typologies

Aim

To identify the opportunities and constraints that are likely to be relevant for different households, and to plan facilitation activities with that household accordingly.

Instructions

By now you should have a good idea of the typical issues involved in people's decisions to start and continue gardening.

Analyse each of the Case studies 1-3 and write down your opinion about what is likely to act as incentives and disincentives for each of these homesteads. Use your experience of similar situations to guide you.

	Incentives	Disincentives
Case study 1	For example Mrs Mbhele's interest in growing and using traditional medicine.	For example Mrs Mbhele needs to spend a lot of time and effort looking after her handicapped son.
Case study 2		
Case study 3		

Get growing! Mobilising people into production

Have you noticed that all the households in the three examples above were already gardening?

Thereafter, the first food cooked from their own harvest is a wonderful motivating factor, but it is surprising how many households forget to plant follow-up crops!



The facilitator's greater challenge is to motivate non-

households into production.

Incentives that mobilise people into home food production

The following are examples of incentives that may help to get people gardening:

- Family practise/tradition;
- Natural interest/inclination;
- Shortages: of food; of money to buy food, of availability of the desired foodstuffs to buy, of health that would be improved by access to more nutritious food;
- Lucrative and accessible market, which in the best-case scenario would result in 'wildfire'-development (as described above by Professor Shah);
- When it becomes fashionable to grow one's own food; and
- ❖ When external incentives entice people into production, such as subsidies or rewards. Recurring subsidies, such as for seed, fertiliser and other inputs, tend to create dependencies and mostly fail to lead to sustainable production. Once-off, so-called 'smart subsidies' are non-recurring and aimed at permanently removing specific identified obstacles to independent and ongoing production (e.g. rainwater storage, manual pumping technologies, and enduring tools).

Disincentives which prevent people from starting home food production

- If a person believes that s/he does not have the means to garden, not even a great shortage of food would get them to start growing their own food. Therefore, when a person realises that it may in fact be possible to grow food with what is already within their reach, a great stumbling block is removed.
 - The most powerful way to bring home this realisation, is for a person to **see an example** of someone just like her, who is gardening successfully someone who has overcome the main issues, which are usually:
 - I don't have money (use low external input production methods);
 - I don't have water (use rainwater harvesting techniques and recycling);
 - I don't know how, I am afraid (we will learn as we go; we will learn together as a Garden learning Group).
- ❖ If a person has real difficulties due to physical circumstances, or a disproportionate burden to carry (time, labour, health constraints, for instance a single adult with a large number of dependents), the facilitator may need to help her plan how to overcome or circumvent some of these constraints. The Garden Learning Group may decide to help such a person to get her garden established (e.g. help her dig and prepare the planting trenches), which may then put her in a position to keep it going thereafter.
- ❖ If a person just simply doesn't want to garden, because s/he just does not like gardening at all, or do not wish to associate themselves with it, there is very little that a facilitator can do!

Catalysing action

Most often, even when there are sufficient incentives, and the disincentives have been addressed, there still needs to be some event, or intervention, to get non-gardening people going – something that would catalyse action.

For instance, one may know for many years that it would be good to get more exercise, and that this would be as easy as going for a walk or a jog in the morning. But maybe only once you learn that you have a serious health problem, or maybe someone insults you, you would actually make the effort to get up a bit earlier and go for that walk/jog!

→ Mind Mobilisation Workshop

Ma Tshepo Khumbane has developed the 'Mind Mobilisation Workshop' for this purpose. In this workshop, which may run over four or five days, she takes the participants through a process where they have time to analyse and face up to their own situation honestly, and plan practically how to improve it. These tools will be described in more detail in Chapter 2.

→ Nutrition Workshop

One of the outcomes of the work done for the Water Research Commission was the development of the Nutrition Workshop (Described in detail in Chapter 3).

The Nutrition Workshop provides a less emotionally charged alternative to the Present Situation Charting, which often results in emotional breakdown of deeply food insecure persons. However, it could be argued that the failure to create an opportunity for these emotions to surface and be dealt with may detract from the depth and effectiveness of the healing process.



Choice of mobilisation method:

The choice of mobilisation method would thus need to depend on

- the needs of the participants (their level of food insecurity and traumatisation); and
 - the skills and experience of the particular facilitator(s) working with them...

→ Giving seedlings: Creating urgency

In both mobilisation methods, participants are given seedlings to start their gardens with. If the upfront processes were done well, meaning that people would now be keen and eager to get going with their gardens, the seedlings provide the urgency to delay no further! They will have to plant the seedlings before they wilt and die.

There have been many debates about whether or not to supply households with recurring inputs like seedlings, seed, fertilisers and pest remedies.

- ❖ Often, households fail to replant unless they continue to receive these inputs, in other words, the intervention is not sustainable.
- On the other hand, many of the poorest households never really get started unless they are assisted with some inputs. Further, they can harvest much more quickly and reliably if they can plant seedlings instead of relying on seed to actually germinate well.



The recommendation of the research team is:

To provide seedlings as an incentive and to **create urgency**. People can start planting while the excitement of the mobilisation process still runs high.

In the follow-up training households learn how to successfully harvest and safely store their own seed and to germinate their own seedlings from these.

Production methods are promoted that avoid the need for external inputs like bought seeds, seedlings, fertilisers and pest and disease remedies.

Keep on growing your garden: Motivators and disruptors

We know that a large proportion of households that start food gardens may later stop growing their own food again. Why is this? Can we foresee some of the dangers and help households to plan against them upfront?

Incentives for continued food gardening

First harvest

Success breeds success. Many people describe the deep satisfaction of – literally – eating from the fruits of their own labour. This achievement should be reinforced through a celebration. The Garden Learning Group members together could cook up a feast from their own harvest, and if they wish, invite neighbours and leaders to share in their joy. This also creates broader recognition of their achievement, and much-needed moral support from those around them.

First replanting and planting calendars

The first replanting is critical, and thereafter, some form of reminder to replant is useful, especially for households that are new to gardening:

- Once the first crop is growing well, and even before it is harvested, the facilitator should take the household through the process of getting their next beds prepared and further crops planted.
 - This can be done in a planned manner, so that the household can choose crops to plant in accordance with the family's diet gaps identified through the Nutrition Workshop. (See if you can simplify the 'Planning what to plant' chart provided in Chapter 3).
- As an ongoing reminder to their members to keep replanting their gardens in the different growing seasons, the Garden Learning Group can fall back onto old traditions, such as the Annual Planting Calendar, Harvest Festivals, Environmental Cleansing Ceremonies before the rainy season starts, etc.

Keeping it interesting

Very often, it is relatively easy to keep people's interest going during the initial facilitated process. This should normally be a 6 to 12 month period, and includes an agreed programme of learning workshops for at least one full growing season, regular follow-up visits to the households' home gardens, and further planning and feedback sessions of the Garden Learning Group. During this initial period, there are often also visitors from outside the village, and maybe some research taking place. All of these activities help to keep people interested.

The great challenge comes when these activities start to taper off. The households' interest may then also start to dwindle, and more people may fail to tend and replant their gardens. The facilitator can usually remain with a particular group or

village only for a limited period. How can this loss of interest then be avoided, especially after the facilitator is no longer working with those particular households?

The only approach that stands a chance of being sustainable in the long run is to strengthen the Garden Learning Group and capacity of the households themselves. The long-term role of the Garden Learning Group is to act as friendship circle and an ongoing source of mutual support and inspiration for all its members.

The typical tasks that a Garden Learning Group can assign to itself are discussed in greater detail in Chapter 2.



While the facilitator is still with the group, s/he should do all s/he can to enable them, from the start, to do their own planning and to be aware of the long-term challenges they will face.

By getting them into a habit of regular self-evaluation and re-planning, the facilitator helps the Garden Learning Group to adopt a way of working through which they can continually renew their focus and activities over the years to come.

Income generation

When a household can earn some extra cash from selling some of their home garden produce, this also helps to keep their interest going. We know that it is advisable to start off with a food focus for home food production, but this first phase can be followed rapidly by income generation activities for those households that have an interest in going this route. These aspects are discussed in detail in Chapter 7.

The following aspects are particularly important to consider:

- ❖ No-one should be forced into 'business' just because the majority of the group wishes to go this route. Make sure that everyone can choose whether or not they wish to go into selling. As we have seen from the three case studies above, there are great differences in the level of risk different households can afford to take therefore there is no 'one-size-fits-all' solution.
- Help households to do a realistic assessment of the risk of different income generation options. For instance, ideas that would require of them to pay a monthly electricity bill even when they are not producing are too risky for food insecure households.
- ❖ Fights over money are as common as sand to the sea. Many groups have broken up irreparably over such disputes. Therefore our advice would be to avoid

projects that create economic interdependence between households. As far as possible, plan things in such a way that each household can handle its own finances independently. If joint marketing is done, help the members to agree clearly upfront how matters will be handled to avoid disputes.

Value adding and diversification

There are many value-adding and preservation ideas which households can experiment with over time. (See Chapter 4: Diversifying production in homestead framing for more detail) These also add to the level of interest that can be maintained in the long run.

One idea would be for the Garden Learning Group to have a 'new idea of the week or month', where each member must bring a new idea on a rotational basis.

Regular celebrations

fun, fun! Remember how strong people's need is for friendship (Maslow's third level) and "play" (human capabilities). Regular celebrations keep the energy levels up and create something to look forward to on the annual calendar.

Disincentives, disruptions and discouragements

Poverty and vulnerability go hand in hand. Illness in the family, a wedding or a funeral, or natural disasters like droughts or floods, may all place sudden strain on the household.

Just as easily, unexpected opportunities may disrupt sustainable activities. For instance, the chance for short-term employment on a government construction project in the area may bring some much-needed cash to the household, but at the same time, may leave them with insufficient time or labour to replant their home food garden. Similarly, if the person responsible for the gardening needs to go away for a period, for instance to care for a sick relative, the garden may fall into disarray.

What can be done to plan ahead for such incidents?

- ❖ By planting hardy crops which self-propagate and go on yielding year after year, a household can establish a 'core garden' which would be easier to resuscitate after a period of neglect or absence. There are several vegetables and fruit crops that can be used for this purpose.
- ❖ By paying attention to the garden layout so that rainfall run-off would always flow automatically to the planting beds even in one's absence (i.e. run-on), the chances of survival of the garden is much improved.
- The Garden Learning Group may decide to play a role in helping each other through such periods.
- ❖ Further, the Garden Learning Group may develop a system of following up on members who stop growing their gardens for any other reason, so as to help the member to overcome problems and get back into production.

It is useful to remember that the gardening skills are never lost, and that the low external input methods enable a person to grow food almost anywhere, anytime. Therefore, should a person stop producing because she finds fulltime employment, she could always go back to production whenever the job falls away again.

Probably one of the most serious disruptors to food gardening is local conflicts. The stability of the Garden Learning Group should therefore be protected at all costs.

The very large number of funerals held in villages in recent years is very time consuming and a drag on emotions, labour hours available and cash resources. This is simply a current reality in rural communities.

Purpose and targeting of mobilisation

The 'first brick': Food security and resilience through diversification

When we want to mobilise and support food insecure households to engage in home food production, the most effective mobilisation strategy is usually to first focus on food security, and to leave the income generation aspects to emerge much later in the process.

Households in low income categories are also very vulnerable to risks and shocks. Any natural disaster or illness in the family or events that require money, like school clothes, weddings and funerals, can leave such a family in a state of disarray.



We have already seen that diet diversification is one of the most important ways to improve food nutrition security and the family's health. (This will be discussed further in Chapter 3: Living and eating well).

Therefore, diversification in the garden also helps to protect the family against health risks.

Spin-off benefits: Healthy eating for all

In Chapter 3 we will see that in South Africa, malnutrition is not limited to the low income households. Most of our more common health problems, like diabetes and obesity, are directly related to our poor lifelong eating habits.



Home food gardening and a better understanding of our nutritional needs, can equip families in all income categories to eat better and avoid preventable diseases.

Permanent damage to children under the age of five – in both poor and non-poor families – through chronic malnutrition, can easily be prevented through better food habits.

Therefore, among all households, a focus on better health can provide a strong incentive for home food production.

Second-phase: Income opportunities

We have seen that the income earned from home production of vegetables, could push up the family income of low income households by 10-30%, sometimes already in the first season of production.

As people's gardens expand and their diversity of production increases, the income potential also grows significantly. The following aspects can enhance the overall income and the stability of income streams from homestead farming:

- Expansion and further intensification of production, for instance, by planting a specific bed three or more times per year;
- More fruit production, through planting of a variety of fruit trees with different harvesting dates;
- Diversification into production of a variety of livestock, poultry and fish, and using waste from each component of the homestead farming system to feed into other components (for instance, chicken manure to fertilise the vegetable beds and feed the fish, and vegetable scraps to feed the chickens); and
- Processing, preserving and value adding of food, so that it keeps longer and can be used and/or sold throughout the year.

In Chapter 7, we will look in more detail at income opportunities from homestead farming. We will also look particularly at how to help households to recognise and avoid those income opportunities which may carry too much risk for low income households.

Emotional healing as a foundation for food security

We have seen above that the first target of homestead farming – and its most immediate impact – is on food security. Therefore we need to develop a deeper understanding of hunger and malnutrition, and how to use this knowledge to improve the effectiveness of our facilitation strategies. This is also discussed in Chapter 3.

Psychological effects of hunger

Josué de Castro (De Castro, J) lived as a child among permanently malnourished communities in the mangrove swamps of Brazil, and has made it his life's task to break the silence on hunger. In 1996, the Food and Agriculture Organisation (FAO) Council "honoured the memory of Professor Josué de Castro who made an outstanding contribution to the understanding of the problems of hunger, particularly with the publication of his book "Geography of Hunger" in 1946".

De Castro explains the nature of two types of severe hunger:

There are two ways of dying of hunger: one is not to eat at all and rapidly waste away until death, and the other is to eat inadequately and begin a cycle of specific deficiencies which might ultimately end up in death. Partial or chronic hunger is more pressing than total hunger (starvation). The latter has social and economical impact but the former (chronic hunger) will silently destroy and undermine countless populations.

He also describes some of the effects of severe hunger on the individual's way of thinking about life:

Hunger not only acts on the body of the victims... wasting the flesh, eating away the organs and opening wounds, it also destroys the spirit, the mental structure and the moral conduct of these people. No other calamity can disassemble the human character as deeply and as harmfully as hunger.

Prolonged hunger produces traumatised individuals.

The literature confirms such links between malnutrition and psychological problems:

- ❖ According to Dawes (Dawes et al., 2000), recent reviews and theoretical analyses support the view that prolonged nutritional deficiencies produce lasting changes in emotional control and motivation, with wide-ranging effects on all aspects of personal functioning, including cognition (Barret & Frank, 1987; Pollit et al., 1996; Strupp & Levitsky, 1998)
- Steinfeld (Steinfeld, 1956) investigated the hypothetical 'hunger trauma' in babies and its relation to later schizophrenia.
- ❖ Jahoda (Jahoda, 1958, reprinted 1999) highlights at least three mental health problems related to malnutrition: nutritional problems of pregnancy; toxic deliria associated with certain vitamin deficiencies; and some of the confusions of elderly persons associated with both drug intoxications and malnutrition.



Activity 3: The effects of hunger

Aim

To think about how humans react to prolonged hunger.

Instructions

Carefully read the quotations and literature references above.

Describe in which ways the human character can be disassembled by the calamity of chronic hunger? Think about what you know that people do when they are desperate for food and cannot see a way out. How do they behave? What do they do and say which people normally wouldn't do or say?

You may also want to read the following website to get a better understanding of this: [http://www.josuedecastro.com.br/engl/hunger.html]

Hunger as the ultimate symbol of powerlessness

In the book "World Hunger: 12 Myths" (Lappe et al., 1998), the authors argue that hunger should not be viewed merely as the statistics of numbers of people suffering from deficient nutrition and thus the volume of food aid needed by them. **Instead, hunger should be understood in terms of universal feelings experienced by the hungry**, such as the anguish of <u>impossible choices</u>, the <u>grief</u> of seeing loved ones suffer or even die, the <u>humiliation</u> of living in impoverished circumstances and <u>fear</u> of powerful people.

Dawes (Dawes et al., 2000) found that psychosocial and economic reconstruction go hand in hand. People who suffer war stresses (and other stresses -authors' addition), are not in a good position to learn new skills, to benefit from education, or to work and plan effectively. At the same time, economic reconstruction is a source of psychosocial well-being. They found that "Economic issues motivated projects aimed at structural rebuilding, and physical rebuilding became part of the healing process."

Since the early 1970s, Ma Tshepo Khumbane has lived and worked with food insecure households across South Africa and Lesotho as a beloved and respected social worker and development activist, and has a deep understanding of the effects of chronic hunger on the mental state of 'household caregivers' who fail to feed their families adequately.



Household caregiver

This term refers to that individual in a household who shoulders the main responsibility for the household's daily meal.

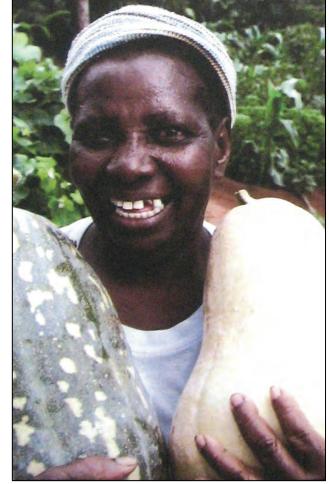
Note that this is not the same as the 'breadwinner' which is not a very useful concept in rural South Africa where mostly the household survives through a range of contributions by several members of the household and/or extended family.

The household caregiver is most often the mother, grandmother or other head female of the household.

In the food insecure household also, their successes at food production provides a

great boost to their healing

process.



Ma Tshepo Khumbane, social worker and development activist across South Africa and Lesotho for more than forty years.

Photo: Courtesy of' The Star' newspaper.



Activity 4: Universal feelings experienced by the hungry

Aim

To develop empathy with the feelings of insecurity and rejection experienced by food insecure mothers/caregivers.

Instructions

Have you ever been in such a position? How would you feel if you were unable to put food on the table for your family, day after day?

- 1. First describe how you would feel towards the following people:
- Your children;
- The adults in your household;
- The neighbours;
- Leaders in your community, church, etc.
- 2. Next, describe what you feel each of these people might be thinking or even saying about you.
- Your children:
- The adults in your household;
- The neighbours;
- Leaders in your community, church, etc.

The need for harmonious and supportive relationships

Ma Tshepo has found that:

- (i) Emotional healing of the household caregiver; and
- (ii) The healing of family relations are essential to create a secure base from where an individual can plan and act with confidence and joy. Often, when this is achieved, family members all start helping to shoulder the tasks for food security and harmony.

The individual's need for such a 'secure base' is described by Bowlby (quoted in Braun, 2003), who says that:

Human beings of all ages are happiest and able to deploy their talents to best advantage when they are confident that, standing behind them, are one or more trusted persons who will come to their aid should difficulties arise.

Imagine a baby at its mother's knee, willing to crawl away to look at something interesting across the room, because he knows mom is there to save him if trouble should arise. By contrast, a child living with constant criticism may become too afraid to try anything. Adults' reactions are influenced in similar ways by people around them when they have to face difficult situations in life.

The role of support groups in healing and overcoming powerlessness



Case study: Potshini

In an evaluation of the impact of Garden Learning Groups in Potshini, KZN, two years after they were created, households said that one of the most significant outcomes of these learning groups was improved relationships among community members.

We may say they managed to "say thatha (goodbye) to gossip"!

In food security facilitation, the household caregiver's personal confidence is further stimulated through the creation of 'support groups' such as the Garden Learning Group among household caregivers/ mothers in the village who are facing similar challenges.

You will learn more about how to create and work with these learning/support groups in Chapter 2. These 'support groups' fulfil the same functions as those used in substance abuse counselling: "People who have the same problems than me, best understand what I am going through and can provide legitimate moral support and first-hand advice. And they also need me for the same reason."

'Reaching out to others' is often an underestimated element of healing. People need to feel needed by others. This gives meaning and fulfilment to life and helps to prevent backsliding into former patterns of behaviour. It helps to keep quiet those 'voices in the head'.

The Household Food Security Self-evaluation Tool (See 'Self-monitoring' in Chapter 2) reminds food insecure people to regularly think about those activities that help them heal, as well as those around them. With this tool, the facilitator helps the household and the support group to self-evaluate their progress with improved food security, but also with improved relationships and the healing of their natural environment – and their creativity in finding solutions for all these aspects. The Food Security Self-evaluation Tool also stimulates forward-looking mind processes, to keep people's interest and commitment alive.

The role of joy, fun and laughter in healing

Joy plays a practical role in addressing all trauma (including the trauma caused by chronic hunger and malnutrition), and in the healing of relationships (family, community) as a foundation for a healthy society. A happy society is a healthy society that produces 'mature' (i.e. not just 'adult') citizens. Mature societies actively nurture the full development of its citizens, therefore healthy relationships are fundamental.

We have all experienced how joy, fun and laughter can produce incredible energy, which is why Ma Tshepo advises facilitators to "make it fun!" Singing, light-hearted banter, dancing and other joy-building activities are wonderful and useful tools in the facilitator's hands. The ability of previously hungry households to produce their own food also brings great joy to the family.

6. References

- Barnett, T. and Grellier, R. 2003. Mitigation of the Impact of HIV/AIDS on Rural Livelihoods through Low-labour Input Agriculture and Related Activities. Programme of Advisory Support Services PASS Project Code HA0036/01. July 2003.
- Bowlby, J., (1979). The Making and Breaking of Affectional Bonds. London, England: Tavistock Publications Limited. Quoted in Braun, 2003. Separation Anxiety and Attachment in Infants and Toddlers. http://www.goshen.edu/honors/braun2
- Burns, J.C.; Suji, O.W. and Reynolds, A. 2008. *Impact assessment of the Pastoralist Survival and Recovery Project, Dakoro, Niger.* Feinstein International Center, Medford.
- Dawes, A.; Donald, D. 1994. Childhood & adversity: Psychological perspectives from South African research. David Philip Publishers. 1994.
- De Castro, J. http://www.josuedecastro.com.br/engl/hunger.html
- Donald, D; Dawes, A.; and Louw. J. 2000. Addressing Childhood Adversity. New Africa Books. 2000.
- DWAF, 2007. Programme Guidelines for Intensive Family Food Production and Rainwater Harvesting. Department of Water Affairs and Forestry, Pretoria, South Africa. June 2007.
- FAO/ILSI. 1997. Preventing Micronutrient Malnutrition. A Guide to Food Based Approaches: A Manual for Policy Makers and Programme Planners. Washington DC. International Life Science Institute (ILSI)
- Jahoda, M. 1958. Current Concepts of Positive Mental Health. Ayer Company Publishers. 1999 reprint. (Also reprinted in 1980 by Arno Press Inc.)
- Kruger, E. (ed). LIRAPA. 2007. How to get the Best from your Garden: A Manual for Farmers and their Service Providers. Ministry of Agriculture and Food Security. Lesotho.
- Lappe, F.M.; Collins, J.; Rosset, P.; and Esparza, L. 1998. World hunger: Twelve myths. Second edition. Grove Press, New York. ISBN 0-8021-3591-9.
- Maslow, A.H. 1943. *The Theory of Human Motivation*. Psychological Review 50 (4), pg 370-396. http://psychclassic.yorku.ca/Maslow/motivation.htm
- Max-Neef, M.A. 1981. From the Outside Looking In: Experiences in Barefoot Economics. Dag Hammarskjöld Foundation. ISBN 1-85649-188-9. Cited on http://en.wikipedia.org/wiki/Manfred Max Neef
- Nussbaum, M. 2007. *Human Rights and Human Capabilities*. Twentieth Anniversary Reflections. Harvard Human Rights Journal. Vol 20. http://www.lawharvardedu/students/orgs/hrj/iss20/Nussbaum.pdf
- Science daily. April 10, 2008. Anticipating a Laugh Reduces you Stress Hormones, Study Shows. American Physiology Society. http://www.sciencedaily.com/releases2008/04/0800407114617.htm
- Shah T; van Koppen B; Merrey D; de Lange M; Samad M. 2002. Institutional Alternatives in African Smallholder Irrigation. International Water Management Institute.
- Steinfeld, J.I. 1956. A New Approach to Schizophrenia. MD. New York. Merlin Press, Inc. pg195.
- WRC project (K5/1575/4). 2009. Final Report: Participatory Development of Training Material for Agricultural Water Use in Homestead Farming Systems for Improved Livelihoods. Deliverable 20: Final Report. March. RIENG Rural Integrated Engineering.

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Agricultural Water Use for Homestead Gardening Systems

Resource Material for Facilitators and Food Gardeners

Chapter 1

Rural Realities and Homestead Food Gardening Options

Chapters: Resource Material

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Aims

This chapter introduces you to the realities of life in rural areas. We will also introduce different systems of farming, such as traditional farming, and high versus low external input systems, to see which approaches are likely to fit better within the realities of homestead farming.

The aim of this Chapter is to create an awareness of the issues that influence how poor rural households can use water for production in their homestead yards. To achieve this, it is necessary to first look at the rural context as opposed to the urban context, poverty issues, and rural resources, including the farming systems within which rural people live and work. Furthermore, we need to look at the 'bigger picture' – the realities of water availability and water use worldwide and how it affects us. This will support your learning and decision-making around participatory planning (Chapter 2) and water and soil management options (Chapter 4) at a homestead level. In Chapter 5, you will use this background to further explore the meaning of water management from a number of different perspectives.

What am I going to learn?

You will notice that each Chapter starts with a list of the things you should be able to do when you have successfully completed the chapter. This list will give you some idea of what to expect when you start working on the chapter, but, more importantly, you should come back to the list when you have completed the chapter to check if you have achieved all the objectives set out for the chapter. This means that you can monitor your own progress quite accurately. On the following page is the list of these outcomes for this chapter:

	What	am I going to learn?	What should I be able to <u>do</u> after completing this unit?	Done √ Can't do ×
	1	Characterise the rural context in terms of its threats and opportunities	describe the rural context in terms of its opportunities and threats	
3	2	Identify the role of water in society and in the environment	 explain the role of water in society explain the role of water in the environment 	
	3	Define poverty in terms of its causes and its impact on society	discuss the causes of poverty discuss poverty in terms of its impact on society	
,	4	Differentiate between the main farming systems in terms of their practices and outcomes	 define farming systems in terms of their different practices define farming systems in terms of their different outcomes 	
,	5	Evaluate the elements of sustainability of farming systems	identify the elements of sustainability of farming systems compare the elements of sustainability of farming systems	
4	6	Apply the use of mind mapping, flow diagrams and SWOT analysis	 apply mind mapping and/or flow diagrams as brainstorming tools apply SWOT-analysis as a planning and decision making tool 	
	7	Differentiate between the three major approaches to farming and their characteristics	 identify the three major approaches to farming discuss the characteristics of the three major approaches to farming 	
•	8	Discuss the homestead as a farming system	describe the homestead as a farming system	

Icons

You will find that several different icons are used throughout the Chapter. These icons should assist you with navigation through the Chapter and orientation within the material. This is what these icons mean:



Facilitation tools

Processes that you can use in workshop situations, to support your work in the field.



Research /Case study

The results of research or case studies that illustrate the ideas presented.



Looking at research, facts and figures to help contextualise things.



Activity

This indicates an exercise that you should do – either on your own (individual) or in a group.



Copy and handouts

These sections can be copied and used as handouts to learners / participants.

1.1 What is life like in rural areas?

Better opportunities, but serious challenges



Life in the rural areas of South Africa is not easy. Most **rural** households are poor. There is hunger, poor health, high dependency ratios, difficult

family situations and crime. More

Dependency ratios:

Number of people dependent on the person or persons in a family that earn an income.

children now attend **school** – both girls and boys – and there are more opportunities for tertiary

education. However, **employment** prospects remain poor for graduated youth, and are worse the more uneducated and unskilled a person is.

The main source of income for rural households is social grants especially **old-age grants.** (Department of Social Development, Nov. 2006). Often, extended families rely for their survival on a single grandfather or grandmother's old-age grant. Should such a person pass away the family is left destitute. More recently, the payment of a **child support and foster care grants** has brought relief. The aim of the grants was to increase the quality of life for children, and in some households this has happened. However, small children still suffer from **malnutrition.** Further, when the child turns 15, they no longer qualify for the grant, yet are too young to start contributing to family income. Families with member/s who have HIV/AIDS can apply for **care dependency grants.**

A number of large modern houses are arising among the more typically traditional homesteads in the rural areas – showing those fortunate families who have managed to improve their incomes substantially. This does not necessarily mean that the rural economy is growing. We know that the more times money, goods or services exchange hands within a village, the more the economy of that village is stimulated (Local Currency Book). However, little economic activity or value adding takes place

in most rural villages. Cash flows into the village through grants and remittances. It often flows directly out of the village again through the purchase of food and other products that are produced and purchased elsewhere. Even the foods consumed in

Remittances:

The act of sending money to family in the rural areas.

rural areas are purchased outside of the village. The maize is grown elsewhere and none of its processing and distribution contributes to the village's economy. The same applies to meat, bread, vegetables, drinks and tinned food, cell phones and other services.

In most rural areas, the agricultural activity is very low, using a fraction of the natural resource potential. Former traditions where villagers used their homesteads, cropping fields and grazing areas for family food production, have all but disappeared. It has become almost **impossible in many areas for households to use their cropping fields**, due to lack of fencing, high input costs, lack of mechanisation, increased crime levels and the disintegration of traditional rules and systems which ensured that crops in the fields were protected from roaming livestock. The threat of livestock theft is rife.



Activity 1: Life in rural areas – definitions

To make our own definitions for concepts used.

Instructions

Take the following terms and describe what you think they mean. Decide on one description for the whole group, if you are working in a group.

Rural as opposed to urban Vulnerability and risk

Dependency ratio Malnutrition

Cash based economy Value adding

Mechanisation



Activity 2: Life in rural areas – descriptions

Aim

Explore some of the concepts used in the introduction to gain a more personal understanding of what they mean to you.

Instructions

Consider one of the following statements.

- Does this statement make sense to you?
- Do you agree with the statement?
- How would you say it?

STATEMENT 1:

The aim of the child support grant was to increase the quality of life for children. Often this has not happened, as many small children still suffer from difficulties related to malnutrition. Further when the child turns 15, they no longer qualify for the grant, yet are too young to start contributing to family income.

STATEMENT 2:

Former traditions where villagers used their homesteads, cropping fields and grazing areas for family food production have all but disappeared.

What is a household to do?

Jobs are scarce... money is scarce... food is expensive... field cropping is difficult, hard work and low value. The environment has deteriorated badly, and there is little water available for agriculture...

Worldwide, poor people try to reduce their vulnerability by doing <u>more</u> and <u>different</u> things (diversification). One example of this is a study in the Eastern Cape (Minkley et al., 2006) that showed that there is now an increase in **agricultural activity in homestead yards**. This is because

<u>Reduced vulnerability:</u> Lessen chances of being more poor or destitute.

people are not able to use their cropping fields and many do not have enough money to buy even the basic goods they need.

The tremendous rise in food prices worldwide in 2008, motivated more households to start growing food. Many leading politicians and organisations are urging people to grow their own food.



In this Chapter we will investigate three different farming systems, and recommend the one we believe is most suitable for people without money. The other chapters in this resource material are also based on this basic point of departure: low cost methods, which are good for people, and for the environment.



Organic food production

For food insecure people organic food production methods make a lot of sense, because it makes it possible to grow a lot of food without having to buy expensive seeds and fertilizers.

Organic food production methods are also good for the environment because they set in motion processes that build up the environment rather than polluting and eroding it

What food can people grow at home?

- 1. The easiest way for households who want to start growing their own food, is to use the area around their homes (i.e. the homestead yard) to plant vegetables as a source of nutritious family food. Vegetables grow quickly, and if water is available, the household can grow a great variety so that they can harvest fresh food for daily use throughout the year.
- 2. In season, most families also plant some <u>maize</u> (staple food) in the yard, but often there is not enough space to harvest enough for the maize meal needs for the whole year.

fruit trees, poultry and small livestock.

Green maize is also a favourite vegetable. Prof Marais of the University of Fort Hare (Eastern Cape Province) developed a planting programme, which enabled him to harvest green mealies (different varieties) right through the year at his

home in the Eastern Cape.

Diet diversity for good health

Different types of vegetables can supply different diet needs, like:

- Important micronutrients (especially deep-coloured vegetables);
- Starches (potato, sweet potato); and
- Non-meat protein (legumes, peas, beans, peanuts).

In Chapter 3, we will see how the family can plan their gardening to eat healthy, balanced meals every day to overcome malnutrition.

Malnutrition:

Absence of certain foods or essential elements necessary for health this results in illness or death

When possible, people barter or sell surplus produce to boost family income.

3. Over time, households can diversify their homestead food gardening by adding

Vegetables are often given away as gifts, which helps strengthen social bonds of goodwill (social safety nets). This plays an important role as a social buffer for the family when they may



These days we no longer have time to gueue every month for the grant payouts. They now pay it into our bank accounts so that we can use the time to work in our gardens.

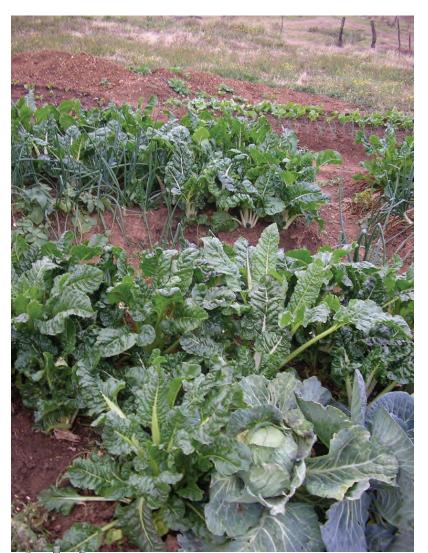
Some households also try out various ways to preserve their excess produce, mainly through drying or bottling.

When people discover that they can also sell some of these preserved foods, this encourages them to find more ways to add value and earn some extra cash.



The homestead is preferred for food gardening over field cropping for several reasons, including the following:

- It is easier to protect against animals and theft. The yard can even be fenced in, often using a combination of available materials, scrap metal and fast-growing hedge-forming plants;
- People spend most of their **time** in and around their homes, often caring for the sick. Being able to produce without the need to walk long distances to the fields, is a clear advantage; and
- It is easier to intensify production close to the house, where it is easier to collect organic matter, vegetable peelings, and animal manure from livestock pens in the yard.





Intensification

Through intensification, people's production efforts become worthwhile, which encourages them to keep up the effort.

My whole family helps me in the garden now, because it is "double-double":

Double because we can now grow food in both summer and winter, and double again, because our yields are so much higher with these methods."

- Andile, Upper Ngqumeya, Eastern Cape, 2007.



Aim

Make our own definitions for concepts used.

Instructions

Take the following terms and give an example that will show what this term means.

- Diversification
- High value crops
- Staple food
- Nutritious food
- Social safety nets
- Intensification of production

Is home food production worthwhile?

Is it worthwhile for the country?

Household expenditure patterns

The Department of Social Development and Welfare spent R75.3 billion on comprehensive social security (Kruger, 2009). The purpose was to provide income support to the elderly, the disabled and children in need through social assistance grants as provided for in law.

Specific activities included the following:

- Providing social assistance to all eligible beneficiaries, notably the old aged in rural areas:
- Providing child support grants, foster care grants and care dependency grants;
- Improving income security for workers and their dependants by means of the Unemployment Insurance Fund; and thereby
- Improving the access of household beneficiaries of social assistance to economic opportunities.

How can home food production help to make this significant state investment more effective?

According to the national income and expenditure survey (National Income and Expenditure Survey, 2007), 36% of poor households' income is spent on buying food.

If the state should invest an amount of R2.3bn (equal to 3% of the annual social security budget) in support of home food production, this would enable about 60 000 new households every year to start saving money on food, and invest in family development instead. Almost a million households could be reached over a 15-year period.



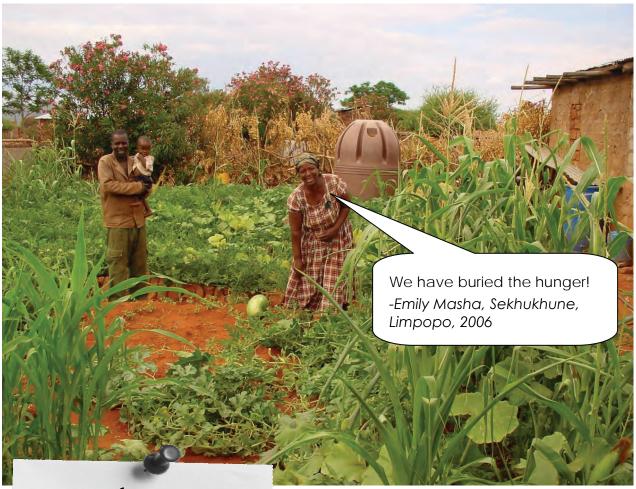
Household expenditure patterns

Every amount a household can save on food expenditure, they can instead spend on overall improvement of their livelihood. This increases the effectiveness of the social assistance provided by the state and injects cash into the local economy.

Livelihood:
"A means of living".

The importance of balanced nutrition to the country

Homestead food gardening makes economic sense in financial terms. It also addresses – very directly – the problem that a quarter of all South African children's growth is stunted through malnutrition before they reach the age of five. Stunting means that such a child will never reach its full physical and mental potential in life. This could create a vicious poverty cycle when following generations suffer the same fate.



Homestead food gardening...

...enables mothers to ensure that their children get a balanced diet. This helps the children to reach their full potential. This in turn is good for the country's economic growth potential. In South Africa, malnutrition is caused predominantly by a lack of micronutrients and protein in the diet and both these can be found in vegetables and root crops that can be grown in homestead food gardens.

In Chapter 3, we will look in more depth at how homestead food gardening can help people to live and eat healthily – whether they have money or not.



Copy and handouts 1: Is homestead food production worthwhile?

People often stop gardening as soon as they get formal employment, and this makes good sense if they can earn a good income. However, once people have been successful at intensive homestead food production, they always have the confidence that they can return to it should circumstances change for them. Some people manage to continue growing some food at home, even while working fulltime. In Countries like Kenya, this is an established culture.

For poor people with limited resources cannot afford to take risks. Homestead food gardening often provides a manageable starting point from where they can grow.



Case study 1: The power of starting small

Eva Masha was the first person in her area to build a large underground rainwater tank for homestead food production. This was part of the Water for Food Movement (Ainslie, 2006) for food insecure households. When Eva became known for her success, she was offered a plot on the irrigation scheme in her village. She declined, saying: "I have not yet finished implementing my five-year plan for my own yard, and anyway I don't have time to sit in meetings" – which as a person who lived her lifetime in a village on an irrigation scheme, was her perception of participation in formal irrigation.

The sequel to her story is that she has since completed her work in her own yard and has now joined together with 7 or 8 other women in their own joint irrigation project of some 8 hectares.

Eva's humble beginnings in her own yard gave her the know-how and confidence to embark on larger initiatives – on her own terms.



I used to think I am poor, now I know I have my ten fingers.

-Eva Masha, Strydkraal, Limpopo, 2003.



Case study 2: The freedom to work from home

Ntombulundi Zitha and others in Eastern Cape have expanded quickly from a humble start in their backyards, and are still growing.

Ntombulundi had her bags packed, waiting at the door, putting off the inevitable: that she had to leave Ngqumeya and go to East London (some 2 hours' drive away) to look for a job. She would have to leave behind four children and an ailing mother, not at all certain that she would find a job.

At that time the Border Rural Committee (BRC) and Umhlaba introduced the 'Water for Food' project. This included demonstration of homestead food gardening using the method of deep trenching with run-on. It was followed by the demonstration of underground rainwater tanks (30 kl) for 3 households in March 2006. Ntombulundi was one of these 3 people who were assisted to build her own tank.

Two years later, Ntombulundi has expanded her garden to probably 200 m². BRC has helped her and other households to start selling their produce in Keiskammahoek and even East London. The group now also has a small shadecloth nursery to grow their own seedlings, which is on Ntombulundi's yard.

200 m²:

Is equal to an area 20 meters long and 10 meters wide.



Impact of homestead food production on livelihoods

A survey was conducted in Potshini (Mudhara et al., 2008) to look at the impact of homestead food gardening. They noticed a number of interesting points:

- 1. The actual **income generated** from a garden averaged R50-R100/month. While this sounds like a very small amount to a salaried person, it becomes more and more significant the lower the income bracket the household finds it in. For instance, an additional R100/m would constitute a 50% increase for households who survive on R200/m.
- 2. Other livelihood advantages found in Potshini, included **savings** of around R100-R300/month. These savings (money now not spent on food) increased the household's ability to buy other things. It solved many problems related to hunger and access to food.

I have made a good income from selling vegetables. Now I can feed my own children as well as help out with other children who need food. I now feel secure living here and do not have one foot in the taxi all the time.

-Sizakele Mduba, Potshini, KZN



Below is a summary of people's comments about the contribution of garden produce to their livelihoods in Potshini, Bergville, KZN in 2007 (Sturdy, JD, Jewitt, GPW, Lorent, SA. 2009).

Households' comments on the impact of gardening on their lives

- 1. We don't go hungry anymore and sell to the community.
- 2. We did not spend a lot of money on vegetables this year and had surplus to give to neighbours.
- 3. I saved money as there is spinach in my garden and I do not need to buy vegetables.
- 4. I got a lot of spinach and tomatoes. My family does not like the other vegetables.
- 5. I have food for my kids now.
- 6. Spinach and greens are always available.
- 7. We stopped buying vegetables for a while as we had our own.
- 8. I saved money that I used to buy vegetables with and sold the surplus. I have been able to buy a TV for my kids.
- 9. I got a lot of food for my family.
- 10. I do not need to go to the shop.
- 11. I had a lot of green peppers, but as people here do not know them, I could not sell them.
- 12. Hearnt how to grow and store tomatoes.



Members of our learning group have grown enough vegetables to sell.

We have expanded our gardens, intensified our production and tried new kinds of vegetables.

People who were not involved in the learning group have not done this and have not grown a lot of food.

We sell mainly to them.

Since they started their intensive gardens, 63% of the learning group members Have said that they have More money for things and can now save some money.

I make an income of between R100-R300 from my garden in a season.

I have also worked out that I can save up to R1 000 in a season from using my own vegetables instead of going to town to buy food.

Garden Learning Group members, Potshini, KZN. Photos: E. Kruger, 2008





Case study 3: Augmenting household food and income

Mr Palaza from Ngcobo, Eastern Cape has kept an accurate record of sales of vegetables from his home food garden, in a small notebook, which he – very significantly – calls 'my book of water' and 'my book of life'.

According to his records from 14 November 2005 up to 28 April 2006, he has earned R660.50 from vegetable sales. This is an average of R120 per month. In 2006, this would have been equivalent to a 15% increase in total cash income for a household depending on an old-age pension of R800 per month.

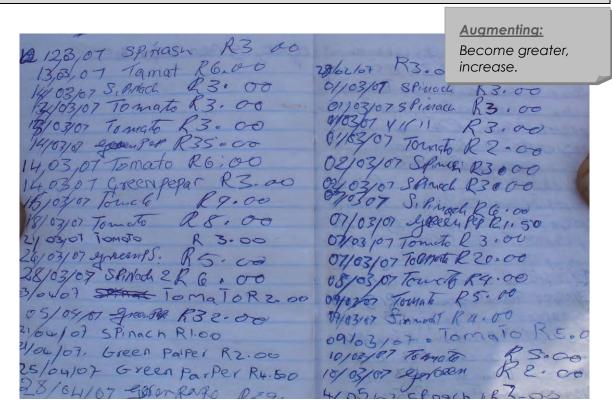
Although this was only his first season of production, he was already growing a good variety of vegetable crops, which meant that his household enjoyed much greater diversity in their diet. His crops included deep coloured vegetables like tomato, green pepper, spinach and beetroot, as well as squash and cabbage.

He also kept a daily record of rainfall, and measured a total of 498 mm over a sevenmonth period from 4 October 2005 up to 21 April 2006.

Looking at the rainfall records, we see that there were two dry spells during this rainy season – one in January and one in February – and both lasted for about three weeks. The water stored in the rainwater-harvesting tank would have prevented damage to the crops during these dry periods.

The stored water would also enable him to keep on growing vegetables during the dry winter season.

It is particularly heartening to see such accurate and useful records being kept by a rural household. To measure is to know!



1.2 The natural environment in rural

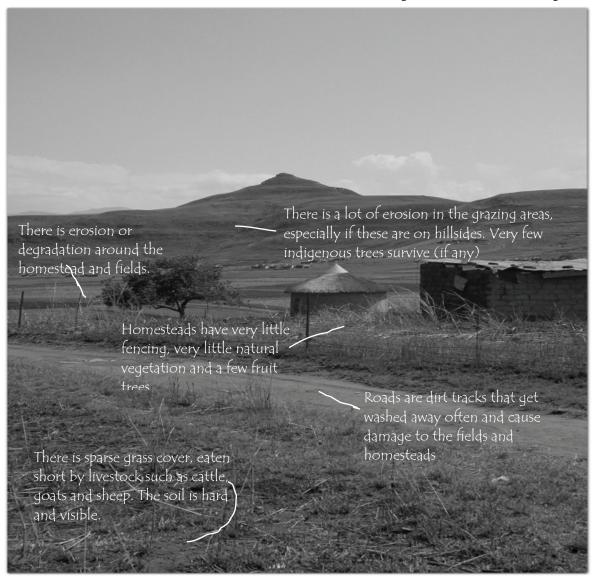
villages

Degradation everywhere

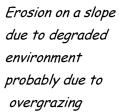


When we go to communal areas where smallholders live, we are generally confronted with a picture similar to the one below. Many of us may have got used to this picture, as it has been happening over a long period of time.

Potshini, Bergville, KZN. Photo: E Kruger 2006



The trend has been one of too many people having to rely too heavily on available natural resources such as land, water, grazing, firewood and medicinal and other plants. This has led to the degradation of the natural environment from over-use; a systematic decline. This degradation could have its roots in the poverty of the rural inhabitants, whose immediate needs outweigh the needs of their environment.





In the commercial farming areas of South Africa, environmental degradation is also visible and often relates to pollution through the overuse of chemical fertilisers and pesticides, degradation and/or loss of topsoil due to overgrazing and bad farming practice. There is loss of biodiversity. This is probably due to the demand for immediate financial returns and due to the battle for survival common to all farmers. In the long-term the combined effects of increased production costs and decreased

product prices has made farming less and less profitable. The immediate needs of the farmers outweigh the needs of the environment.

<u>Biodiversity:</u>
Diversity of plant and animal life.



When fertilizers wash into open watercourses, algae may grow on the water surface due to the oversupply of nutrients in the water. This reduces the oxygen levels in the water and can lead to death of fish and other life and thus loss of biodiversity.

Processes to rebuild our environment

Our environment cannot support us if we do not support our environment. We cannot continue to take without giving back. We need to start working within processes of **systematic rebuilding of our environment**.

This means different things to different people. Let's look at what Mr Maphumulo thinks. He is a farmer in a communal area known as Umbumbulu in southern KwaZulu-Natal.





Copy and handouts 2: Processes for systematic rebuilding of our environment.

Some of the 'rebuilding processes' that supports our environment which in turn support us in our homestead food gardening are:

- 1. Finding a balance between our needs and the needs of the natural environment;
- 2. Working co-operatively with other people, so that we can find these balances together;
- 3. Building our soil using organic methods;
- 4. Increasing the water holding capacity of our environment by slowing down, catching and letting water sink into the soil, controlling erosion and protecting springs;
- 5. Diversifying our production to better suit our needs and those of our livestock;
- 6. Increasing the biological diversity in our environment so that natural balances can be restored; and
- 7. On a small scale in our gardens, mimicking natural processes that affect our larger environment.



Activity 4: Processes for systematic rebuilding of our environment

Aim

Is to deepen our understanding of the main elements of supporting natural processes, and to rebuild a healthy environment.

Instructions

Look at the numbered points in the paragraph above this activity. For each point, try and think of some examples that you may have seen or think would work for the 'rebuilding process' mentioned.

For example:

- 1: Manage the cutting of firewood to allow re-generation of trees do not kill them.
- 1: Keep cattle numbers down to ensure there is always grass cover in the veldt.
- 1: Balance the number of cows you own with other small livestock such as goats, sheep and poultry.
- 1 and 5: Grow fodder for livestock to eat in winter, so that they do not have to denude their environment.
- 3: Add organic matter to your soil to build you soil fertility.

5, 6 and 7: Grow many different kinds of fruit trees, for your family needs and to increase the natural diversity. You will find many birds and insects coming to your garden that you have not seen there before.
Add more of your own

1.3 The water situation

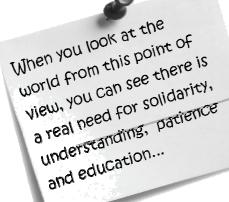
Our world in context



If the population of the Earth was reduced to that of a small town with 100 people, there would be:

- 4 61 Asians
 - 13 Europeans
 - 14 Americans (northern and southern)
 - 12 Africans
- 52 women
 - 48 men
- ♦ 6 people would own 59% of the whole world wealth, and all of them will be from the United States of America
- 80 would have bad living conditions
 - 70 would be uneducated
 - 0 underfed
 - 1 would die
 - 2 would be born
- 1 would have a computer
 - 1 (only one) will have higher education







Also think about the following:

This morning if you woke up healthy, you are happier that the 1 million people that will not survive this week due to illness;

If you never suffered a war, the loneliness of a jail cell, the agony of torture or hunger, you are happier than 500 million people in this world;

If you can enter into a church (or mosque) without fear of jail or death, you are happier than 3 million people in the world;

If you have food, shoes and clothes, abed and a roof over your head, you are richer than 75% of the people of the world.

Water use in the world



Water is the source of life and human civilization. Now, the Earth, with its diverse and abundant life forms, including over six billion humans, is facing a serious water crisis (Population Action International, 2002).

Water

Maybe it is the single resource that defines the limits of sustainable development.

Water covers about 70% of the earth. Only 2% of this is fresh water. Although the amount of freshwater remains about the same from year to year, it is continually renewed through the water cycle, which is powered by sun's energy and the earth's gravity. No new water enters the cycle and no water ever leaves the cycle.

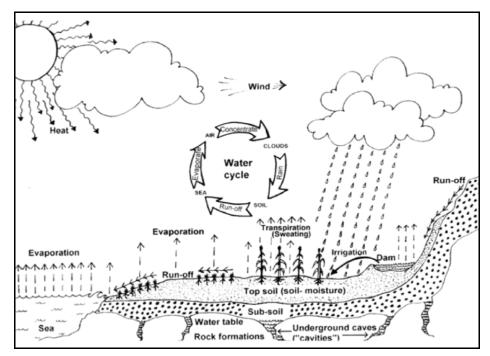


Figure 1: The Water Cycle

Worldwide, 54 % of the annual available freshwater is being used. If consumption per person remains steady, by 2025 we could be using 70% of the total because of the projected population growth alone (UNFPA, 2001).

Table 1: World Population by Region (in millions)

Year	Africa	Asia	Latin America & Caribbean	Oceania	Europe	North America	Global
1990	615	3 180	441	26	722	282	5 266
2000	784	3 683	519	30	729	310	6 055
Increase (%)	27.5	15.8	17.7	15.4	1	9.9	15

(Source: WHO/UNICEF, 2000)

From the table above, we can see that in the year 2000, Africa had the second-largest population of all the world regions (only Asia had more people). More importantly, Africa's population was growing much faster than in any other region – by 27.5% in the ten years from 1990 to 2000. Such rapid growth makes it very difficult to provide for the additional demands on resources and infrastructure in the region – including water.

The availability of water varies considerably between countries and within countries. Water availability is also affected by droughts as well as inappropriate water management programmes (Ambala, 2002). Veld management has a significant

effect on available soil water. If overgrazing is allowed and areas become stripped of vegetation, less rainwater is absorbed into the soil, flash floods with erosion occur and vegetation regrowth is inhibited. On a large scale, this will impact on weather patterns (Winpenny, 1999). Less soil moisture means that less water is available for the local water cycle.

Inhibited:
Slowed down or stopped.

The water available for human use is also becoming less because of pollution from agriculture and industry. Due to pollution, water in many rivers, dams, lakes and **groundwater sources** (underground water) can no longer be used for human **consumption** (Livernash and Rodenburg, 1998:34). In developing countries, 90-95% of sewage and 70% of industrial wastes are dumped into surface water where they pollute the water supply.

The water situation in South Africa

South Africa is a hot and dry country. The average annual rainfall is less than 500 millimetres per year, compared to the world average of 860 millimetres. South Africa's rainfall is insufficient:

- Firstly, because it is hot and dry, more water evaporates into the air than falls as rain; and
- Secondly, the rainfall is erratic and unreliable. Prolonged drought at critical stages of crop production occurs frequently. Dry land cropping is therefore quite risky.

 Dry land cropping:
 Crop farming which is

Agriculture and forestry use 74% of South Africa's potentially available rainwater. By far the largest volume of this, 60%, is used to Crop farming which is dependent on rainfall, i.e. lands that are not irrigated.
Also called rain fed cropping.

maintain the growth of forests and the natural vegetation that is utilised as grazing for livestock and game, while 12% is used for rain fed cropping. Only 2% of the country's potentially available rainwater is used for irrigation (National State of the Environment Report – South Africa, 2002). The average runoff (rainwater that runs off the surface into our rivers, rather than sinking straight into the ground) for the country is around 8.5%. Irrigation is the largest single user of runoff water in the country.

According to the National Population Unit in South Africa, all major rivers have been dammed or modified to meet the demand for water, reducing water flow, causing many rivers to become seasonal (e.g. the Limpopo, Luvhuvhu and Letaba rivers) and reducing the productive capacity of flood plains such as in the Pongola area (National Population Unit, 2001:33). Many of the issues around access to water also have to do with how water is managed.



Activity 5: Water use exercise

Aim

To understand the proportions of rain water available for different uses.

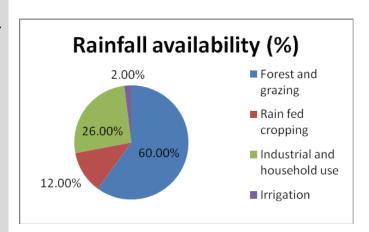
Instructions

Make a note of the percentages (%) of water that you think are available in your area for:

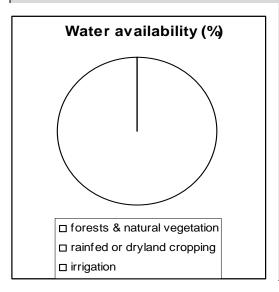
- Forests and natural vegetation
- rain fed or dry land cropping
- irrigation

Now make a pie chart to represent these percentages.

How to make a pie chart (example):



Now use your percentages and fill them into the pie chart given below:



Policies related to water

International policies



Of all the major target-setting events of recent years, the United Nations (UN) Summit of 2000, which set the **Millennium Development Goals** (MDGs) for 2015, remains the most influential. Among the goals set forth, the following are the most relevant to water:

Millennium Development Goals related to water

- ❖ To halve the proportion of people suffering from hunger;
- ❖ To halve the proportion of people living on less than 1 dollar per day;
- ❖ To halve the proportion of people without access to safe drinking water;
- To ensure that all children, boys and girls equally, can complete a course of primary education;
- ❖ To reduce maternal mortality by 75 percent and under-five mortality by two thirds;
- ❖ To halt and reverse the spread of HIV/AIDS, malaria and the other major diseases; and
- ❖ To provide special assistance to children orphaned by HIV/AIDS.

All this needs to be achieved while protecting the environment from further degradation. The UN recognized that these aims, focusing on poverty, education and health, cannot be achieved without adequate and equitable access to resources. The most fundamental resources are water and energy.

The Hague Ministerial Declaration of March 2000 adopted seven challenges as the basis for future action. These provide broad actions for reaching the MDGs:

The Hague Ministerial Declaration

- Meeting basic needs for safe and sufficient water and sanitation.
- Securing the food supply especially for the poor and vulnerable through the more effective use of water.

Ecosystem: A biological community and the physical environment associated with it.

- Protecting ecosystems ensuring their integrity via sustainable water resource management.
- Sharing water resources promoting peaceful cooperation between different uses of water and between concerned states, through approaches such as sustainable river basin management.
- ❖ Managing risks to provide security from a range of water related hazards.
- Valuing water to manage water in the light of its different values (economic, social, environmental, cultural) and to move towards pricing water to recover the costs of service provision, taking account of equity and the needs of the poor and vulnerable.

Governing water wisely – involving the public and the interests of all stakeholders.



Activity 6: Defining the role of water

Aim

To build understanding of some of the issues involved in the management of water as a scarce resource.

Instructions

Read through the paragraphs in the note below.

- Describe in your own words what these paragraphs mean to you.
- Try and think of examples of better water management in a rural context in South Africa.
- Also give a few examples of what a new attitude towards water management would be.



Water is a scarce resource:

There is no doubt that water is a scarce resource and that demand will increase in the future. What will society do about this?

A key solution is to change to better management of water resources. There needs to be a new attitude to water management, based on scientific knowledge, but also including cultural and ethical values.

Water policies in South Africa

South African water policy is viewed as some of the most progressive in the world. Water law was comprehensively reviewed after the regime change in 1994. The current water policy is based on the constitutional principles of efficiency, sustainability and equity. It is also based on scientific principles and cultural, ethical values.

At the 2008 international water exhibition in Zaragoza, Spain, South Africa was still one of only a handful of countries which recognises water as a basic human right, and gives effect to this right through its policies and implementation programmes.

Some of these policies will be dealt with in more detail in Chapter 5: "Home garden layout and household water management".

Table 2: Water policies most directly relevant for homestead food gardening:

POLICY	RELEVANCE
Schedule 1 of the National Water Act (Act 36 of 1998):	Allows freely, without the need for licensing, the use of water from streams and other sources people have legal access to, as well as rainfall run-off, for home food production.
The 'Water Reserve':	The only 'right' entrenched in the National Water Act is water for the environment, and water for basic human needs. Current policy allows for an amount of 25 litres per person per day for basic human needs. There is strong advocacy to increase this amount, especially to enable economic activity of poor households. (See Case study: 4 below.)
Free Basic Water:	Municipalities are required by law to provide 6 000 litres per household per month free of charge as a 'lifeline' amount.
Subsidy to support homestead rainwater harvesting through the 'policy on support for Resource Poor Farmers':	Through this policy, a subsidy is provided for household training in intensive home food production and rainwater harvesting, as well as water storage infrastructure in the homestead yard. Water can be stored in underground tanks, roof water tanks and in the soil profile.

Water demand and supply in South Africa

The total 'non-urban' population for South Africa was around 12.7 million in 1997. The total population was 41 million people. Therefore the non-urban population comprised 31% of the total population (Rural Survey, 1997). Since then, the total population of South Africa has increased to about 48 million people.

Table 3: Non-urban population by category, province and sex (000s)*

Duos		Total		Rural fo	rmer ho	melands	Semi-	rural sett	lement
Prov	Total	Fem	Male	Total	Fem	Male	Total	Fem	Male
EC	3 677	2 013	1 664	3 368	1 843	1 525	305	169	136
FS	299	163	137	281	153	128	19	10	9
KZN	1 778	980	797	1 695	939	755	83	41	42
Mpum	1 078	578	500	976	521	455	102	57	45
NW	1 813	939	874	1 625	847	778	188	92	96
Limp	4 084	2 252	1 832	3 562	1 952	1 610	515	297	218
Total	12 729	6 925	5 804	11 507	6 255	5 252	1 211	665	546

*Note:

(000s) mean that you have to multiply the figures in the table by 1000 to get the correct figure. For instance, total rural population (total of first column) is 12 729 000 people.

Most of South Africa's non-urban population live in the deep rural areas of the communal land tenure areas (11.5 million people). In the Eastern Cape (303 000) and in Limpopo (515 000), a significant number of people live in semi-rural settlements.

Service provision of to such remote areas is very difficult, and is now the responsibility of wall-to-wall municipalities with responsibility for rural and urban sectors. These municipalities were created in 1994. They have multiple functions and responsibilities but often lack resources to fulfil their mandates.

Females are in the majority in the rural areas of all provinces. We know that in most rural households, the 'household caregiver', namely the person responsible for planning and preparing meals, is the mother or grandmother. However, some households are 'child-headed', meaning that there are no adults in the household who can fulfil this role.

The availability of water for all purposes

Table 4: Distance from homestead to water: Number of households (000s)

D'ataura	To	otal	E C	ape	FS	tate	K	ZN	Mpum N We			Vest	est Limp	
Distance	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Inside dwelling	514	21.8	61	8.6	18	26.4	22	8.7	100	50.0	81	22.9	232	30.2
Less than 100 m	420	17.8	119	16.7	32	46.6	17	6.7	38	18.8	83	23.5	131	17.0
100 m-> 200 m	419	17.8	131	18.4	14	20.3	53	20.9	31	15.4	89	25.1	101	13.2
200 m-> 500 m	396	16.8	131	18.3	4	6.1	84	33.2	21	10.5	58	16.4	98	12.7
500 m-> 1 km	310	13.2	143	20.1		0.5	58	22.9	6	3.2	30	8.3	73	9.5
1 km or more	298	12.6	127	17.9		0.1	19	7.6	4	2.1	13	3.6	134	17.4
Total	2,356	100	712	100	68	100	253	100	199	100	354	100	769	100

The table above reflects the position in 1997. No less than 42.6% of the 2.4 million rural households had to fetch water from further than the prescribed two hundred metres.

Although the Department of Water Affairs and Forestry and Municipalities continue with the campaign to provide potable tap water to all rural dwellers many still struggle daily with water for drinking, water for cooking and water for growing things. Availability of water is a problem that many homestead food gardeners are faced with.

Agriculture and income

An interesting question formed part of the 1997 rural survey questionnaire, namely: 'Did this household spend at least 1 hour per week on 'agriculture'?'

One hour per week hardly qualifies a person as a food gardener, let alone a farmer! This is a clear indication that "agriculture" is not one of the prime concerns in the rural villages and that there are relatively few "farmers" amongst the village residents. This was confirmed by the finding that only 2,7% of households identified farming activities as their most important source of income. These are villagers (rural residents) and very few of them are farmers!

Nationally, in the month prior to the survey, 750 000 rural households had a **household income** of less than R400, and 1.5 million (65%) had less than R800. At the other end of the scale, 230 000 (10%) had incomes of over R1 500/m.

A perturbing statistic is the 280 000 (12%) households that were estimated to have an income of less than R200 per month. The impact of homestead food gardening discussed in section 1.2 above, would be of greatest value to households in these lowest income categories, and would generally be of less direct interest to households in higher income categories.

Table 5: Household income after tax in month prior to survey by province

N. C.	To	tal	EC	ape	FS	tate	K	ZN	Mpum NW			Lii	Limp	
Net income	N	%	N	%	N	%	N	%	N	%	N	%	N	%
None	53	2.3	12	1.6		0.5	7	2.6		0.1	11	3.2	23	3.0
R1-200	226	9.6	70	9.8	10	14.8	16	6.4	15	7.4	47	13.2	68	8.8
R201-400	468	19.9	109	15.2	16	24.0	40	15.7	30	15.1	86	24.3	187	24.4
R401-800	789	33.5	227	31.9	24	35.5	110	43.5	73	36.4	100	28.2	255	33.1
R801-1 500	588	24.9	217	30.5	13	19.0	61	24.1	61	30.5	78	22.0	158	20.6
R1 501-3 000	182	7.7	61	8.6	4	5.7	13	5.0	17	8.4	28	7.8	59	7.7
R3 001-6 000	44	1.9	16	2.2		0.3	6	2.3	3	1.7	4	1.0	15	2.0
R6 001-12 000	5	0.2	1	0.1		0.1	1	0.3	1	0.3		0.1	3	0.4
R12 001+	243	0.0		0.0		0.0		0.0		0.0		0.1		0.0
Unspecified	769	0.0		0.0		0.0		0.0		0.0		0.0	1	0.1
Total	2,35	100	712	100	68	100	253	100	199	100	354	100	769	100

It is important to note that in the 1997 Rural Survey, no account was taken of the value of food gardening or other produce to livelihoods. Therefore, we still have an incomplete understanding of the actual and potential contribution of homestead farming to households in South Africa.

Further, the unprecedented rise in food and fuel prices in 2008 has motivated many more households to 'return to the land' and grow more of their own food. This crisis convinced many people at all levels in society of the importance of home food production for poverty alleviation.



Activity 7: Analysing different rural contexts

Aim

To use the information provided in the tables and the section 'Impact of homestead food production on livelihoods' (see p12 above) to analyse the situation in a specific province.

Instructions

A. Summarise the information for you area about the size of the population,
availability of water and income from the three tables in this section, in a way that
makes sense to you.
Make at least 5 statements about this information.

<u>For example</u>: Limpopo has the largest rural population at 3,56 million people and also the largest percentage of that population who live off an income of R201-R400/month, namely 24.4%.

1	
2	
3	
4	
5	

B. Now use the information on p12 on 'Impact of homestead food production on livelihoods'. Make a small table that shows how homestead food gardening can affect the income situation for your province, for all the income categories.

[NOTE: You will need to make a table here and work out the percentage increase in income that a homestead garden can provide – for each income category.

Income category	What is the effect of gardening for each income category
None	
R1-200	Example: It means that this person now has 3 times more income.
R201-400	
R401-800	
R801-1 500	
R1 501-3 000	
R3 001-6 000	
R6 001-12 000	

The potential role of water in poverty alleviation

Being poor is an unfortunate reality for millions of people worldwide. There are many factors that contribute to people becoming poor and then remaining poor. Poverty is affected by how countries and governments manage themselves, and how other countries and governments affect them. The causes are therefore what we may term structural and global. Below is an exercise that can give you some clarity around your own beliefs about poverty and how it is caused.



Activity 8: Causes of Poverty

Aim

To build understanding of the causes of poverty and the values and beliefs related to poverty.

Instructions

Go through the worksheet provided below on causes of poverty (Timmel and Hope, 1984). Do this as individuals first, and then in groups. In the group you will need to negotiate which causes you think are more important, according to what you said as individuals.

Write one page on your understanding of the causes of poverty in the area that you live in or come from.

Make some suggestions, at least 2, of what you think needs to be done and what people in your area can do, or are already doing, to alleviate poverty.

No.	Individual ranking	Cause of Poverty	Group Ranking
А		Unemployment	
В		Unfair distribution/shortage of land	
С		Drought/lack of rain	
D	D Lack of sustainable education and training		
Е		No decision-making power for the poor	
F	F Women and children deserted by fathers		
G		No trade unions, or ineffective unions, so low wages	
Н		National debt and economic structural adjustment	
1		War and unrest	
J		Over-population	

Chapter 1: Rural Realities and Homestead Food Gardening Options

No.	Individual ranking	Cause of Poverty	Group Ranking
K		Lack of personal initiative	
L	Wealth and power concentrated in the hands of a few		
М		Low prices for exports, expensive imports	
N	N Corruption		
0	O Banks and multi-national companies which export		
Р	P Capitalist development		
Q		Production of cash crops for export, not local use	
R	R Destruction of environment (trees, soil, water)		
S		Lack of technology	
T		Other – name	

The importance of water for household productivity

In a groundbreaking study in Bushbuckridge, the Association for Water, Agriculture and Rural Development (AWARD) found that villages with more than RDP levels of water supply, had **double the level of local economic activity** compared to villages where only 25 litres per person per day was available to households.

This finding shows the importance of water as an <u>enabler</u>, if not <u>catalyst</u>, for development at these poorest levels of society.

This finding by AWARD has helped to change our thinking in South Africa about the importance of 'water for productive uses for the poor', and helped to change some of the policies of the Department of Water Affairs and Forestry to be more 'pro-poor'. AWARD's finding, was also one of the cornerstones that lead to a new worldwide concept called Multiple Use Systems (MUS) for water supply planning.

The experiences of Eva Masha (see Case study 1 of this chapter) and that of Ntombulundi Zitha (see Case Study 2) show that a critical resource for both these women to start and expend their homestead food gardening into little businesses was the water tanks that were built. The water enabled them to grow their own food and to produce extra to sell.

1.4 Choosing a suitable farming system for rural homesteads

Elements of sustainability

In this section we will introduce concepts that will help you to compare different farming systems, and to think about their implications. 'Farming systems' are the different ways in which farming is undertaken. There may be different reasons, different practices and different outcomes for each farming system.

Here, as with everything else, there are human values and principles that underlie each different farming system. We need an understanding of these values to understand the system.

The main element that we would like to use here to analyse farming systems, is **sustainability**. This is a measure or indication of whether a system can maintain itself now and in the future, in a way that is not damaging, firstly to itself, and secondly to its broader surroundings. Below is a game we can play to explore the concepts in sustainability.

Below, the five elements that need to be considered when analysing a system for its sustainability, are explained:

❖ Economically viable:

Farmers produce at an adequate and stable level and at a risk level, which is acceptable to them.

Ecologically sound:

The quality of the environment is maintained or enhanced, and natural resources are conserved. Ecologically sound agricultural systems are healthy and highly resistant to stresses and shocks.

Socially just:

The agricultural system ensures equitable access to land, capital, information and markets for all people involved, whatever their socio-economic position, sex, religion or ethnic group.

Humane:

All forms of life (plant, animal, human) are respected and treated with dignity.

Adaptable:

Sustainable rural communities are able to adjust to constantly changing conditions, such as population growth, new policies and market demand.



Facilitation Tool 1: The Nuts Game (Van Veldhuizen et al.,1998)

Aim

To build an understanding of the elements of sustainability

Instructions

A small group (4-5 people) of players gather to sit around a bowl containing 25 nuts. The rest of the group gathers around to watch them. The spectators may not interfere in the game or make comments.

GOAL: Each player's goal is to get as many nuts as possible during the game.

<u>RULES</u>: Upon the organiser's signal, the players take out nuts from the bowl – all at the same time, but using only one hand. This makes one "round". Players should remain quiet throughout the game. The organiser doubles the number of nuts left in the bowl, after each round, up to the maximum of 25 nuts. The game is over when the bowl is empty, or after 10 rounds. During the game, the harvest (number of nuts gained by each player in each round) is recorded. At the end of the game, the total harvest per person and the group total are recorded.

After the game the following questions are discussed in plenary:

How did you feel about the game?

What happened in the game?

What do you think does the game represent?

What did you learn during the game?

Make a list of the elements of sustainability that came out of your discussion.



Facilitator's Note:

Important items for discussion in Facilitation Tool 1 above are co-operation, self-restraint and trust, the regenerative capacity of natural resources, depletion, total harvest, and equity in division of harvest.

In this game, the bowl symbolizes the resource pool, the nuts the resources themselves, and the replenishment cycle represents the natural rates of resource regeneration.

From: Developing technology with farmers. Van Veldhuizen et al.



Facilitation Tool 2: Elements of sustainability

Aim

To build understanding of the elements of sustainability

Instructions

In groups of three, brainstorm your understanding of the elements of sustainability. Then report to plenary (the big group).

Present your finding as a **mind map** or a **flow diagram**, after looking at the examples provided below.

MIND MAPPING

<u>Purpose</u>: To cluster or put together similar ideas, to see the links between them and pick out the most important issues when discussing or brainstorming. This is a good way of making sure all aspects of a situation have been considered.

<u>Description</u>: On newsprint or a whiteboard, start with the central issue or question and then build a dendogram (like a tree) of ideas from the central questions. You can put down the most important things first and then build on these.

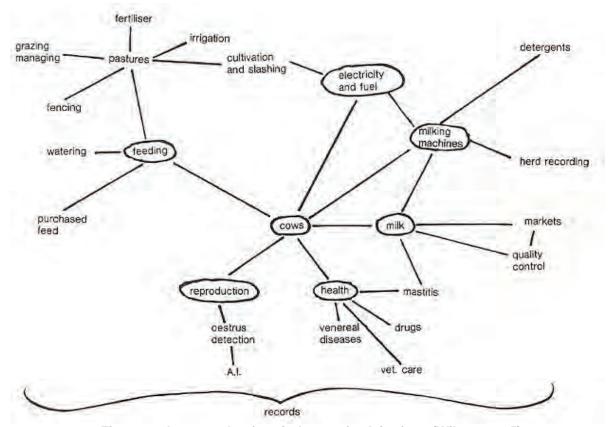


Figure 1: An example of a mind map of a dairy farm (Wilson, 1995).

FLOW DIAGRAMS (Van Veldhuizen et al., 1998).

<u>Purpose</u>: To illustrate and analyse the consequences (positive or negative) of particular issues or actions, using diagrams.

<u>Description</u>: Take the action to be considered and map out the steps that need to be taken and the factors that need to be taken into account.

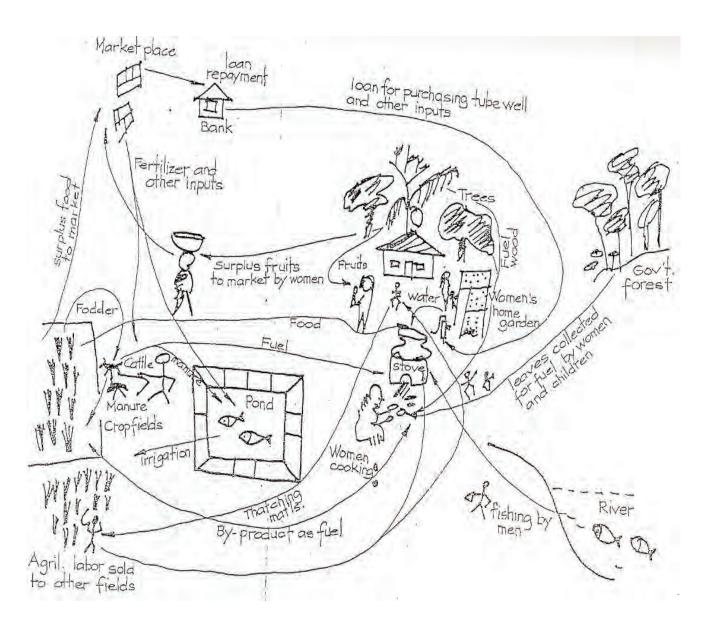


Figure 2: An example of resource flow in a homestead farming system

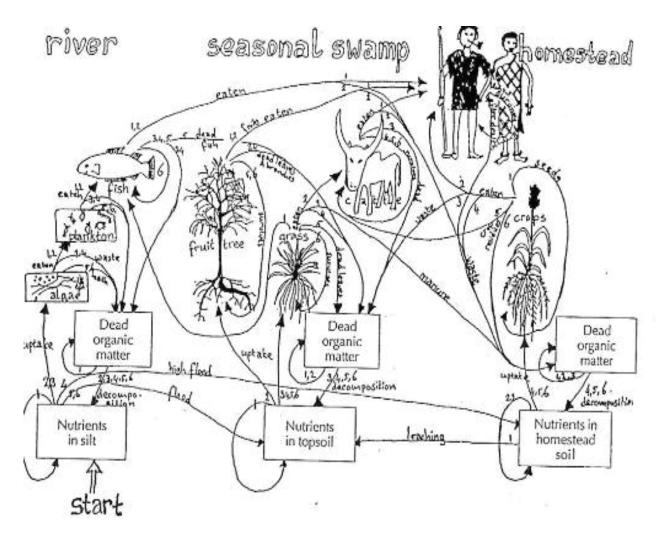


Figure 3: An example of nutrient flows in a homestead farming system

Farming systems: Three approaches to farming

Three approaches to farming and their major characteristics are discussed below:

Traditional Agriculture

This is based on indigenous knowledge and practices that have evolved over many generations. It is generally orientated towards subsistence, uses locally available resources and makes little use of external inputs. Traditional agriculture is highly varied, as it depends on site-specific ecological and cultural factors.

Confronted with rapid changes such as increasing population pressure and greater needs for cash, farmers practising traditional agriculture cannot always increase productivity sufficiently. They may therefore expand farming into marginal areas, which increases the risks of over-exploitation, erosion and other forms of environmental degradation.

High-External-Input Agriculture (HEIA)

This is the conventional; "modern" approach to agricultural development. It puts great emphasis on the use of external inputs such as hybrid seed, fertilizer, biocides,

<u>Biocides</u>: A combined definition for herbicides and pesticides, which are chemicals that kill weeds and insects.

mechanization and credit, to enhance productivity. HEIA is characterized as follows:

- It uses high levels of external inputs;
- It involves strong links between farmers and commercial and government services;
- It is market oriented;
- It is specialised in only a few crops grown in pure stands (mono-cropping) or single-purpose livestock kept in large numbers; and
- The biomass in the landscape is greatly reduced.

HEIA has certain advantages such as short-term increase in production and cash income, uniform production processes and lower labour costs. However, it also has many disadvantages:

- It has limited applicability to dry and risk prone farming areas;
- It has negative impacts on water, air and human health;
- It tends to erode soils, genetic resources and local knowledge;
- It cannot be applied by many poor farmers in poor areas;
- It under-utilizes available local resources and over-utilizes non-renewable resources such as fossil energy and phosphorus; and
- It increases the dependency of farmers.

These and other disadvantages have stimulated interest in developing sustainable farming practices. New approaches have emerged such as organic farming, Permaculture and Ecological farming. We use the term LEISA.

Permaculture: This word is short for permanent agriculture, which is a design system for natural farming and living.

Low-External-Input and Sustainable Agriculture (LEISA)

LEISA depends primarily on resources from the farm, village and region and is characterized as follows:

- It aims to integrate soil fertility management, arable farming and animal husbandry;
- It makes efficient use of nutrients, water and energy, and recycles them as much as possible, thus preventing depletion and pollution;
- It uses external inputs only to compensate for local deficiencies;
- It involves site-specific farming practices; and
- It aims at stable and long-lasting production levels.



Activity 9: Analysing a known farming system

Aim

Analysis of known farming systems in terms of the three approaches to farming.

Instructions

Divide into groups of 4.

Read through the descriptions in your text on traditional agriculture, HEIA and LEISA. Then, as a group, complete the worksheet below. Write down your thoughts on how each of the variables applies to each of the farming systems.

Table 6: Worksheet on farming approaches

Variables	Traditional	HEIA	LEISA
Use of locally available inputs			
Variety/specialisation			
Use of external inputs			
Use of local knowledge			
Use of extension services			
Main production objectives			
Cash income			
Labour requirements			
Level of production			
Degree of recycling			
Level of water use			
Sources of water and rainwater harvesting			
Degree of sustainability			

The homestead as a farming system

We will first look at the principles of low-external-input farming that can be applied to homestead food production, and then look at the homestead farming system within this context. We are now assuming that a low-external-input approach is indeed the best option at a homestead level.

LEISA Principles

Mimicking nature:

All natural ecosystems without human disturbance manage to accumulate nutrients. This happens in a number of ways:

- Living plants form a continuous soil cover;
- ❖ A layer of decomposing plant material and leaves covers the soil;
- Roots of different plants are distributed throughout the soil at different depths; and
- Most nutrients are retained in living plants or animals.

Seeking diversity:

Natural ecosystems consist of many different plant and animal species interacting with one another. These develop over a long period. In the LEISA farming system, the farmers try to develop similar **processes**, by diversifying the species of animals and plants that grow and interact with one another. This gives strength to the system, enabling it to resist disturbances such as erratic rainfall and attacks of pests and diseases.

Living soil:

One of the most important components of soil is **soil life**, including bacteria, fungi, protozoa, nematodes, beetles, centipedes and earthworms. This plays a major role in nutrient availability and recycling, and thus in agricultural productivity. Farmers have to create favourable conditions for soil life. Organic matter must be provided.

Cyclic flow patterns:

In a natural ecosystem hardly anything is lost. In LEISA, losses are minimized through cover crops, deep rooting species that recycle nutrients, erosion control, and improved collection, storage and application of wastes from crops (residues), livestock (manure and urine), and the kitchen (water and food wastes). Similarly, water flows are managed so that optimum use is made of available water.

Systems thinking

Everything works as a system because of general interdependency and widespread effects of activities. A homestead is probably the most important system for humans. This is the place where we grow up, get educated and nourished. If the homestead is strong, nourishing and enabling, its people will also be so. If the homesteads are weak, impoverished and disempowering, it people will also be so.

There are many facets or aspects to a household such as spiritual, social, cultural and financial aspects. In this training the emphasis will be placed on the household as a farming system, supplying balanced, nutritious and safe food to all family members. Production within the "four corners" of the residential plot could play a significant part in this objective.

Generally a system has a **boundary**:

This you define yourself; it could be the four corners of your yard, or an area that includes your homestead and field, or a number of homesteads relying on one water source, or a whole village, etc. It depends on what you want to investigate.

A system also has inputs:

These are items or processes that feed into your system that may or may not come from outside the system. In the case of a homestead, inputs could be manure (potentially inside the homestead), seeds (often from outside the home, e.g. from town), etc.

A system also has **outputs**:

This is what your system generates; in our case produce (food), but also fodder, money, etc.

Within your system there are **processes** that turn your inputs into outputs.

Below is a small diagram to represent the sub-systems. Using arrows shows the relationships. Note the different directions of the arrows.

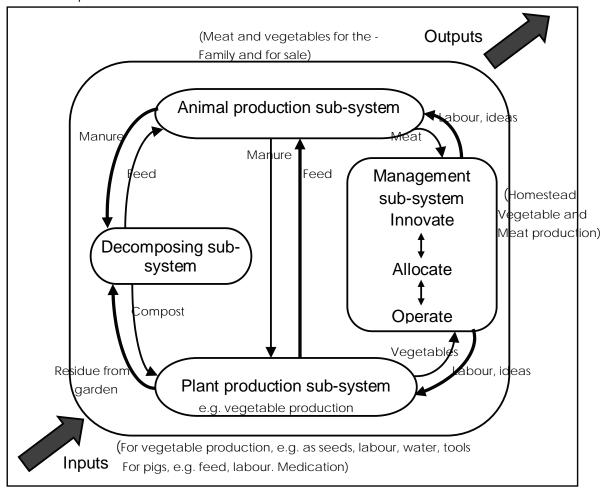


Figure 4: Example of a systems diagram



Activity 10: The Homestead as a Farming System

Aim

Individual analysis of a known homestead as a system.

Instructions

Taking your own homestead or one that you know well, construct a flow diagram of the farming system. Make sure you clearly indicate the **boundaries** of your system, **inputs**, **outputs** and **relationships**:

Make a comment about the present situation.

Then make a comment about future possibilities for this system, taking into account the LEISA principles mentioned above. Indicate these processes clearly on your systems diagram.

SWOT analysis

A SWOT analysis is a way of analysing a situation that can help decision-making and planning, by highlighting the important issues ____ in a concise form.

Swot stands for:

STRENGTHS: Make a list of the internal strengths in the situation – what is working well.

WEAKNESSES: Make a list of the internal weaknesses, problems, and difficulties – what is not working well.

OPPORTUNITIES: Make a list of the external possibilities, suggestions for action and change, new ideas that can be brought in – what could work well in the future.

THREATS: Make a list of the foreseeable external dangers and problems related to the opportunities – what could jeopardise the situation in the future.

Usually, we present these lists in the form of a table. This becomes the basis of a discussion for the best possible interventions or actions for change in a particular situation.

Below is a quick example, using food security as a topic:

Table 7: SWOT analysis on Food Security for a Rural Household

STRENGTHS

- Access to land for farming and gardening.
- Natural resources for basic needs; water, fuel, grass, wild foods.
- Family can be involved in a range of livelihood activities.
- Safe, healthy environment for children.

WEAKNESSES

- Little money to pay towards farming.
- Many people using limited resources.
- Lack of labour.
- Lack of sanitation and diverse foods lead to diseases that are life threatening for small children.

OPPORTUNITIES

- Low external input farming is possible.
- Use resources that the household has control over; e.g. rain water falling within the boundaries of the homestead.
- Cultivating your own resources; e.g. firewood, medicinal species, traditional crops.
- Labour saving technologies and processes; such as planning a garden that can self-maintain, growing fruit and nut trees that need little attention but can still provide food. Using appropriate tools.
- Growing a diverse range of food crops that can supplement the diet of small children. Giving attention to sanitation.

THREATS

- Limited knowledge of how to implement low external input farming systems.
- Limited space, time and resources to initiate low external input farming activities. Immediate need may overshadow longer-term production.
- Access to information and technologies.
- Motivation for change may be a limiting factor for poor people that are struggling to survive.

Looking at this table, one can see that there are many opportunities for increasing food security at a homestead level. Most of the threats to

implementing these ideas relate to lack of access to information and resources to implement these ideas.

This then gives a clue where to start with an intervention for change:

i.e. Training and learning processes that also bring in some resources to implement new ideas.



Aim

Group swot analysis of a homestead farming system

Instructions

Do a SWOT analysis in groups of 4 of the systems you have described in 'Activity 10' above.

- -Produce a table of strengths, weaknesses, opportunities and threats that you have discussed for your four systems.
- -Make a comment about the present situation: summarise what is coming out of the table.
- -Then make a comment about future opportunities, taking into account the possible threats.
- -Finally, come up with a potential intervention (project) that could change the situation for the better (based on your table).



Facilitator's Note:

This can be used with the 'Garden Learning Groups Tool" in Chapter 2.



Case study 4: Homestead Farming System example

Below is an example of a homestead farming system as practised by Mr Matlere in Lesotho. You will need to read through this case study carefully before you can do the activities at the end of this section.

A beautiful example of intensive food production and rainwater harvesting

Mr S S Matlere has been working with conservation agriculture for many years. He noticed a number of problems in the cropping fields in his work as an agricultural extension officer. These included soil erosion through uncontrolled run-off, declining soil fertility, a lack of water, and low production. Through long and thoughtful observation, he has now designed and implemented his own system of farming that solves these problems and also has many other benefits.

Mr Matlere remains an extensionist at heart. 'Ask me about furrows,' says the writing on his back.



The Main feature

Of Mr Matlere's design, is to make furrows on the contours in the fields, with a mound all along the down slope side of each furrow,

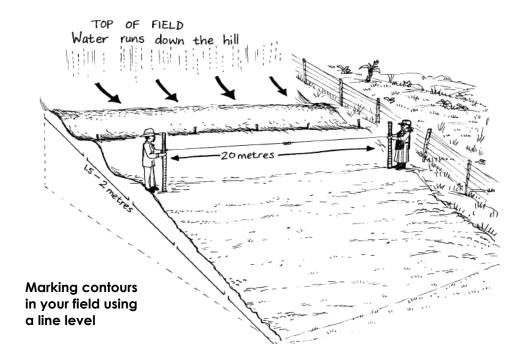
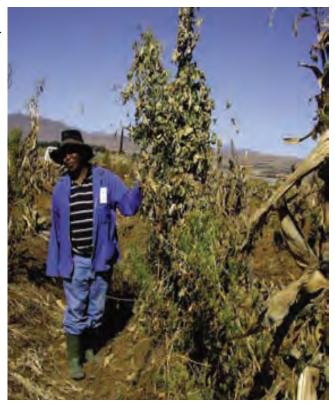


Figure 5: Method for Marking Contours in a Field

Organic matter is continually incorporated into the mounds. A range of crops are grown, including maize, wheat and vegetables such as beans, tomatoes, cabbages, potatoes, rape, mustard spinach and onions.

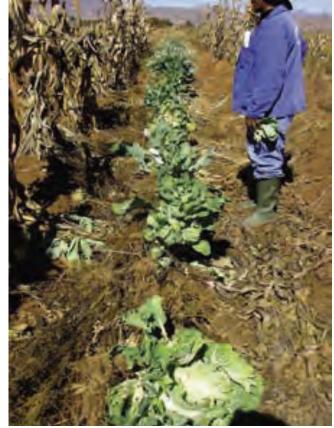
Mr Matlere is standing in one of his furrows. On the mound is a crop of maize, already harvested, with runner beans climbing up the stalks.



In another row of the field, cabbages were planted on the mound next to the maize.

These cabbages are now being left to produce seed for the next season.

Note the organic matter that is weeded out and placed as mulch in the furrow and on the mounds.



Why furrows and mounds?

- The furrows and mounds help to regulate runoff water, which would erode fertile topsoil away.
- The furrows ensure that all the rain that falls on the field, remains there. The rain is caught in the furrows and sinks into the soil.
- ❖ The furrows help to distribute rainwater evenly throughout the entire field.
- ❖ The mounds help increase the depth of soil, which in turn helps the roots of the plants to go deeper in search of plant food and moisture. With strong, deep roots, the crops yield better.
- The furrows and mounds also increase the fertility of the soil through the organic matter that is incorporated into the soil. The moisture in the soil and the heat of the sun striking the sides of the mounds, help to speed up the breakdown of the organic matter.

Maize was planted and then intercropped with beans and tomatoes. The mound was formed during the summer season by heaping the soil and weeds together up around the row of maize planted. Thereafter, beans and tomatoes were planted on the mound with the maize.

In autumn, after the maize was harvested, wheat was planted at the bottom of the mounds and kale was planted on top of the mound.





The maize residues have been worked into the mounds once the crop was harvested.

These mounds will be ready for planting again in spring.

In this way, the typical backbreaking land preparation in hard, dry soil is avoided. Crops can now be planted earlier – as soon as the first rains have come. In many areas, this means that the crop can mature during the peak rainy season, avoiding the major risk of crop failure through late season dry spells.

Cropping in furrows and mounds

In this system of furrow cropping, crops are grown over a longer period of time, so that more than one crop can be harvested in a season. Cattle are not allowed to enter into the field at any time, as they will trample the furrows and mounds, and will eat the residues that need to be incorporated into the soil.

Different crops can be grown in the same field in a relay fashion. As some crops are maturing, other crops are planted. The maize plants for example, become a support for the tomatoes and beans that are planted later.

Mr Matlere (left) and Mr Thulo (right) (CARE-Lesotho) inspecting Mustard Spinach seedlings planted in seedling trays. These seedlings are produced in the greenhouse towards the end of the hot period of summer, so that they can be planted in the field as soon as autumn comes. In this way, a good crop can be realized before the severe winter cold sets in.



If a farmer wants to produce an early crop, seedlings can be raised in green houses, either in seedling trays, or in the case of larger seedlings, like pumpkins and squashes, in old tins. The containers are filled with well-rotted manure or compost. The seedlings are transplanted onto the mounds and furrows as soon as the last threat of frost is over.



Materials for producing seedlings have been collected: A large pile of well rotted compost and a pile of tins for planting.

Some interesting outcomes

- ❖ The continued absorption of rainwater into the furrows and mounds tends to influence the moisture in the area over time. Mr Matlere has experienced that two days after some days of soaking rain; the sun that strikes the sides of the mounds creates a mist that rises up from the beds. This happens due to the warmth generated in the mounds from the decomposing grasses, weeds and maize stalks. It provides a warm, moist microclimate in an area that would otherwise be quite dry. This provides very favourable conditions for the growth of vegetables and pumpkins.
- ❖ The silt that collects in the furrows during heavy rains provides some more fertility, moisture and a better foothold to the crops planted there. Mr Matlere has noticed that the stand of maize is much better with this system. The maize does not fall over in heavy rains and winds, as they do under normal conditions.
- With the mounds, the organic matter that has been incorporated decomposes faster than it would without the mounds. The climate in Lesotho is mild and many months are quite cold and dry. The mounds provide a surface that is heated by the sun and the organic matter holds more moisture. Thus decomposition happens faster.
- ❖ Because there is more organic matter in the soil, it becomes fertile without the need even to add manure, when that is in short supply.
- Mr Matlere has noticed that with the increase in fertility and organic matter (humus) in the soil, there are fewer problems with pests and diseases.
- ❖ Because the spacing of the crops is quite wide with this system, the maize matures faster, there are more cobs per plant (4-5) and cobs are bigger. So, even though fewer plants are in the ground, a better harvest is achieved. This applies also to other crops like cabbage and wheat.
 - The wide spacing of the rows facilitates early weeding which is important.
 - Spacing is generally up to 2 m between the rows (on the mounds) and up to 60 cm between plants in the row (on the mounds).

- This wide spacing can also facilitate the use of animal drawn implements (oxen or horses) for weeding.
- For smaller crops like kale and tomatoes, the spacing between the plants in the row is 30 cm.
- For row crops like wheat and onions, 2-3 rows are planted, with a spacing of 40-50 cm between rows and 30 cm between plants in the rows.
- ❖ In this system, seeds are planted by hand, rather than by animal drawn planters.
- ❖ Mr Matlere also only plants crops from which he can keep his own seed.



Activity 11: Analysis of the case study of a Homestead Farming System

Aim

Analyse the case study given in terms of the three farming system used (Traditional Agriculture, High-external-input Agriculture, Low-external-input and Sustainable Agriculture). Also analyse the case study in terms of the elements of sustainability.

Instructions

Discuss and summarise the case study of a homestead food gardening system that you have been given; using some of the processes and concepts discussed in this section (sustainability, 3 farming approaches, SWOT, flow diagram and mind map).

1.5 References and further reading

- Ainslie, A. 2006. Provincial Growth and Development Plan Eastern Cape. Case Study Report No4. Ngqushwa Municipality, Peddie, Eastern Cape.
- Ambala, C. 2002. Water Resources. Africa.unep.net/freshwater.content1.asp.
- Department of Social Development. 2006, November. Linking Social Grant Beneficiaries to poverty Alleviation and Economic Activity. Discussion Document.
- Kruger, E. 2009. Baseline Study for the Formulation of a Programme for Empowerment for Food Security in KwaZulu-Natal, South Africa. KZN Department of Agriculture and Environmental Affairs. FICA press (Flander International Cooperation Agency).
- Livernash, R and Rodenburg, E. 1998. Population Change, Resources and the environment. Population Bulletin 53 (1):34
- Douthwaite R. 1999 The Growth Illusion.
- Minkley, G. 2003. Framing Agrarian Transformations and Food Security. Synthesis Report, Institute for Social and Economic Research, University of Fort Hare, East London
- Mudhara, M.; Malinga, M.; and Salomon, M. 2008. Enhancing Farmer's Innovative Capacity in Soil and Water Management through Participatory Action Research in Potshini, South Africa. In Physics and Chemistry of the Earth 33 (2008) available online at www.sciencedirect.com or Mudhara@ukzn.ac.za
- National Income and Expenditure Survey. 2007. www.statssa.gov.za Community Survey.
- National State of the Environment Report South Africa. 2002. Freshwater Systems and Resources. Pressures Affecting Freshwater Systems and Resources in South Africa. www.ngo.grida.no/soesa/nsoer/issues/water/pressure.htm
- Population Action International. 2002. Sustainable Water. Population and the Future of Renewable Water Supplies. www.cnie.org/pop/pai/water-14.html
- Rural Survey. 1997. Stats SA Rural Survey.
- Sturdy, JD, Jewitt, GPW, Lorent, SA. 2009. (in preparation) Participatory Valuation of Gardenscale Water Use Innovations in Rural South Africa. School of Bio-resources Engineering Environmental Hydrology, University of KwZulu Natal, Scottsville, South Africa.
- Timmel, S. and Hope, A.1980. Community Workers Handbook. Book3, Chapter 9. Practical Action.
- UNFPA.2001. The State of the World population 2001. http://www.unfpa.org/swp/2001/english/cho4.html
- Van Veldhuizen, L.; Waters-Bayer, A.; and Zeeuw, H.D.1998. Developing Technology with Farmers: A Trainer's Guide for Participatory Learning.
- WHO. 2002. An Anthology on Women, Health and Environment: Water. World Health Organisation (WHO) / UNICEF.
 - www.who.int/environment_information/Women/Womwater.htm
- Wilson, J.
- Wilson, J. 1995. An Introduction to Systems Thinking. Changing Agriculture. Kangaroo Press. Australia.
- Winpenny, JT. 1999. Managing Water Scarcity for Water Security. www.fao.org/ag/aglw/webpub/scarcity,htm
- 2001. National population Unit: 33.

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Agricultural Water Use for Homestead Gardening Systems

Resource Material for Facilitators and Food Gardeners

Chapter 2

Facilitation of Homestead Food Gardening

Chapters: Resource Material

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Chapter 1 Rural realities and	d homestead food	gardening options	(TT 431/1/09)
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Chapter 2	 Facilitation of homestead food gardening (TT 431/1/09) Handouts: Chapter 2 – Homestead Food Gardener's Resource Packs
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Chapter 3	- Living and eating well (TT 431/1/09) - Handouts: Chapter 3 – Homestead Food Gardener's Resource Packs
Chapter 4	 Diversifying production in homestead food gardening (TT 431/2/09) Handouts: Chapter 4 – Homestead Food Gardener's Resource Packs
Chapter 5	- Garden and homestead water management for food gardening (TT 431/2/09 - Handouts: Chapter 5 – Homestead Food Gardener's Resource Packs
Chapter 6	 Soil fertility management: Optimising the productivity of soil and water (TT 431/3/09) Handouts: Chapter 6 – Homestead Food Gardener's Resource Packs
Chapter 7	Income opportunities from homestead food gardening (TT 431/3/09)

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Aims

This chapter aims to introduce facilitation strategies for food security. An overview of facilitation processes and resources needed is given. The aim is to ensure that facilitators understand the cyclical nature of facilitation processes to include a detailed understanding of the indigenous situation that leads to action. This is followed by review and further action. A detailed participatory scoping exercise and assessment is required.

The aim of this Chapter is to introduce facilitators to a number of participatory methodologies that can be used for this. Examples are semi structured interviewing, participatory analysis of assets according to the assets pentagon, resource mapping, transect diagrams, various methods of participatory ranking, Venn diagrams and institutional profile development.

A further aim is that facilitators can develop a facilitation plan and community action plan in ways that include the community to the extent that local involvement is inevitable. This is followed by participatory reporting, cultivating local awareness and support for household self-help efforts and setting up Garden Learning Groups (Support Groups).

Much of the Chapter aims to give facilitation tools for facilitators to set up and work with Garden Learning Groups to empower insecure households to develop skills and to act in ways that would enhance their food security. Processes of mind mobilisation, visioning and household experimentation are paramount in this. Facilitators are encouraged to ensure that Garden Learning Groups also undertake outreach activities.

What am I going to learn?

Following overleaf is a list of the things you should be able to do when you have successfully completed the chapter. This list gives you some idea of what to expect when you start working on the chapter, but, more importantly, you should come back to the list when you have completed the chapter to check if you have achieved all the objectives set out for the chapter. This means that you can monitor your own progress quite accurately. On the following page is the list of these outcomes for this chapter:

What a	am I going to learn?	What should I be able to <u>do</u> after completing this unit?	Done √ Can't do ×
1	Appropriate facilitation strategies for food insecure households	 Assist food insecure people with practical, achievable self-help actions. Interact with role players to create an 'enabling environment. Improve the ability of the household to achieve self reliance 	
2	The cyclic process of observation and action and creating a scoping report framework	 Gather and interpret data from secondary sources Design a scoping or situation analysis process Meet with local leadership and organizations to gain support 	
3	Facilitation of a scoping or situation analysis exercise	 Participatory information gathering and analysis in the village using methods such as Participatory Rural Appraisal Ensuring local involvement in developing community action plans 	
4	Reporting	Undertake participatory reporting using the sustainable livelihoods framework.	
5	Creating and enabling environment in the village	 Facilitate agreement of the local leadership for facilitation processes. Establish and support functioning of garden Learning Groups Facilitate a mind mobilisation workshop Facilitate household experimentation processes. 	
6	Mind mobilisation, visioning and ongoing self- evaluation	 Facilitate a mind mobilization workshop. Ensure individual counseling where appropriate Undertake a helicopter planning process with participants. Facilitate household experimentation and ongoing self evaluation processes 	
7	Household learning content established	 Using participatory processes to establish learning content based on resources in this manual. Adapt learning content as the situation demands 	

Icons

You will find that several different icons are used throughout the Chapter. These icons should assist you with navigation through the Chapter and orientation within the material. This is what these icons mean:



Facilitation tools

Processes that you can use in workshop situations, to support your work in the field.



Research /Case study

The results of research or case studies that illustrate the ideas presented.



Looking at research, facts and figures to help contextualise things.



Activity

This indicates an exercise that you should do – either on your own (individual) or in a group.



Copy and handouts

These sections can be copied and used as handouts to learners / participants.

2.1 Facilitation strategies for household food security

In the introduction section to these resource materials we considered incentives and disincentives for homestead food production. We also looked at the importance of recognising the psychological effects of chronic hunger and we suggested types of facilitation strategies that could empower homestead food gardeners.

In Chapter 1 we considered rural realities, the role of water and looked at different farming systems that are appropriate to homestead food gardening.

We will now continue by looking at facilitation methodologies and processes that can be used both at community and individual level to foster action, independence and social well being in a homestead food gardening context.

Appropriate strategies for chronic hunger vs. famine

The strategies to combat chronic, ongoing hunger are different to emergency strategies like food aid, which is used to combat famine or starvation due to some short-term calamity like war or floods.

Strategies for chronic, long-term hunger are aimed at **reducing people's powerlessness**, by enabling them to engage in activities that can permanently improve or solve their ongoing food insecurity. Therefore, home food security strategies aim to develop the household's ability to take care of themselves, and aims to systematically reduce the household's dependency on outside help of all kinds. This reduces their vulnerability, and helps them to avoid food crises and malnutrition.



FACILITATOR'S NOTE

- The fundamental role of the household food security facilitator is to help food insecure men and women to regain hope and self-respect, so that they can gain control over their lives through practical, achievable self-help action.
- To achieve this, the facilitator also needs to interact with other role players, with the specific purpose to create an enabling environment within which these food insecure households can make progress.
 - IN food security facilitation all information and activities are ultimately aimed at improving the ability of the household to achieve and maintain food security.

Note that the emphasis is on the ability of the household, and on self-help strategies.

The facilitator is helping the household to address the second type of hunger that De Castro (De Castro, undated) talks about – partial or chronic hunger where people eat inadequately year in and year out, and which 'silently destroys and undermines countless populations'. (See "Introduction to Resource Materials for Facilitators – Section 5 – Points of Departure" for more on the subject).

The need to understand and act

Like Lappe et al. (Lappe et al., 1998), De Castro stresses the need for us to understand hunger before we can hope to have an impact on it:

In order to adequately plan solutions to feeding people around the world, it is necessary to overcome one of the main obstacles in the fight against hunger: the lack of a deeper knowledge about it – understanding the notion that hunger is a complex set of manifestations that can simultaneously be biological, economical and social.

Every household is unique, and therefore needs their own strategy to solve their problems. For instance, a deeply traumatised and fractured household would need a different approach to one where family relationships are healthy; a household with a natural spring would have other opportunities than those without easy access to water; a household consisting entirely of school going children could not use the same solution as one consisting of a pensioner with working age sons and daughters. Equally, every village is unique in terms of its natural resources, its leadership approach, history and politics, and relationships among community members.

The better you understand the causes and effects of hunger, the resources and constraints affecting a particular household, and factors beyond the control of the household, the better you will be able to understand what could and couldn't be done to improve the situation.

How would a facilitator apply this practically in his/her work?

- ❖ In section 2.3 "Scoping and situation analysis" we will look at the necessary information gathering and analysis to improve facilitators' understanding of the local food security situation and factors in a community or area we plan to work in.
- The scoping and information exchange process is already the first stage of mobilising people into action, and is most useful when it is done in a participatory way.
- When it comes to individual households, no one knows their family's situation better than themselves. Remembering that our objective is to help them

FACILITATOR"S NOTE

You need to create your scoping report framework right at the beginning as this defines in many ways how you will gather information and which information you will work with.

overcome powerlessness, the facilitator's role is to provide the household with a method to develop their own action plans, and NOT to develop their plans for them.

- Section 2.4 looks at "Creating an enabling environment in the village". Issues of cultivating awareness and the establishment of support groups such as Garden Learning Groups are raised.
- ❖ In section 2.5 "Household mobilisation and support", you will find the Helicopter Planning exercise, which was developed by Ma Tshepo Khumbane over many years as a visual, practical visioning and planning tool that households can use (literacy not required).
- Two effective methods for Mind Mobilisation are described, namely the Nutrition Workshop and the Present Situation Analysis & Counselling process.
- ❖ A powerful method for ongoing learning around household food gardening techniques, called **Household Experimentation** is also described.

2.2 Planning for facilitation and household support

Key questions are:

- 1. Is it ethical to engage people in an analysis of their situation and help them to plan for action, unless the resources are already available to address their needs?
- 2. Would it not be unacceptable to raise expectations that cannot be met, and thereby set people up for disappointment?
- 3. On the other hand, is it ethical to withhold knowledge and planning skills from people, just because the resources for implementation may not be immediately available?
- 4. And, aren't there many things people can achieve, just with the resources they already have?



FACILITATOR'S NOTE

Principle: No promises. EVER.

Principle: Always help people to plan firstly what they can do with what they have, and secondly to highlight what outside assistance they would need to go further.

Overview of processes and resources needed Key Concept 1: Understand, and then act.

The work of a household food security (HFS) facilitator involves cycles of information gathering and action steps (See Figure 1).

The facilitator gathers and interprets new information all the time so that actions taken can become more and more effective. In other words, HFS facilitation requires a 'lifelong learning approach'. This applies to every household or community situation the facilitator works in, but also in the HFS facilitator's personal development.

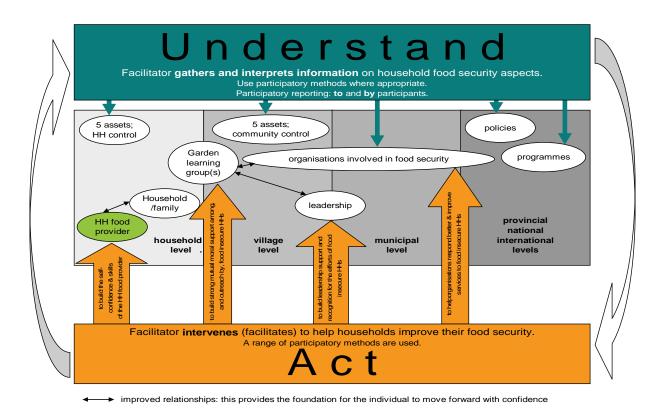


Figure 1: Overview of the tasks of a household food security facilitator

"Figure 1: Overview of the tasks of an Household Food Security Facilitator" shows what types of information a facilitator needs to gather, even at national level, to improve his/her **understanding** of the context of the target households in a specific village. It also shows at which levels s/he needs to 'act' or 'facilitate' to enable the target households to improve their food security

NOTE 1: In the diagram above, these arrows show improved/healed relationships: between the household caregiver and his/her family; between the garden learning group and the leadership or other organizations that can recognize, encourage or assist food insecure households' own efforts towards food security; and so on. Improved relationships provide a very important foundation for the household caregiver to move forward with confidence and for social well being.

NOTE 2: There are various levels at which the Household Food Security facilitator needs to engage, described here as: Household level (all persons that make up a basic socio- cultural and economic unit), village level (a community made up of households), municipal level (all villages/ communities falling within wards that make up a local municipal structure. A number of local municipalities are combined to form a district municipality), and national and international levels (politics, policies and strategies at country and global levels that affect people).

Understand:

The facilitator has to gather and interpret information to understand the food security situation and factors affecting it. S/he thinks herself into the shoes of the household caregiver, and interprets which factors at household, village through to national level are affecting this person's ability to feed her family. The facilitator then assesses which factors s/he would be able to influence, and develops a facilitation plan accordingly. (Note: you will learn more about developing a facilitation plan in the next section, where Key Concept 2 is discussed).

Act:

Using the knowledge – and also the relationships! – which the facilitator has built up during information gathering, s/he facilitates change by interacting with the household caregiver, with local leadership, and with other organisations involved in food security matters in the area. To reach more households simultaneously and to build a permanent 'support group' among food insecure households in the neighbourhood, s/he establishes a garden learning group and helps it to develop its own vision, goals and action plans.

Let us summarise how this learning and action cycle works:

Like life itself, household food security facilitation is an ongoing cycle where we understand act auditor to plan and start a process in the initial information gathered, enables the facilitator to plan and start a process in the village. Then, as things develop, she learns more and more, and further builds relationships with the various role players and households. This enables her to improve the facilitation plan and actions – but always through participatory processes, so that those who will implement them make the plans. Remember that in household food security, our challenge is to facilitate in such a way that the household caregiver always takes the role of main actor/decision-maker.

We will now have a closer look at the 'information' tasks (top part of Figure 1) and the 'action/facilitation' tasks (bottom part of Figure 1). Then, in later sections of this chapter, you will learn practical tools to perform these two types of tasks.

Information tasks of the HFS facilitator

From Figure 1 you will see that information gathering and analysis needs to be done at the various levels we have discussed above, namely at household, village, municipal and higher levels. In Table 1 and Figure 2 below, summaries are provided for the basic processes and actions for these information tasks. This should provide you with an overview of what needs to take place. In the following sections of this chapter we will discuss each of the basic processes in more detail.

Table 1: Overview of facilitation processes for the information tasks

The basic processes	Key questions	Actions
Scoping or situation analysis	 How does one know what information to look for, and what to ignore? What useful information can one get from outside sources, like databases and computer programmes, and on government policies and programmes? How does one structure this information in a sensible way? Which participatory facilitation techniques can one use to get household caregivers thinking and debating about relevant food security information among themselves? And leadership and other local role players? 	Gather background information Participatory information gathering and analysis in the village using methods such as Participatory Rural Appraisal
Creating an enabling environment (in the village, local and district municipalities, etc.)	 How can one involve local leadership in a way that they are supportive and active in the food security processes of their community? How can one set up report-back sessions to ensure that local leadership are involved and supportive and that households become motivated to undertake their own food security initiatives? 	Open the door Get leaders' support Get buy-in from other organisation involved in food security in the area
Reporting and community mobilisation	How can one give structure and order to the information, so that it can be reported in a meaningful way?	Report to community
Household mobilisation and support	How does one ensure that the information gathered, analysed and debated, leads all the way through to a shared vision on food security, and a practical food security action plan with agreed roles and responsibilities, timeframes and (self-) monitoring processes?	Set up Garden Learning Groups for learning and actions
Garden Learn- ing Groups	This is discussed in later sections of this chapter	
Self monitoring and renewal	How can one ensure that the food security action plans are implemented and continued over a period of time?	Evaluate and refine learning and action cycles

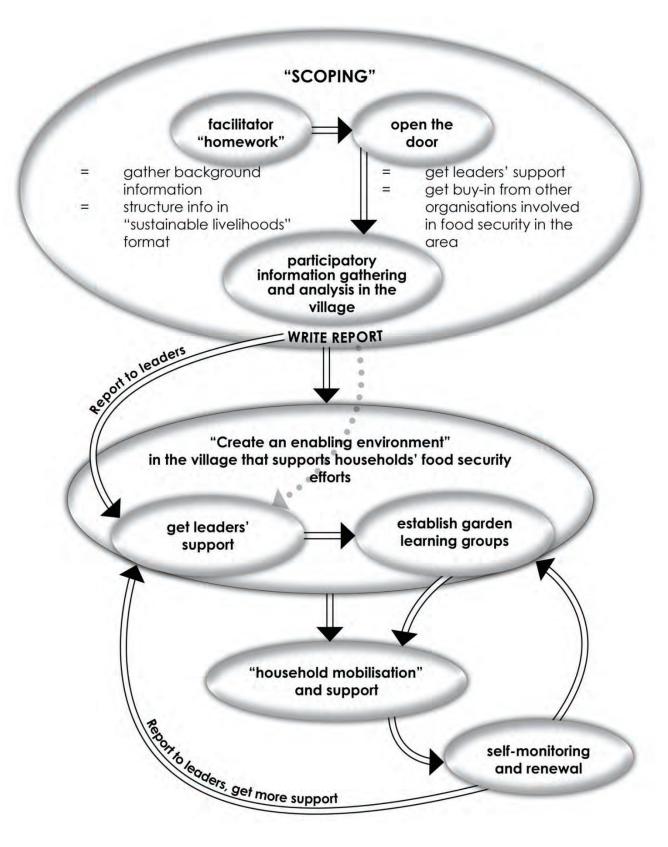


Figure 2: Overview of facilitation processes for the information tasks

2.3 Scoping or situation analysis

Preparation for scoping: Facilitator's homework

Purpose:

- →Gather and analyse essential background information from external sources to understand what is possible.
- → Design a 'Scoping Report framework'.
- → Get permission and leadership assistance to do scoping in the village. Use your 'Scoping Report framework' and proposed 'Facilitation Plan' to share information about the background information you have collected from external sources, and the process you plan to introduce in the village.
- →Undertake the participatory information gathering and analysis in the village using a number of different methods

Before it is possible for people to intervene in a situation and work together around changing or improving that situation, it is important first to understand the situation.

As a facilitator, there are a number of steps that you need to take to introduce a process in a community or village. The first is to know something about the area, the people living there, their traditions and practises, and the environmental or farming conditions in the area. If you come from the area, this will be easy for you. If you do not, you will have to do a bit of background reading; finding external sources of information that can tell you more about

the area, its people and its resources.

Once you have done this, you need to get local support for and understanding of the process you plan to introduce there. You will need to consult the local leadership (including traditional and municipal structures) and people in the community (organised groups or individuals that are involved in community development activities).

FACILITATOR'S NOTE

Even if you come from an area, you will almost certainly discover things you didn't know about your area.



FACILITATOR"S NOTE

You need to create your scoping report framework right at the beginning as this defines in many ways how you will gather information and which information you will work with.

Then, when you have a clearer picture of who is living and working in the area, you will be able to finalise the **design of your process** for finding and analysing local information, for the initial mobilising of potential participants in an intervention, and for how to present the information (create a scoping report framework).

Background information: Consult useful external sources (Your homework)

There are many potentially useful sources for basic information regarding the areas that you will be working in; both published materials and information on the Internet. Information can be found from a number of national and provincial sources that can

give indications of climate, natural resources, farming practises, demographics, and socio economic conditions. Municipalities generally also have their own websites where their Integrated Development Plans (IDPs) and other information for the area can be found.

<u>Demographics:</u>

Statistical data relating to the population and groups within it.

Some useful Internet sources:

- 1. www.agric.za and www.agric.za These sites host the Agricultural Geographical Information System Atlas useful for all kinds of data such as rainfall, soils, temperature, land use, erosion, crop potential, and so on.
- 2. <u>www.wrc.org.za</u>: This site hosts many publications related to water and water use in agriculture. You can also go to <u>www.dwaf.gov.za</u> for information on water provision.
- 3. www.beeh.ukzn.ac.za This is the site for the Department of Bio Resource Engineering and Environmental Hydrology at the University of KwaZulu-Natal, where you can find the following publication: Schulze, R.E. 1997. South African Atlas of Agro hydrology and Climatology. WRC Report NO. TT82/96 or go to www.agriculture.kzntl.gov.za/publications
- 4. <u>www.sagis.org.za</u>. South African Grain Information Services. This site provides all kinds of production and economic data on grain production in SA.
- 5. <u>www.statssa.gov.za</u> This site provides statistics of all key population indicators for South Africa. It has a lot of detail on many different things for your area, such as size of population, incomes, expenditures, unemployment and so on.
- 6. <u>www.idasa.org.za</u> This site gives a lot of different information on Municipalities and can help you find information specific to the district or local municipality you are after.
- 7. www.treasury.gov.za This site provides information on budgets, expenditure and plans for all the provinces and municipalities in SA. You can also go to the provincial equivalents, e.g. www.limtreasury.gov.za for Limpopo, It is possible also to just type in the name of the municipality when you are searching. You are likely to find their IDPs there and other useful development information or go to www.dlgta.gov.za

Internationally there is an incredible amount of information. You can start with the following two very useful links:

- 1. www.fao.org: This is the Food and Agriculture Organisation of the United Nations which publishes a lot of information and statistics regarding agriculture in many different countries. See also www.faostat.fao.org
- 2. <u>www.ileia.org</u> This is the site of the Centre for Information on Low External Input and Sustainable Agriculture and has a wide range of agricultural information for the 3rd world.

Create a Scoping Report framework

Below is a suggestion for your reporting framework. Your main tool is Semi-Structured Interviewing of individuals and focus groups, but in the last column of Table 2, some further methods are listed that you can use to find and analyse the information you are looking for.

In the sections that follow (but sometimes also in sections of different chapters in this resource material), we will provide details of how you can implement each one of the methods suggested here.

This table suggests that you place your information under three different headings namely: development context, stakeholders and livelihoods analysis. You will thus gather information that will fit under these headings. Methods that you can use to gather this information are also given in the last column of the table ('Methods used for analysis and reporting'). You will need to choose a number of these methods and implement them to get the required information. And you will need to implement at least one method from each heading, but possibly more!!

You will need to make a decision before you start which methods you may want to use and make up your own scoping report framework. This is also part of your 'homework' before you start your processes in a village. You will report to your local leadership structures what your intended process is going to be for the scoping and you can show them your scoping report framework.

Table 2: Scoping Report framework and methods

Issue	Description	Questions that are being answered	Methods used for analysis and reporting
Development context	To learn about the economic, environmental, social and institutional patterns that pose supports or constraints for development	What are the important economic, institutional, social and environmental patterns in the village or community? What is getting better? What is getting worse? What are the supports and constraints for development?	Natural resource assessments (Chapter 5) Resource mapping (Chapter 2) Transect Walks (Chapter 2) Assets pentagon (Chapter 2)
Stakeholders	To learn about the priorities of different stakeholders and to plan development activities based on women and men's priorities.	What are the development priorities of different stakeholders and how do they intervene? What are different priorities for different groupings in the community?	Venn diagram and institutional profiles (Chapter 2) Preference ranking development needs, priorities for action-related matters, e.g. water (Chapter 2) Flow diagrams: e.g. Activities of different organisations and who benefits in the community (Chapter 1) SWOT Analysis (Chapter 1) Crossing the River (Chapter 2) Best bet action plans (Chapter 2)

Chapter 2: Facilitation of homestead food gardening

Issue	Description	Questions that are being answered	Methods used for analysis and reporting
Livelihoods analysis	Focuses on how individuals and households and groups of households make their living and their access to resources to do so. It reveals the activities people undertake to meet basic needs and to generate income. Gender and socioeconomic group differences are shown with respect to labour and decision-making patterns.		Farming systems diagram: Present food gardening activities with inputs and outputs (Chapter 1) Matrix diagrams: For food sources, income and expenditure (Chapter 2)

Source: (Wilde, 2001)

Open the door: Get local support for a scoping exercise

Once you have done your 'homework', you want to get permission and support to do a local scoping exercise. Use the background information you have gathered (with what you already know about the area) and your scoping report framework to discuss your idea and plans for homestead food gardening with local role players – especially leadership structures and other organisations involved in home food security and/or homestead food gardening.

Discuss the following:

- ❖ What the purpose of the scoping is, how it will be done, and what it will entail;
- What support local leadership could provide to you in organising the scoping; and
- How the outcomes of the scoping exercise will be reported to the leadership and the community; and what is likely to happen after the scoping (forming of Garden Learning Groups and mobilisation, training and support of interested households).

'Discussion pieces' can be useful in your discussions with leadership and other organisations to get support for the scoping exercise in the village, for instance:

Table 3: Discussion pieces to get local support for a scoping exercise

Discussion piece	Purpose
Photos and case study of a successful home food garden	To help people to visualise how homestead food gardening can contribute to food security. Emphasise that these production methods use low external inputs, meaning that it is achievable even for the poorest households. (You will find these in this Resource Material).
Example of a workshop schedule	To show the typical content of training sessions that has lead to the results seen in the photos and case study. Emphasise that the exact content will be decided together with the participating households, to build on what they know already. (You will find this in this Resource Material).
A simplified version of the Scoping Report framework (See Table 2).	This helps to show what will happen during the scoping and participatory assessment, and what type of information would be reported back to leadership and stakeholders. You want to set their minds at ease that your intention is not to create trouble in the village, or undermine leadership or current efforts. Emphasise the importance of scoping (i) to analyse the local context so as to tailor-make a facilitation process for this village, and (ii) to kindle interest among households in the village.
A preliminary (proposed) Facilitation Plan	Show what the facilitator plans to do, how long the overall programme will take (6 or 12 months, or longer?), and how and when reporting will be done. Invite comments on the proposed Facilitation Plan. Discuss how leadership and other stakeholders could help?



FACILITATOR'S NOTE - Facilitation Plan

The Facilitation plan is a document that details the methods that the facilitator chooses from the table and the time frame in which they will do it. It could take the shape of a table with the following headings:

- Process/Method
- Participants to invite
- Date
- Venue

Participatory assessment of local food security

Purpose:

- →Gather and analyse essential local information to understand what is <u>wanted</u> and <u>doable</u>, using participatory methods to involve the community in the scoping exercise.
- →Organise the findings into your Scoping Report Framework.

In this phase, you will be going through the steps of looking at the development context, the stakeholders and the livelihoods analysis set out in Table 2: "Scoping Report Framework" above. You will be talking to and interviewing a number of people either as individuals, in small groups or even in full community meetings. We will focus here on participatory processes that can assist you in this task.

Participatory methods

Facilitators favour participatory methods, because this provides an effective way to empower the people they are working with. In fact, this is the only known way to enable people participating in a development programme to come up with their own analysis of their situation, and to develop their own solutions. Through decades of bad experiences, development facilitators now understand that it is unsustainable to force external solutions onto people.

The first thing that you may need to think about is how you talk to people and listen to them. The principles of semi-structured interviewing and sensitive listening run like a golden thread through all the participatory methods, therefore we will first pay some attention to this. Thereafter, several examples are shown of how some of these participatory methods can be applied to collect and analyse the information needs that were listed in the Scoping Report Framework, for a homestead food gardening programme.

Semi-Structured Interviewing

This is a guided conversation in which only the topics are predetermined and new questions and insights arise as a result of the discussion and visualized analyses. This means that you as the facilitator know what information you want and need and have a broad list of the themes (such as income, types of farming, etc.) that you need to cover. Instead of having a questionnaire however, you have a "conversation". You make sure you give the person/s enough chance to talk freely about the themes in a way that suits them.

This type of interviewing can be used for individual interviews, key informant interviews and focus group discussions.

Key components of Semi-Structured Interviews:

1. Team preparation:

The goals/ themes of the interviews need to be defined – What is important to understand more about and how will we find this out? During the preparation:

- Develop an interview guide or checklist;
- Assign team roles and responsibilities; and
- Ensure good group dynamics and behaviour in the interviewing team.

2. Interview context:

When doing the interview the facilitator needs to pay attention to the setting (where?), timing (when?), body language, seating arrangements (how?) and biases (why? and who?).

3. Sensitive interviewing:

Sensitive listening and questioning means to ask open-ended, non directive questions and to probe answers. This is not easy to master, yet effective interviewing will only occur if this happens. (More about these ideas below.)

4. Judging and cross-checking responses:

Information that is generated needs to be crosschecked, rather than accepting the first answer one hears. This is part of probing.

5. Recording the interview:

It is vital to record the detail of interviews. Ask permission from the person being interviewed to take notes or record the interview. Use a recorder if discussing and writing at the same time is difficult for you. Record the detail of what is said and also what is NOT said, and of what is observed. Make follow-up notes and record personal impressions.

6. Self critical review:

After the interview it is important to assess critically which questions were effective and which were not, how some questions could have been phrased differently and how the context influenced the flow of information.

Sensitive questioning or interviewing

- ➤ Use <u>open-ended questions</u> (non-directive) as opposed to <u>leading questions</u>. This is a question, which does not require yes or no for an answer. It requires and explanation or a description.
- Ask clear, <u>unambiguous</u> questions.
- Use <u>simple questions</u>. Make questions short and easy to understand, but aim at consistently drawing out more details. Do not ask a sequence of two or more questions together.
- > Lead from more general topics to more specific topics.
- > Do not make abrupt changes of topic.
- Probe! Use the 6 helpers: What? When? Where/ how? Who? Why? But why? (Do not overdo this it can be a bit threatening.)
- > Avoid making conclusions for the interviewees or help them finish their sentences.
- > Avoid giving advice at this stage.



Activity 1: What is wrong with the question?

Aim

To illustrate the details of ambiguous (unclear) and leading questions.

Instructions

Look at the short list of questions below and identify what is wrong with each question. Then re-phrase the question to be less ambiguous or more open-ended. What is wrong with each question below? [Question 1, 2, 3, 4, 5, 6, 7, 8.] Now rephrase each of the questions:

- 1. Is it true that it is difficult to get your cattle to the veterinary clinic?
- 2. How do you get your medicine?
- 3. Wouldn't you prefer to grow improved potato varieties?
- 4. What do you do as a farmer?
- 5. Isn't the new clinic wonderful?
- 6. Do you sow seeds in a straight row?
- 7. How do you find the school?
- 8. Shouldn't you cover your water storage container?

Source: (Pretty et al., 1995)

What is wrong with the question? Answers: 1=leading, 2=ambiguous, 3=leading, 4=ambiguous, 5=leading, 6=leading, 7=ambiguous, 8=leading.

Time: 1 hour

Sensitive interviewing takes a while to learn to do well (like driving a car). As a facilitator you need always to be aware of what you are saying and how. You need to observe how this affects the people you are talking to, and make constant adjustments!! It is a continuous learning process.

Over the years, as you become more experienced, you will develop your own favourite set of questions that work well for you. Below is an example:

❖ When Ma Tshepo Khumbane interviews local organisations (community based organisations, NGOs, etc.) during a scoping exercise, they always voice the problems they are facing. Ma Tshepo makes a habit of asking, right at the end of the interview: "How are you planning to deal with these issues you have mentioned to me?" This induces forward thinking, and it is quite amazing how the expression in people's eyes change when they hear it like this. This approach also helps emphasize that the facilitator has not come to the area to solve people's problems for them, but to help them think through how they can solve their own problems.

Now, let us have a look at some participatory methods where you will be applying your sensitive interviewing skills to come up with the information you need for your Scoping Report.

Methods for assessing local resources

The Assets pentagon

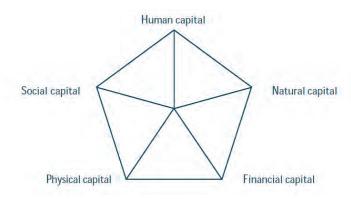
Each local area has a number of different kinds of resources. People use these resources to keep alive and to cope with changing seasons or weather patterns, political change and cultural pressures. Helping people to understand and to value the resources/assets they have, is very important.



There are 5 main KINDS OF RESOURCES/ASSETS

- Natural assets: including land, plants, animals and water.
- **Human assets**: including the skills, knowledge, understanding, labour and good health of local people
- Financial assets: including credit and loans, credit unions and government support as well as regular inflows of money such as remittances, pensions and other social grants
- Social assets: including the culture, traditions, organizations, friends and extended family.
- Physical assets: including buildings, tools, roads, water pumps and transport. It also includes access to information.

Assets Pentagon



These resources can also be called 'assets' or the 'capital' of an area. We can fill them in and present them in an 'assets pentagon'.

Pentagon:
Five sided diagram.

This kind of resource analysis is central to a process known as the **Sustainable Livelihoods Framework** (IFAD, 2000) and provides us with a framework to analyse a whole lot of complex information from a homestead, group or community.

For now let us look at the example of Mrs Mdletshe from Hlabisa, KZN). This information could be filled into the assets Pentagon as a way of presenting the information. The resource/assets information of the entire area could also be used when the facilitator is preparing a scoping report. A big scale presentation drawing of the assets pentagon is often a useful presentation tool at report back meetings (see Activity 9).

Table 4: Livelihoods assets of an example household (Mrs Mdletshe, Hlabisa, KZN)

Human	Natural	Financial	Physical assets	Social
assets	assets	assets		assets
She can do physical work (labour). Little education.	She does not own land. She has some access to common property/communal resources. She does not own livestock.	She is unemployed. No access to credit. She rents out one of her rooms. She receives 2 child grants for looking after orphans.	Poor housing. Poor water supply. Poor communic ation facilities.	Low social status. Discrimination against women. Strong links with family and friends. Traditions and reciprocal exchanges. Belongs to a community garden group.

(Photo: Erna Kruger, 2008.)

In the next sections we are going to consider a number of participatory processes that will help us to analyse (as a group) what resources are available, how we are using them, what the issues are and what potential solutions there could be to the issues, or actions for positive change.

Most of these processes can be used at village, group or household level. You can even use them as an individual to help you to better understand people's situations.

Finding out about natural resources

In a rural or farming environment, natural resources are a very important aspect of peoples' lives. People depend on their environment to provide their basic needs of shelter, water and food. They also use resources for productive activities.

An ongoing challenge for people in an area is to use the available resources in ways that are sustainable. There are many examples in South Africa and elsewhere that people in rural areas have developed good practices and are using their resources responsibly. When you work with people in a community, try to find out as much as you can about their traditional or indigenous practices. There are – of course – also many examples of poor resource use actions, and these will also become evident when you start to interact with people in an area.

Participatory Rural Appraisal (PRA) methods and techniques (Chambers, 1992) can be used to assess the natural resources in an area. These are methods that have been designed to work with groups of people to help them to analyse their situations and to come up with potential actions for change and improvement. In this context, we use the term "assess" to mean observing, describing and recording the present local situation. You will use a variety of skills such as observing, listening, interviewing, discussing and reflecting in order to get a clear picture of the current situation.

To assess or analyse the issues and relationships within resource use (e.g. access and availability), we will look at three PRA methods that you could use with your households, namely:

- Resource Mapping;
- Transect Walks; and
- Ranking and scoring.

Resource Mapping

We can start with drawing a resource map. Resources might be available, but certain aspects such as cultural taboos or ownership could result in them not being accessible to people who need them.

A resource map is simply a drawing of the area, which can be used for different purposes. Resources maps can be used to:

- Get a clear picture of the physical features of the area (e.g. hills, rivers, wetlands, roads, erosion, etc.);
- Indicate the natural resources that are present (e.g. forests, grasslands, grazing areas, fields, land-use, types of crops planted, areas under cultivation, irrigation, etc.);
- > Indicate **problems** in land-use and resource availability, or **access** of different groups to different resources;
- Compare the same area at different times. This is called a historical resource map; and
- > Show where actions can be taken to improve the situation. In this case the resource map can be used as a **planning tool**.

The following example shows a resource map of Nthunzi in KwaZulu-Natal.

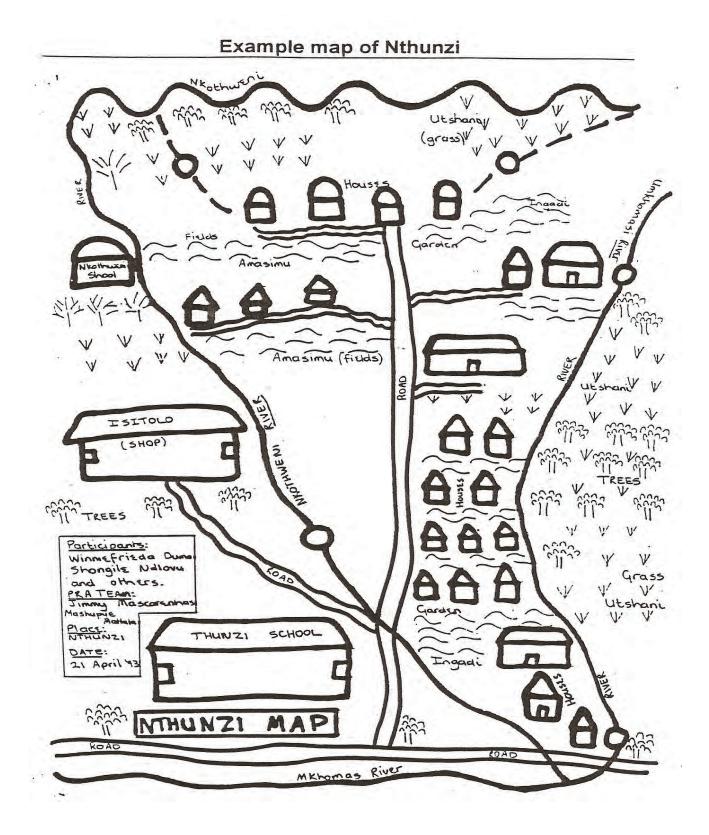


Figure 3: Resource map drawn in Nthunzi, Bulwer, 1993. (Eds Cousins, T. & Kruger, E. 1993)



Activity 2: Read a resource map

Aim

Extract information from a resource map.

Instructions

Examine the map (see Figure 3) to find answers to the following questions:

- From how many rivers can the community draw water?
- Which natural resources are present in the community?
- What physical features are shown?
- What do you think the purpose was of drawing the resource map?

Time: 1 hour

Making a resource map can help people in an area to get a clear picture of the physical features and resources that they consider important. Maps drawn by local people can show their perspective and reveal much about their local knowledge of resources, their use of the land, settlement patterns and who controls and makes decisions about the use of resources. The primary concern is not to draw an accurate map, but to get useful information about local perceptions of the natural resources.

Drawing the map and the map itself is only the beginning of the process of finding out about availability and present use of resources. The map is a tool that can be used to stimulate discussion. It is when members of a household or community discuss the issue that real learning takes place that can lead to improved use of resources.

By doing the next activity, you can practise doing a resource map of an area, which you know well. This is a group activity.

It is when members of a household or community discuss the issue that real learning takes place that can lead to improved use of resources.



Activity 3: Draw a resource map of an area

Aim

To practise making and using a resource map.

Instructions

Practise in a group of 3-5 people how to make a resource map that focuses on specific features and issues in an area.

Here are suggestions to guide you through a process consisting of the following steps:

$Plan \rightarrow Do \rightarrow Reflect$

Plan

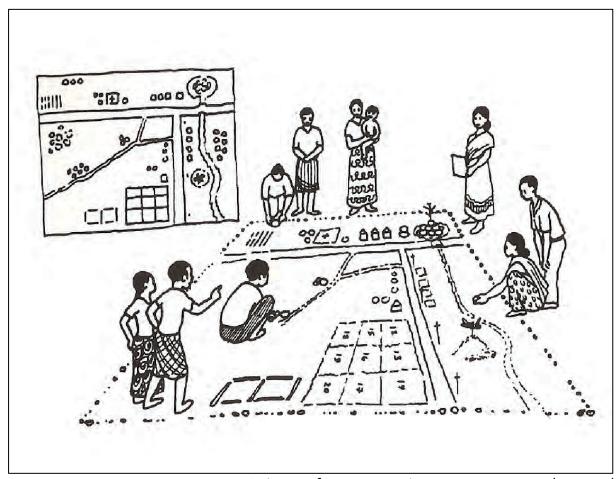
- 1. Decide on a suitable place where you can do your resource map. It can be at one of the group members' home village, or an area all group members know.
- 2. Discuss in your group why you want to draw this map. What is its purpose? Choose two or three features and issues that you will do on your resource map. If you try to show too many features and issues, it will become confusing. Look at this list for ideas:
- -Physical features: hills, valleys, large rocks, and erosion
- -Types of natural vegetation such as a grassland, bushes, trees and wetlands
- -Cultivate areas showing cropping and crop types
- -Land-use such as gardens, fields, grazing areas, and forests
- -Rivers and water points
- -You can also include the village infrastructure such as the boundary, roads, houses, schools, markets, clinics, churches and special places such as sacred sites.
- 3. Draw up a list of questions to which you want to find answers. Here is a list to give you an idea:
- -What resources are plentiful?
- -What resources are scarce?
- -Where do people go to collect water and who collects water?
- -Where do people go to collect firewood and who collects firewood?
- -Who looks after the gardens?
- -Do people have livestock and who looks after them?
- -What kinds of livestock are there?
- -Where do the livestock go to graze?
- -Which resource do people have the most problems with?
- -What is the problem?
- -Why is there a problem?

What is the community doing to solve the problem?

Do

- 1. Take a walk through the area and make a note of the features and issues you want to investigate.
- 2. As a group, you can make a drawing of the map on the ground first. Mapping on the ground has a number of benefits:
- -It is easily visible to the group
- -It encourages a lot of discussion
- -It allows for a lot of detail
- -It can be changed or corrected easily
- -You can add to it, as the space on the ground is not limited.

Of course the big disadvantage is that you cannot take it away. If you want to keep a copy you have to write it onto paper. The diagram below shows a group creating a resource map on the ground and it gives an idea of what it looks like on paper.



A picture of a group creating a resource map on the ground

- 3. Draw your map on paper. You can use colours to show different features.
- 4. The map is a tool, which should lead to a discussion about resources. When the map is completed, discuss in your group what you have observed about the present availability and use of resources in the area. Use the set of questions you formulated to guide the discussion.

Reflect

Reflect on your resource mapping activity and write answers to the following questions:

- 1. What worked well?
- 2. What did you find most difficult?
- 3. What changes would you make to a resource mapping activity in the future?
- 4. What have you learned from your experience?

(Editors: Kruger, E; Mearns, M; Randall, C., 2009)

Time: 5 hours

The Resource Map is a good tool with which to begin a process, because it is an easy exercise that initiates dialogue among the community members and the facilitation team members.

A large open space should be found and the ground cleared. It is easiest to start by placing a rock or leaf to represent a central and important landmark. Participants are then asked to draw other things on the map that is important in the village.

Participants should not be interrupted unless they stop drawing, in which case questions can be asked such as whether there is anything else of importance that should be added.

Finally, the facilitator may want to ask participants to indicate some things they would like to see in their village that are not currently on the map – in other words to draw a picture of what they would like the future to look like. This allows for some initial planning ideas and encourages people to begin contributing their thoughts at an early stage in the participatory process. (Wilde, 2001).

Transect Walks

A very useful PRA method for collecting information about an area, is to take a transect walk. It consists of walking through an area and paying attention to specific environmental features, resources and human activities, and issues such as water scarcity, soil erosion or any other

problem.

Transect walks are sometimes referred to as observational walks, because they give the people who participate in it an opportunity to observe, discuss and identify issues of concern to the community.

Transect:

Is a straight line that cuts across a piece of land or terrain.

Transect walks may be taken in a straight line using the compass points, e.g. North, South, East or West, whichever is the most suitable; or walks can also meander and follow a particular feature in the landscape such as dongas, trees, water points.

Here is an example drawing or diagram of a transect walk in an area called Tsupaneng in KwaZulu-Natal.

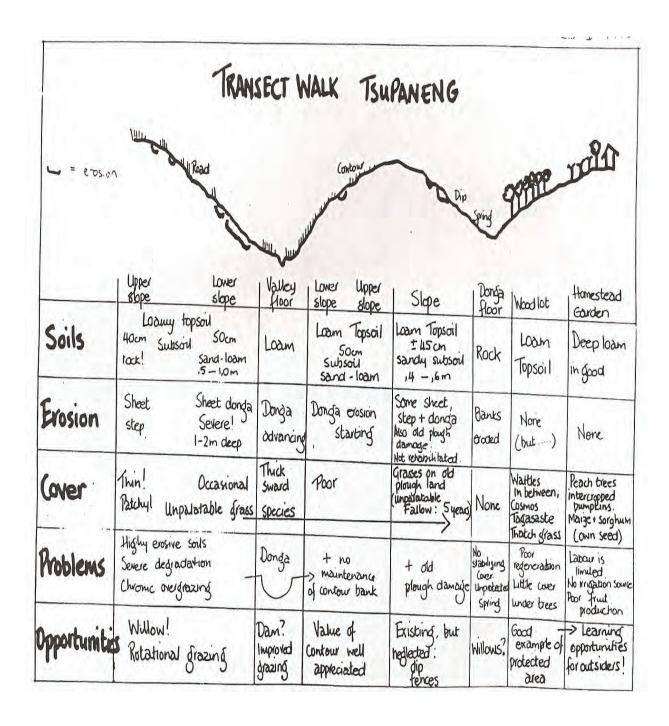


Figure 4: Transect walk diagram, Tsupaneng, KwaZulu-Natal 1993. (Eds Cousins, T.; Kruger, E. 1993



Activity 4: Read a transect diagram

Extract information from a transect diagram.

Instructions

Examine the Tsupaneng transect diagram (See Figure 4) to find answers to the following questions:

- 1. What kind of soil did the group find in the valley floor, the donga floor and the homestead garden?
- 2. What kind of trees and plants can be found in the woodlot?
- 3. What crops are grown in the homestead garden?
- 4. What are the problems in the upper and lower slopes?
- 5. What suggestions did the group have for the valley floor that is now a donga?
- 6. What features and issues did the group focus on in their transect walk?
- 7. Did you have any problems answering the above questions? Explain.

Purpose of transect walks

Before a transect walk is undertaken, you have to be clear about the information you want to gather. The group in Tsupaneng, for example, decided to focus on observing and recording soils and soil erosion, which was a big problem in their area. They also recorded the natural vegetation and cultivated plants that are growing there. In any transect walk, people discuss problems, opportunities and possible solutions, and record these in their diagram.

Transect walks can be useful to:

- > Identify issues related to land such as land use, crops cultivated, local cultivation patterns, local technology used for irrigation, water/plant/soil conservation, erosion, soil types, local vegetation, use of wild plants, and resources in disrepair, e.g. dip tanks, fences, etc.
- ➤ Identify issues related to other resources/facilities such as state of roads, problems and opportunities with water points, plotting water distribution systems, etc.
- ➤ In a village or homestead area it is used to discuss drainage and sanitation, use of back yard space, location of taps, household chores, state of living structures, interactions between different groupings, etc.

You can use transect walks at any point during an intervention or project cycle:

- ❖ Assessment to establish what the present situation is:
- Planning to identify what needs to be done to improve things; and
- Monitoring and evaluation of resource management and development, to check how successful a project has been.



Activity 5: Draw a transect walk diagram

Aim

To practise drawing and using a transect walk diagram.

Instructions

Practise in a group of 3-5 people how to do a transect walk, and finalise a transect diagram that focuses on specific features and issues.

Here are suggestions to guide you through a process consisting of the following steps:

$Plan \rightarrow Do \rightarrow Reflect$

Plan

- 1. Decide on a suitable place where you can do your transect walk. It can be one of the group members' home villages or an area all group members know.
- 2. Discuss in your group what the purpose is of the transect walk and what information you want to gather. Choose 2 or 3 features and issues that you want to explore. Look at this list for ideas:
- -<u>Land use:</u> Crops cultivated, local cultivation patterns, local technology used for irrigation, water/plant/soil conservation, erosion, soil types, local vegetation, use of wild plants, resources in disrepair, e.g. dip tanks
- -<u>Resources or facilities:</u> State of roads, problems and opportunities with water points and sources, plotting gravity fed water system, etc.
- -<u>Village or homestead areas:</u> Drainage and sanitation, use of back yard space, location of taps or water point, household chores. State of living structures, interactions between different groupings.
- 3. Draw up a list of questions to which you want to find answers.

Do

- 1. Take a walk across the area in a straight line and make notes on relevant features that you observe. The idea is to stop at regular intervals, say every 500 meters, or every 10 minutes, or whenever a particularly interesting feature is observed.
- 2. Use the opportunity while you are there to get clarity about the issues and discuss problems and opportunities to investigate.
- 3. After the walk, share the notes you have made with the rest of the group and refine your ideas.
- 4. Involve everyone in the group in making the transect diagram. During this time you will continue to discuss the issues and sharpen your ideas.

Reflect

Reflect on the transect walk and making the diagram:

- 1. What worked well?
- 2. What did you find most difficult?
- 3. What changes would you make to a transect walk activity in the future?
- 4. What have you learned from your experience?

Time: 5 hours

Ranking (preference and pair wise) and scoring (simple and matrix)

Ranking and scoring methods give participants an opportunity to assess the relative importance of different items. It elicits people's own assessment of a situation, and the importance of features, items and issues within this situation.

Through interviewing or questioning the assessment criteria used (the information or opinions used to make the assessments/judgements), a whole lot of information is gleaned. This helps the facilitator and the local people to all deepen their understanding of the situation. Our reasons for making choices are not always very clear – not even to ourselves.

If someone says for example "I prefer oranges to apples" and you then ask them why, they may respond unexpectedly with an answer such as the one below:



World Vision participant, Bergville KZN.

(Photo: E. Kruger, 2007)

And you thought they would say oranges taste better than apples!!

There are many different ways in which ranking and scoring can be done. Here we will look at a few different processes. Each process has a slightly different intention – and way in which it needs to be facilitated. Once you start to feel confident with ranking and scoring and you have facilitated these processes with a number of groups, you can start to use your own variations – the process is flexible. For the moment, let us look at the following ranking and scoring methods:

- i. Preference ranking
- ii. Pair wise ranking
- iii. Simple scoring
- iv. Matrix scoring

i. Preference Ranking

Ranking usually involves placing items in order of importance (1st, 2nd, 3rd, etc.). Preference ranking is the simplest form of ranking where a list of needs, desired outcomes, objects or features are arranged in order of priority or preference. Each person basically votes yes/no or 1/0 (one or zero) for each item in the list.

As an example, let us assume we did a **water inventory** with a small group of community members, using a resource map and transect walk exercise. From these two exercises, the following list of issues with water in the area was made:

- ❖ A number of borehole pumps in the area are broken;
- Borehole environments are dirty, muddy and unhygienic;
- Spring sources have been trampled and fouled by cattle and people cannot use them;
- The wetland is not in a good condition and is eroding;
- Flash floods coming down the dongas are washing away the fields; and
- ❖ Water run-off on the roads does a lot of damage.

Now, we may want to prioritize the issues according to urgency for action.

For each item, each participant needs to give a yes or a no (a one or a zero). They can do this by a show of hands, or by placing a stone or a seed or a tick or other mark on a chart where the items are listed.

Let us assume our group consists of 10 people. We will ask them "Which is your most critical issue?" and ask individuals to raise their hands if the issue you are calling out is the most important. Then we will move on to the next issue and ask "Which is your next critical issue or your 2nd most important issue?" and ask individuals to raise their hands if the issue you are calling out is the next most important.

Now our list may look like this:

Table 5: Preference ranking example

Item to be ranked	No of votes for each item	Rank
A number of borehole pumps in the area are broken	9	1
Borehole environments are dirty, muddy and unhygienic	2	5
Spring sources have been trampled and fouled by cattle and people cannot use them	5	4
The wetland is not in a good condition and is eroding	1	6
Flash floods coming down the dongas are washing away the fields	8	2
Water run-off on the roads do a lot of damage	6	3

ii. Pair wise Ranking

This is a slightly more complicated version of preference ranking. Here, each individual compares two items on a list at a time and decides which of the two is preferable. This is done for each pair of items in turn. Remember that the most interesting part of this exercise would be to unpack the reasons why people have chosen specific items, in other words, their criteria for assessment and the reasons for using these criteria.

Let us do an exercise in pair wise ranking:



Activity 6: Do a pair wise ranking exercise

Aim

Practise as an individual or in a group of 3-5 people how to do a pair wise ranking exercise.

Instructions

The key question for this exercise is:" **What are your food source preferences?"** (From a livelihoods project in Niger (Catley et al., 2007). Answer the following questions and fill in the pair wise ranking matrix (See Table 6) below.

If you are working in a group, allocate roles for the group members: one interviewer, one recorder and a few informants.

Now, the interviewer asks the informants to suggest the sources of food in their homesteads or village. Ask them to choose a maximum of six items for this exercise. If there are too many items, then the exercise can become unwieldy.

The recorder may then make the list. Let us assume in this case the list is as follows:

- -Millet (own farm production)
- -Vegetables (own production)
- -Purchased food (excluding cereal bank)
- -Cereal bank (millet) purchases
- -Livestock production (milk and meat)

Then the recorder sets up the pair wise ranking matrix as follows:

Table 6: Pair wise ranking matrix

Food source	Millet	Vegetables	Purchases	Cereal bank	Livestock
Millet	-	Millet			
Vegetables		-			
Purchases			-		
Cereal bank				-	
Livestock					-

The informants are then asked pair by pair which they prefer most. For example, the interviewer may start by asking: "Which food source, between millet and vegetables do you prefer most?" The answer may be "millet" and that is then written into the appropriate block.

NOTE: It does not make sense to compare millet with millet, etc., and therefore the blocks on the diagonal would be left open. Also, the blocks below the diagonal are a repetition of those above the diagonal, and need not be filled.

Now continue to compare the items pair by pair until the table has been completed. The recorder needs to write down all the reasons the informants gave for their preferences.

At the end of the exercise you may want to ask the following reflection questions: Did the criteria and preference lists vary greatly between the informants? Why was this so?

- -What worked well?
- -What did you find most difficult?
- -What changes would you make to a pair wise ranking exercise in the future?
- -What have you learned from your experience?

Below are the actual outcomes for the pair wise ranking exercise that was carried out in Niger. You can compare them with yours and check the accuracy of your exercise. (See Table 7)

Table 7: Pair-wise ranking showing food source preferences in Niger

Food source	Millet	Vegetables	Purchases	Cereal bank	Livestock
Millet	-	Millet	Millet	Millet	Millet
Vegetables		-	Vegetables	Vegetables	Vegetables
Purchases			-	Cereal Bank	Purchases
Cereal bank				-	Cereal Bank
Livestock					-

(Burns et al., 2007)

An overall preference score can then be calculated by counting the number of times each food source was ranked the highest.

See if you can work out what the overall ranking is and fill it in the table below: (The answers are given in small print at the end of this activity)

Table 8: Preference score, based on pair wise ranking

Food Source	Score
Millet	
Vegetables	
Purchases	
Cereal bank	
Livestock	

Answer to preference ranking score: Millet (4), vegetables (3), cereal banks (2), purchases (1), livestock (0).

Time: 3 hours

iii. Simple Scoring

Ranking involves placing items in order of importance, whereas scoring methods assign a value (or a score) to a specific item. Scoring is usually done by using numbers or counters such seeds, stones, nuts or beans to attribute a specific score to each item or indicator.

Example 1

In a food security project, which aims to establish homestead food gardens, you may want to measure the impact of the gardens on household food security. A simple scoring exercise could be done as follows:

- 1. Ask project participants to identify all the food sources that contribute to the household food basket.
- 2. Use visual aids to represent each of the different food sources.
- 3. Then ask the participants to distribute the counters amongst the different variables to illustrate the relative proportion of household food derived from each source.

Now look at the diagram below (See Figure 5) that shows what the results may be of such a scoring exercise (Catleyet al., 2007).

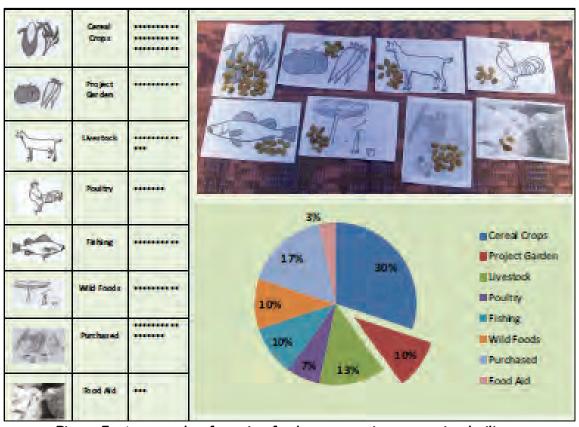


Figure 5: An example of scoring food sources using proportional piling

<u>Top right</u> shows the exercise as it was done with the group: picture cards of the food sources, with the counters (in this case beans) piled on each picture card.

On the left is the matrix of food sources and the number of counters that had been piled on the picture cards.

<u>Bottom right</u> is a pie chart with percentages that have been worked out from the piles of counters for each food source.



A NOTE ON COUNTERS:

When doing scoring on a community level, we usually give people counters such as beans, small stones, etc. It is sometimes difficult to know how many of these counters to give each person that is involved and one does not want to be doing a lot of counting of beans while doing your exercise. Many of your participants may also not be literate enough to be doing lots of counting themselves.

Proportional piling is a nice way around this difficulty. Here the participants are asked to distribute 100 counters (that you have given them pre-counted – their pile) amongst the different variables or indicators in the table/matrix, with the largest number of counters (the largest pile) being assigned to the most important indicator or item, and the smallest number of counters (the smallest pile) being assigned to the least important indicator or item.

Although using 100 counters makes it easier to automatically assign a percentage score to the results of your scoring exercise, it is not essential that you use this many. Often it is quicker to use fewer counters (say 20 for example). As a general rule, you can use 10 counters for every two variables that are being compared.

Questions:

- 1. What percentage of food comes from the project garden in the example given above?
- 2. Which food source makes up the largest proportion of a household's food? What percentage can be allocated to this food source?
- 3. What percentage of food for the household comes from outside the community? (HINT: This is a combination of two food sources mentioned in the example above)

With simple scoring each participant's preferences can be scored, and then added together to create the overall score. In the example above a joint pile of counters was created. Look at the example below to see how the two exercises would differ.

Example 2:

The question asked here is: "What are the most serious constraints to agricultural production in your area?"

Five participants make a list of constraints and agree on five constraints to compare and score. Each participant then scores the constraints individually. They are given 5 counters (stones ...) each. These 5 counters are divided among the five constraints according to each participant's preference. See the Table 9 below for a possible outcome of their scoring exercise.

Table 9: Table of individual participant scoring of agricultural constraints

Constraints	Participants				Total	Ranking	
Constraints	Α	В	С	D	Е	Score	Ranking
Drought	2	3	5	1	2	13	1
Pests	0	2	0	3	1	6	2
Weeds	2	0	0	0	0	2	4
Costs of inputs	1	0	0	1	1	3	3
Labour shortage	0	0	0	0	1	1	5

(RUAF, March 2004)

iv Matrix scoring

In matrix scoring or ranking we are now comparing a <u>number of items</u> with a <u>number of criteria</u> against which each item is scored. (In the previous ranking and scoring exercises, the items were either scored against each other, or against one criterion, such as importance.)

This exercise is often done after the issues of importance to a community or group has been discussed and provides for a more in-depth analysis or investigation of the issues.

Let us continue with our investigation of food sources that we started under the heading of pair wise ranking (Burns *et al.*, 2008).

From further discussions related to the pair wise ranking and scoring of preferred food sources, it became clear that the overall preference for millet from own production was largely attributed to the volume or quantity of food that is produced from this source. The assessment team also asked the participants what sources provided the most nutritious or healthy foods, as opposed to just largest quantities.

Based on the discussion, the facilitation team and the participants agreed on the following four broad categories of food preference indicators:

- 1. Availability (quantity/volume);
- 2. Income earning or savings potential;
- 3. Accessibility; and
- 4. Nutrition/health value.

Participants were then asked to score the five food sources against each of these four food preference indicators.

This was done using visual aids to represent each food source (Remember from Figure 5, picture cards of the food sources were used). A millet stem was used to represent millet from own production, a broad green leaf was used to represent vegetable production, a handful of coins was used to represent food purchases, a small bag of ground nuts was used to represent cereal bank purchases and a bottle top was used to represent livestock production (milk and meat).

After carefully explaining what each visual aid symbolised, the facilitation team asked the participants to use fifty counters to score each of the food sources (millet, vegetables, purchases, cereal bank and livestock) against the first food preference indicator (availability).

The exercise was then repeated for each of the other three food preference indicators. The physical distribution of counters was done by one volunteer, but this was based on group consensus.

Consensus:
Agreement.

Table 10 below shows the outcome of the matrix ranking exercise:

Table 10: Matrix scoring of different food sources against indicators of preference.

	Millet	Vegetables	Purchases	Cereal Bank	Livestock
Availability (quantity/volume)	15	12	5	13	5
Access (easy to come by)	22	8	3	12	4
Income earning and savings potential	12	13	0	8	17
Nutritional value	6	17	6	6	15
TOTAL	55	50	14	40	41

(Catley et al., 2007)

Note: Although livestock ranked the lowest during the pair wise ranking (See Figure 5 above), against specific indicators such as income potential and nutritional value, it ranks much higher than some of the other food sources.

Questions:

- 1. What rank does livestock as a food source have in the matrix scoring exercise in Table 10? (HINT: Compare the totals in the bottom row and rank them, giving 1 as the highest rank and 5 as the lowest.)
- 2. Why do you think the ranking for livestock is different in the matrix ranking exercise as compared with the pair wise ranking exercise?

Many different issues related to resources can be explored using resource matrices. Some examples are:

Uses of different types of water sources (boreholes, rives, springs) for different needs (drinking, cattle, washing);

Matrices:
Plural of matrix.

- > Types of natural vegetation and their uses;
- > Sources of income from natural resources and their uses (or importance);
- Ranking the severity of diseases within the community, and where and how they are treated;
- Different assets in the community and how access is managed (who has access); and
- Different types of crops grown and different uses of these crops.



Activity 7: Draw a matrix ranking diagram

Aim

To practise matrix ranking.

Instructions

Practise in a group of 3-5 people a matrix ranking activity that focuses on a resource issue.

Here are suggestions to guide you through a process consisting of the following steps:

 $Plan \rightarrow Do \rightarrow Reflect$

Transect:

A straight line that cuts across a piece of land or terrain.

Plan

- 1. Decide on the resource issue that you want to explore. It could be land use, water use, erosion, and sources of income. Look at the above list for additional ideas. Choose one that your group can do easily.
- 2. Where possible find a person (informant) who has local knowledge and is willing to discuss the issues with your group
- 3. Then decide on the criteria you want to use to explore these issues. For example, if you want to explore land-use then you might list the following criteria: landownership and access, income generation, food production, wild foods, fodder, firewood, problems.

- 4. Agree on the scale you will use to score or rank the items. You can rank out of five or more; where 1 is the least preferred option and 5 is the most preferred. You can also use the proportional piling method that was described under the heading simple scoring in the text above.
- 5. Collect the counters for ranking. You can use beans, small stones seeds, or any other small objects that are easily available.

Do

1. Prepare your matrix diagram.

Along the top of your matrix, write the categories showing different types of land use. Along the side of your matrix, write the criteria you have listed.

Here is an example of how a group started preparing their matrix and what it looked like when they had completed it:

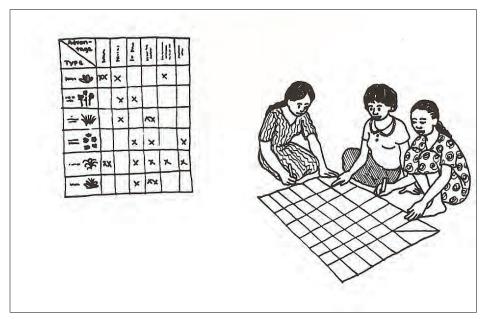


Figure 6: An example of a group busy with a matrix ranking exercise (Pretty et al., 1995)

- 2. Each person uses the counters to show how they would score the items.

 Discussion takes place until there is agreement in the group about the ranking of each item. The agreed number of counters I then places in each block
- 3. The final results are now recorded and the diagram is completed.

Reflect

Reflect on the matrix ranking activity:

- -What worked well?
- -What did you find most difficult?
- -What changes would you make to the matrix ranking activity in the future?
- -What have you learned from your experience?

Methods for assessing stakeholder involvement

Venn diagrams and institutional profiles help us to better understand the role and nature of organisations in a village. We are now looking at participatory methods that will help us with the stakeholders' section of our Scoping report framework (Table 2)

Venn diagrams

Venn diagramming is a method that is used <u>to understand organisations</u> (local and others), their linkages and their relationships. It is often used in a situation analysis or assessment to find out what the roles of the different organisations are, how they get on and how this impacts on what happens in the community. It is often easy to see from this exercise where the gaps or the major stumbling blocks are.

Venn diagrams can be used with <u>individuals</u> and <u>small groups</u>. If you are working with a large group of people, you will have to divide them into smaller groups (5-8 people). You can organise separate focus groups of men and women. Be sure that the poorest and most disadvantaged are included, or have their own groups, as appropriate.

In this exercise, you will use circles of varying size, which you have cut out of paper or carton beforehand.

With Venn diagramming, you can investigate two questions or criteria.



You have to carefully think through which two aspects you want to investigate otherwise the exercise can become confusing and frustrating for participants!

The two criteria are reflected by:

- (i) The size of the circle; and
- (ii) The relative distance of the circles from each other, or from a central point on the chart where they will be placed.

For example the size of the circle could reflect the relative size of the organisation, while its distance from a central point on the chart could represent its impact/importance to daily life in the village.

Or the size of the circle could mean the relative importance/impact of this organisation to village life, while the distance between the circles could show how closely the various organisations work together.

Using the criteria from the last example, i.e. size – relative importance and distance = how closely organisations work together the procedure is as follows:

- 1. First, participants are asked to name the various organisations that have an influence on life in the village, and these are listed.
- 2. Next, participants are asked to choose a circle for each organisation, based on the first criterion, e.g. showing the relative importance of each organisation to the group. The more important the organisation, or the greater its impact on their lives, the larger its circle.
- 3. These circles are then placed in relationship to each other, based on the second criterion, e.g. how well they work together. They can overlap, be next to each other, close to each other or far away from each other, depending on their degree and type of contact in the real world.
 - This means for example if organisations are working together closely, their two circles will overlap. If an organisation is important to a community, but they do not have a good relationship, the organisation is given a large circle, which is placed, far away from the central circle representing your group or community.

The Venn diagram can be traced on the ground, but it is especially clear (and fun) if coloured paper circles are used on a large sheet of paper. As mentioned above, it is helpful to cut out the circles of paper in different colours and sizes ahead of time.



Facilitation Tool 1: Facilitation of a Venn diagram exercise

Facilitation of a Venn diagram exercise

- 1. Start by asking the participants to list the local groups and organisations, as well as outside institutions, that are most important to them. Which organisations and groups work with the community? Are they organised according to economic, social, environmental, other issues? What is the relative importance of the organisations?
- 2. Which groups assist households to overcome key constraints (e.g. related to land, livestock, sickness, nutrition, domestic violence, lack of income)? What services do they provide (information, training, projects, credit, and other kinds of assistance)?
- 3. What groups are exclusively for women? For men? Youth? Are certain groups excluded from some of the organisations (e.g. men, women, the landless, certain ethnic groups)? If so, which ones and why? What are the implications of non-participation?
- 4. Are there any groups that provide advice on HIV/AIDS prevention? Or on living with HIV/AIDS? Or mitigation, e.g. are there support groups or programmes for individuals or households affected by HIV/AIDS? Who has/does not have access to such services? How can the extension services link up with these groups?
- 5. Then, ask the participants to decide whether each organisation deserves a small, medium or large circle (to represent its relative importance). The name (or symbol) of each organisation should be indicated on each circle. (Make sure each organisation has a different colour, if possible.)

- 6. What are the linkages between local groups and outside institutions? Ask which institutions work together or have overlapping memberships. The circles should be placed as follows:
- -Separate circles = no contact
- -Touching circles = information passes between institutions
- -Small overlap = some co-operation in decision making
- -Large overlap = a lot of co-operation in decision making
- 7. Discuss as many institutions as possible and ask the participants to position them in relation to each other. There may be a lot of debate and repositioning of the circles until consensus is reached.

Below is a diagram of what a completed Venn diagram might look like.

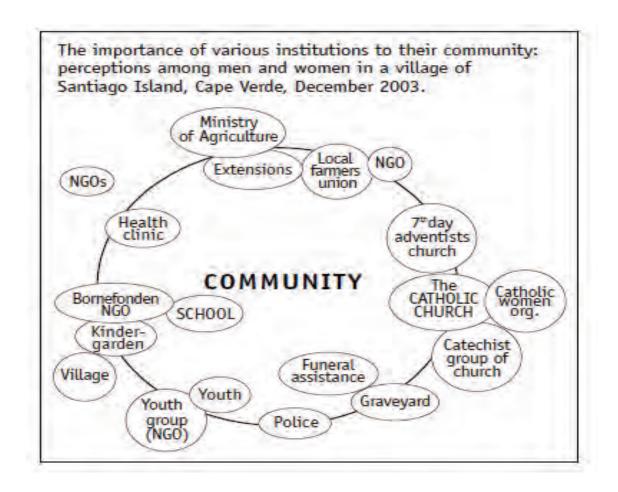


Figure 7: Venn diagram of institutions in a Santiago Island village. (Wilde, 2001)

Institutional profiles

Institutional Profiles are tools that help us to learn more about the nature of the institutions/ organisations identified in the Venn Diagrams. A chart or table is created, and each institution is added: We examine what they have accomplished, and what they would further need to foster their development work.

Whereas the Venn Diagrams reveal the importance of local and other institutions and the degree of interaction between them, the Institutional Profiles show details about how these institutions function, and for what purposes. This information will be very important when the community is planning development activities.

The following organisations or institutions are often active in the broader food security environment, and some of them may also be active in your area:

- Government Departments:
 - Department of Social Development (e.g. grants, soup kitchens, community centres, pre-schools),
 - Department of Health (e.g. mobile clinics, school nurses, Community and Home Based Carers),
 - Department of Education (e.g. National School Feeding Programme, school gardens, local facilitators)
 - Department of Agriculture (e.g. support for community gardens and dip tanks for cattle, food security projects, land care projects)
- ❖ Local Municipality (provision of services such as water, in conjunction with the Department of Water Affairs and Forestry), electricity, roads, support for some projects in the community;
- ❖ Non-Governmental Organisations (NGOs); and
- Community-Based Organisations (especially burial societies, churches, drama groups, women's groups, water committees, etc.).

Below (Table 11) is an example of an institutional profile of a women's group.

Table 11: Institutional Profiles of Jeded Village, Somalia: Women's Organization

Group	Foundation and Goals	Management	Achievements	Need
Women's Organization	Founded in 1991	Chairwoman		
	Goals: -Solve women's problems -Advocate rights of women and children -Participate in implementation of development projectsSolve problems among themselvesServe as link between women of Jeded and aid organizations -Initiate income generating projects -Care for displaced families	-Elected in Congress of women of Jeded -Annual elections for Chair and other leaders -Any woman 20 years or older may be a member -Membership fee is 1000 Somali Shillings -Meets once a month -Links with women's groups in other villages	-Helped to resettle families coming from the Civil War in the South -Sanitation activities -Created income generating projects such as weaving mats -Fund raising for business activities	-Training -Space -Equipment -Income generating activities

(Wilde, 2001)



Activity 8: Create an institutional profile

Aim

To use an example of a known organisation or local institution and to develop an institutional profile for this institution. Design a set of questions that you would need to ask to get the required information.

Instructions

- 1. Think about a local or community based organisation that is WELL known to you. Fill their details in the table below.
- 2. Then write down which questions you would need to ask this organisation to get the required information.

Table 12: Institutional profile

Group	Foundation and Goals	Management	Achievements	Need

QUESTIONS TO ASK THE ORGANISATION
1.
2.
3.
4.
5.
6
7
8
9
10 What are you planning to do to solve your issues?

Time: 2 hours



Facilitation Tool 2: Community action plan -Ideas for running a planning workshop

Community action plan

This is a planning method or process. It can help communities, groups or even individuals to formulate concrete and realistic plans for implementing development activities and identify needs for other services. The action plan builds on the situation analysis or scoping exercise, and should focus on **the development activities most likely to succeed**.

Examples of questions to ask while facilitating an action plan:

- 1. Which plans include activities that will directly benefit women, men or both?
- 2. Which action plans include development activities that will directly benefit the most disadvantaged (e.g. the landless), or most, or all of the community?
- 3. Which benefits/costs will the proposed activities imply for households with chronically ill members or households affected by HIV/AIDS?
- 4. Are there criteria or requirements that would exclude the poorer or vulnerable households from participating? (See note below.)
- 5. Are the time lines, cost estimates and responsibilities well described and clarified in the matrix? What needs to be added or clarified?
- 6. What are the next steps necessary for all role players to take in order to make this happen?
- What are households themselves planning to do immediately?
- What ideas can they come up with to go as far as possible without assistance?
- What are community leaders planning to do next?
- What are the next steps that rural extension workers will take?
- What will other organisations need to do/ commit themselves to?



NOTE: Including the poor:

Barnett & Grellier (2003) quote several examples of project conditions or requirements that have tended to exclude the poorest households from participating, saying:

"There are exciting stories of smallholder farmers across the region who are now achieving improved production and market access, but we have scrutinized those reports to see – do, and if not, then at least, could the hungry also benefit from this? If we don't ask this question rigorously – and act on it right now – then what hope do we have of achieving the MDGs by 2015?"

Examples of project criteria that exclude the poorest households:

- Typically assets are required for project participation in Uganda, Tanzania, Malawi and Zambia:
- Zero grazing: Access to grass and other fodder or land on which to grow elephant grass before the arrival of livestock is required; as is labour to cut grass; shelter and fencing for livestock and access to water.
- Conservation agriculture: Requirements include access to land, access to labour, access to cash or credit for pesticides, equipment, etc.
- Irrigation: requirements include access to land, access to water, access to irrigation equipment, e.g. treadle pumps, drip irrigation system, time for management and maintenance.
- Micro-credit: Requires access to approx. \$0.5 per week, access to savings groups.

Table 13: Community action plan - example format

Priority problem	Solutions	Activities	Beneficiaries	Who will do it?	Costs (who/how)	Duration/ Start

Now, while facilitating an exercise like this is not too difficult, it will be much harder to get people to commit themselves to actions and dates. You are likely to find that most of the problems are likely to be deferred to an outsider or someone else to solve.

In that case you can use the 'river-crossing' role-play below to help people consider their own involvement. This is a simple and useful role-play to use during a community meeting to explore the ideas of development and change and where it comes from.



Facilitation Tool 3: Local involvement in development -Crossing the River Role-Play

Facilitation of Crossing the River Role-Play (Carter, I)

This is a simple and useful role-play to use during a community meeting to explore the ideas of development and change and where it comes from.

Three people are needed for the role-play. One person acts as the outsider who comes to a community and offers to help someone cross the river. The river has several useful stepping-stones. The outsider quickly carries the person on his/her back, but gets tired and leaves them in the middle of the river on a stepping-stone, saying he/she will return later. The person cannot find their way across the river on their own.

The outsider returns and offers to show a second person the way across the river. They move slowly together with the outsider holding the person's hand or pointing to where it is safe to step. They reach the other side safely. The other person is still stuck in the middle of the river.

Discuss the meaning of this role-play with the group. The following questions could guide or assist you:

- What types of outsiders come to our local area to offer help? Do people ever feel like the first person who was left in the middle of the river? Have they begun to take action on some initiative but have then been unable to continue on their own? Why? How could it have been better?
- What was different about the approach of the outsider during the second roleplay?
- What knowledge did the outsider share, and how?
- How can local people make sure that they remain in control of new knowledge and ideas?
- Discuss how sharing knowledge can help many people, while doing something for people can help only a few. After sharing knowledge (of making bread for example), you still have as much to share. After giving away loaves of bread, there are no more left for sharing.



Adding local information into the Scoping Report

Remember that before you started your scoping exercise in the community, you prepared a framework for your scoping report. By then, you had already:

- 1. Done your 'homework', by looking at external sources of information, documents, maps, etc., and noted this information into your Scoping Report Framework.
- 2. Identified, in your report framework, which local information needed to be collected and analysed in the participatory scoping processes with the community, and which methods you were planning to use to get this information.

Then you presented the scoping report framework and your proposed Facilitation Plan to the leadership and other relevant organisations, and undertook that the information would be reported back to them.

Once you completed the scoping exercise with the community, you need to add the new information into your reporting framework. At this point you need to use your judgement to see whether the scoping exercise succeeded in the following key aspects:

- ❖ Did it generate enough information and analysis so that all participants have a sufficient understanding of the food security situation in the village, and the resources (natural, human, financial, social and physical) that people could use to improve their situation?
- Did the participatory process involve a representative cross-section of households (especially the poorest households) and organisations in the village, so that a wide range of viewpoints was considered?
- Did this result in adequate interest among households to participate in the proposed intervention?

If the scoping exercise achieved these objectives, the Scoping Report can now be developed, and the necessary arrangements be made to report on the results of the scoping. In the next section, we will look at this process in more detail.

Participatory reporting: using the Sustainable Livelihoods Framework

Where to report findings?

When you have concluded your scoping or situation analysis/ assessment, it is a good idea to call a meeting of potential participants, local leadership and other stakeholders to present to them the findings and outcomes, and discuss together the validity of these findings and possible interventions. This is also the place where you will suggest the intervention of intensive homestead food production and water management, as a way of dealing with SOME of the constraints and issues raised in your scoping exercise.

At this workshop/ meeting you can also make a call for initial homestead volunteers who would be interested in participating in a learning and mentoring process. You can augment this list later with other volunteers or interested homesteads suggested by role players and stakeholders. Examples could be the home-based care group, vulnerable families who are part of a feeding scheme or soup kitchen. Government Departments (Social Development, Health), HIV/AIDS support groups, farmers' organisations and the like could also help to identify homestead volunteers.

Who is reporting? Those ready to say: 'I am/we are going to...'

The facilitator should be careful NOT to always be speaking on everyone's behalf. In participatory processes it is customary for the local people who do an analysis, to also report back on it to the village meeting.

Where practical, this same principle should be carried through to reporting to leadership structures (especially in their own village) and where possible, also with official structures.

When village people do the reporting, they need to do so as fully mandated representatives of those who participated in the analysis.

Reporting carries the most weight (and generates the most energy) when the reporting is done by a person who is ready to say: "I am/ we are going to..." This implies the following:

- 1. The speaker has the authority to speak on behalf of him/herself or on behalf of the group he or she is representing; and
- 2. He/she/they are committing themselves to act on their decision.

The content of reporting should also be action-oriented:

- ❖ First: what I/we are planning to do, and by when (i.e. without outside assistance);
- ❖ Then: what we need "you" and "others" to do so that I/we can do more;
- Encourage them to be as explicit as possible about timing (immediate and longer term goals); and
- ❖ Ask them to describe the expected impacts of their planned actions. This implies a visioning process, or reinforcement of the vision, thereby getting themselves and others on board with the dream. It also provides the facilitator an opportunity to mitigate unrealistic expectations.

What to report: The building blocks for sustainable livelihoods – assets

Using the assets pentagon to report on the Development Context information

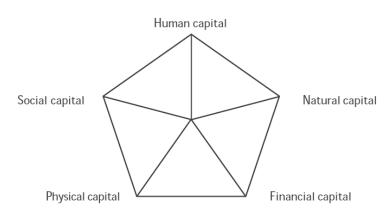
For this exercise, you will take the information you gathered on the development context for the area, as shown in the excerpt of your Scoping Report framework table below.

Table 14: Using the Scoping Report framework

Issue	Description	Questions that are being answered	Methods used for analysis and reporting
Development context	For learning about the economic, environmental, social and institutional patterns that pose supports or constraints for development	What are the important economic, institutional, social and environmental patterns in the village or community? What is getting better? What is getting worse? What are the supports and constraints for development?	Natural resource assessments (Chapter 5) Resource mapping (Chapter 2) Transect Walks (Chapter 2) Assets pentagon (Chapter 2)

Take the information you gathered in your natural resources assessments section (such as rainfall, soil types, general farming, run-off potential), and your resource mapping and transect walks, and summarise them into the assets pentagon from the Sustainable Livelihoods Framework.

Here is the assets pentagon diagram to remind you what it looks like. We considered the five elements of this pentagon at the beginning of the scoping and situation assessment section of this chapter.



In the Sustainable Livelihoods Framework (SLF) the Asset Pentagon (DFID), is used to visually represent information about people's livelihood assets. It therefore shows the important inter-relationships between the various assets for a household or a community.

Let us now analyse the five livelihood assets (natural, human, financial, social and physical): Then we can do Activity 9.

Table 15: Analysis for the Asset Pentagon on the Sustainable Livelihoods Framework

Table 15: Analysis for the Asset Pentagon on the Sustainable Livelihoods Framework				
Social	What are they?	How can we increase or provide benefit to these assets?		
	Horizontal and vertical networks, such as farmers' associations, municipal forums, etc. Membership of groups. Relationships of trust, reciprocity (ubuntu), and exchange.	Improve internal functioning of groups. Extend external linkages. Mutual trust makes working together easier		
Human	What are they?	How can we increase or provide benefit to these assets?		
	Peoples' skills and knowledge. Their ability to labour/ work. Good health.	New options for supporting information networks. Compliment existing knowledge. Increased health and nutrition. Increased ability to work, labour saving technologies, or more efficient ways of working.		
Natural	What are they?	How can we increase or provide benefit to these assets?		
	Natural resources, e.g. land, water, plants, animals, air, and the quality and sustainability of these. Resource flows, e.g. nutrient cycle, erosion protection. Natural shocks, e.g. droughts.	Conserve resources and biodiversity. Provision of services; supply and access. Support to market development. Remember: Organisations and processes exist that define how natural capital is used.		
Financial	What are they?	How can we increase or provide benefit to these assets?		
	Money, availability of stocks and savings, and liquid assets, e.g. livestock. Access to and use of credit. Regular inflows of money, remittances, pension, etc.	Savings and lending schemes; institutional stability is important. The flow of remittances in families is important.		
Physical	What are they?	How can we increase or provide benefit to these assets?		
	Basic infrastructure and producer goods (tools, equipment). Transport, shelter, water, energy infrastructure. Access to information.	Basic needs to be met as a priority. Issues of access, and processes for use and maintenance of infrastructure needs attention.		

People use the assets that they have to survive. They use different strategies for survival. These strategies depend on their access to assets, their vulnerabilities and opportunities, and the livelihood outcomes that they want or need.



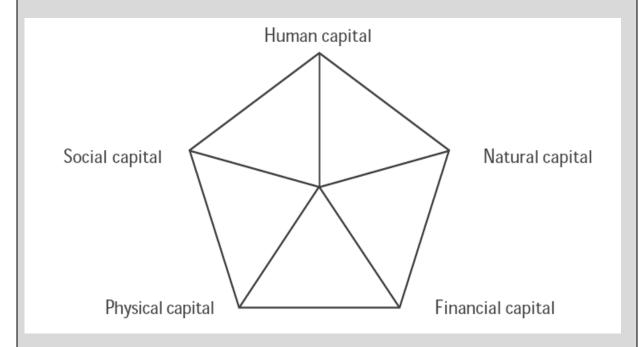
Activity 9: Doing a Sustainable Livelihoods assets analysis

Aim

To explore the different types of assets in the area, take the information you have gathered and fill them into the assets pentagon. In this way information can be presented in a report or when enlarged in a report back meeting by participants themselves.

Instructions

- -Make a list of each type of asset that you can think of, from your information.
- -Work out roughly what you want to include for the different assets in your diagram.
- -Fill in the assets on the diagram.



- -Make arrows to represent where the asset is increasing or decreasing. Indicate whether the resource is abundant or scarce.
- -This diagram can now be drawn on a large sheet of paper to be presented in your workshop meeting.

Time: 2.5 hours

Finalising the Scoping Report

You can now add the institutional profile and stakeholder analysis to your report and your report back. Any other exercises, such as matrices, flow diagrams and farming systems diagrams can also be added. The community action plan and volunteer listing concludes the workshop.

Most probably, you would want to adapt the framework for the Scoping Report as a result of the information that emerged during the scoping exercise and the discussions at the report-back meeting. That is normal.

The Community Action Plan builds on the findings of the scoping exercise, because villagers do this planning during the community report-back meeting, with the scoping results fresh in their minds.

The preliminary Facilitation Plan for homestead food gardening can now be refined by aligning it to the findings of the scoping exercise and the relevant portions of the Community Action Plan.

The first steps in creating an enabling environment in the village have now been taken. It is worthwhile to consider how continued focus on an enabling environment can assist the implementation processes.



2.4 Creating an enabling environment in the village

Cultivating local awareness and support for household self-help efforts

The scoping exercise goes a long way to create local awareness and support for homestead food gardening. This does not apply only to households who may potentially decide to participate in the learning and gardening process, but also to their neighbours and leaders.

You need the agreement of the local leadership. Build up relationships with them. Make sure you are aware of all the important people – not just political leadership, but also traditional leaders, leaders of other community groups and religious leaders of all faiths.

The scoping exercise provides one in-depth way of engaging and getting agreement from the local leadership. If this is difficult in your area, due to conflicts or lack of organisation for example, the very least you need to do is to inform the local leadership of your intentions.

One of the hardest things for poor people, is that almost anything they do which is slightly out of the ordinary, tends to be viewed with suspicion.

Example 1:

When Eva Masha in Sekhukhune, Limpopo started to dig an excavation to build her own underground rainwater tank, people walking by, day after day, for weeks on end, ridiculed her. They were asking cutting questions about what crazy thing she was trying to do now, and so on. Many others would not have held been able to continue as determinedly as she did, and complete her excavation and build the tank. Today, thanks to her perseverance, many other households in her own village and across the country have rainwater tanks like hers.

Example 2:

When five women in northern Limpopo started digging planting trenches in their backyards to establish their homestead food gardens, they were viewed with severe suspicion. Other villagers accused them that they were "digging graves to bury our children." To counteract these suspicions, once they had harvested their first huge spinach leaves, one of these women took a bunch of beautiful spinach to the local radio station to be interviewed so that the whole area could hear that there was indeed 'method in their madness'. The radio jockey said on air that he had never seen such huge spinach leaves in all his life!

The facilitator should be aware of this tendency to belittle and put down poorer people, and should continually be on the lookout for opportunities to affirm the good work of participating households – to themselves and to the community at large.

Here are some ideas that help with this process:

- If leadership is sympathetic, they can be made aware of this difficulty and asked to do their part in providing moral support and recognition of households' selfhelp efforts;
- Occasional reporting to leaders and other organisations keeps them aware of progress and problems, and gives the households a chance to talk about what they have achieved and still plan to do; and

Celebrations like harvest festivals, where people display and celebrate their achievements, are very useful, and great fun for all.

Sometimes, leaders may also offer physical support. This is usually most welcome, but care should be taken that the promised help is shaped in such a way that the process with the households will not get stuck if these commitments should fail to materialise. Also, the assistance should in no way take any of the hard-won control over their livelihoods away from the households!

Facilitator's note:

Take care not to fall into the trap of singing the praises of only a single successful individual or household, as this quickly creates jealousy and resentment among other households.

Support groups like Garden Learning Groups



'Human beings of all ages are happiest and able to deploy their talents to best advantage when they are confident that, standing behind them, there are one or more trusted persons who will come to their aid should difficulties arise (Bowlby, in Braun, 2003).'

The establishment of Garden Learning Groups (or support group with whatever name is preferred by the member households) creates a 'safe circle of friends' for participating households. This is one of the most important elements of the 'enabling environment' that a facilitator can help create for disempowered households.

The establishment process and typical tasks of a Garden Learning Group are laid out in the diagram below and discussed in the following sections.

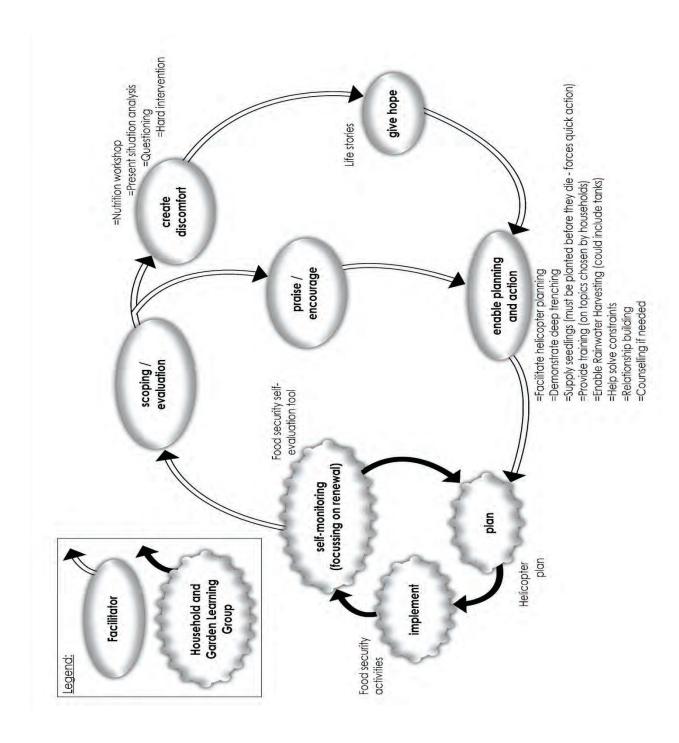


Figure 8: Establishment and tasks of a Garden Learning Group

2.5 Learning and support processes with

Garden Learning Groups

Waiting for change to be brought into the community by outsiders may take a very long time indeed. It may also not bring the changes that people long to see. It is possible for a small committed group in a community to bring about real changes for the better, on their own. This is called mobilisation.

As discussed above:

- ❖ The support of local leaders is very important in the process of mobilisation; and
- ❖ By creating a local support group (e.g. Garden Learning Group), the mobilisation of households, the learning workshops and follow-up support can be better coordinated; and the support group can help maintain sustainability even after the facilitator completed his/her work in the area.

Establishing Garden Learning Groups

A Garden Learning Group would normally not exist yet, as it will be created as part of your facilitation process. However, it is important to find out what local interest groups exist, and what they do. There is the possibility that an existing forum could function as a Garden Learning Group, but even if not, it has to be debated and agreed how a new Garden Learning Group would relate to existing organisations to nurture harmonious relationships in the community.

The role of the Garden Learning Group to the member households is:

- To provide a safe base of friendship for member households, to share experiences among themselves and to provide mutual moral support;
- To reach out to more and more food insecure households to spread the message of hope and skills for food security;
- To mobilise outside support to the group and/or specific member households as needed; and
- 4. To do **regular internal review** (See Table 21: Self-Evaluation Tool) and replanning to ensure renewal and continuity of the group.

Remember the importance of harmony and good relations to help support the confidence of the mothers/caregivers of food insecure households.

Joint planning with a Garden Learning Group

An introductory session is held with households and community members who have shown an interest in a focus on gardening. All people who have shown an interest are invited.

At this stage, the season-long 'learning group approach' is introduced to provide households with training in rainwater harvesting and intensive food production. The content and timing (schedule) of the **learning workshops** are agreed with Garden Learning Group members in accordance with their own learning needs. The processes used to identify and recognise prior learning (RPL) and decide the learning content, are described in more detail below. **Household experimentation** and **follow-up visits** to the household gardens form an integral part of the learning process.

Later in the season, once the learning processes are running smoothly, and households' gardening is in full swing, the facilitator can help the Garden Learning Group to:

- Plan their own outreach activities; and
- ❖ Introduce regular self-monitoring and re-planning by individual households and the Garden Learning Group itself – as a way to ensure renewal and increase the chances of sustainability for the gardens and the support group.

The Learning group approach, workshop content and schedule

The recommended learning approach for homestead food gardening is called experiential or action learning. It is a hands-on, interactive learning process and is shown in Figure 9 as the action learning cycle for farmer groups.

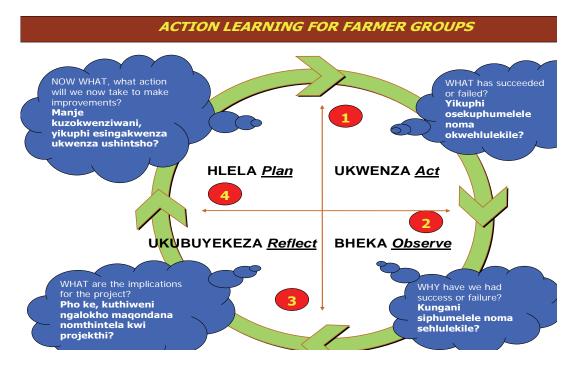


Figure 9: Action learning cycle for farmer groups

In this process we analyse a situation (observe), make a plan, act on that plan and review how well the action has worked, so that we can go into the next cycle of observing, planning, acting and reviewing. It is an ongoing cyclical process.

This cyclic process fits into the overall facilitation of the Garden Learning Group in the following way:

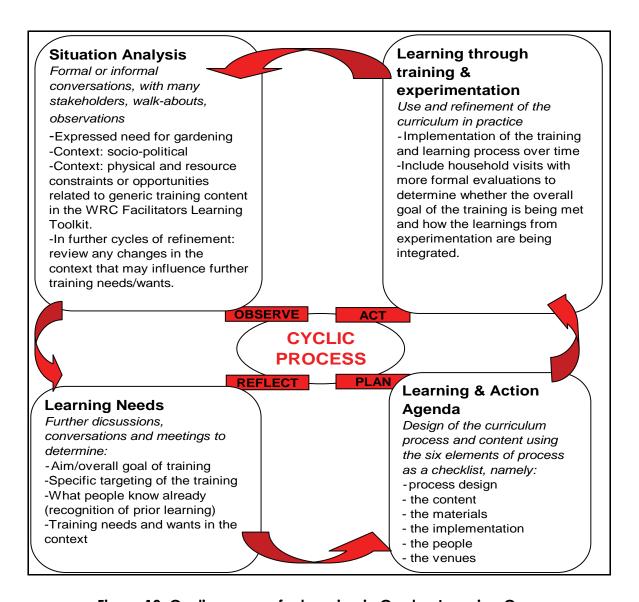


Figure 10: Cyclic process for learning in Garden Learning Groups

Figure 10 shows us that there are <u>four steps</u> in the process:

- 1. A **situation analysis** (this aspect was covered in detail in section 2.3 Scoping);
- 2. A learning needs assessment is done with the prospective learners (households) themselves. It includes a skills audit to enable recognition of prior learning (RPL). In the process it becomes clear what participants want and need to learn; also what they want and can expect from the process. They define their learning agenda/ training needs. The skills audit refers to a group process through which members can express their know-how (what they know well and can do already) in gardening. This provides a way to recognise prior learning (RPL) in the group and to avoid repeating information that is known.

- 3. Development of a **learning and action agenda**; which is the design of the workshop content and schedule. This involves picking content from this resource pack that suits the group's learning agenda and finding other relevant information if it is required. The process also incorporates the learning groups' own experimentation (household experimentation) throughout the learning plan. Also, ask the households whether any specific problems are arising and where appropriate and possible adapt the learning agenda to cover these issues.
- 4. Implementation, namely learning through training and experimentation.

Determining the training/learning needs of the group

It is important to find out from people what they know already (recognising their prior learning) and what they would like to learn. This needs to be done in a participatory way with all the group members.

It is important to distinguish between <u>resources</u> that are required (such as fencing and water) and <u>learning</u> that may improve the situation (such as learning to use the water we do have as well as possible). These training needs, combined with the skills audit or finding out the prior knowledge of the group, will then give you a clear idea of the content you will need to pick from this resource pack that is the most relevant to the group. Be prepared that you may also need to find some information/content from other places (an example here could be the use of commercial fertilizers in home gardens – this information is not included here).

Once you have decided on the content, then it is possible to design the workshops and household or farmer experimentation for the Garden Learning Group.

Garden Learning Group Processes

The learning group process is set up to run throughout a growing season (or even two if possible, in other words 9-11 months). Individuals come together to learn and exchange ideas, but do their work in their own homestead yards.

- 1. Each workshop is held at a different individual's homestead and is designed to take approximately five hours. Resource materials to be used in these workshops are included in the Handouts: Homestead Food Gardener's Resource Packs attached to the end of this Resource Material.
- 2. Household experimentation is introduced as a central learning process and members are expected to try innovations out at home and report back on their progress to the group in each workshop session. This process worked very well as a learning tool and many members developed a good ability to try things out and observe and analyse their results.
- 3. The facilitation team should also assist members of the learning group to purchase fruit trees at low cost, by ordering in bulk from commercial nurseries, if this is at all possible.

Workshops are designed to fit into the seasonal and learning requirements of the learning group members. Different aspects may be emphasised. Starting with a discussion and analysis of nutrition however is important, and provides the basis for the motivation to implement more intensive food production approaches.

- 1. The **helicopter planning process** should be included early on in the series of workshops. It is revisited and new ideas are added in subsequent workshops. Elements that could be added include trench beds, rainwater harvesting run-on ditches, planting of fruit trees and wind breaks, for example.
- 2. The **household experimentation process** is usually introduced during the second workshop, so that experiments can be designed for each subsequent workshop and new ideas that are introduced. Household experiments could include trench beds, making and applying liquid manure, making and applying a pest or disease control brew, using deep irrigation, as examples.

Below is an example of what the training process could look like with potential resources required.

Table 16: Training process for intensive food production: An example

Outline of workshops	Notes of the workshop	Resources Required
Nutrition	Discussions are held on food types and participants analyse the gaps in their nutrition. Diversity of food is introduced by looking at traditional foods and new and interesting crops that can be introduced. Each participant makes a list of new crops and foods they will introduce in their gardens to balance their nutrition.	Seed and examples of interesting homestead crops for people to try.
Seedling production	This assumes people are starting gardening from scratch, but also introduces the central design element of trench beds and run-on ditches. The trenches are prepared as seedling beds and a slightly fiddly crop such as planting of carrots demonstrated.	Materials for making trenches: some manure, mulch, etc. is brought if it is in short supply. Seeds for planting are also provided.
Fertility	Supplementary methods of natural fertility enhancement are discussed, as are soil types and their management. The design of a run-on system to the garden from the rest of the homestead is tackled.	Materials for liquid manure, examples of soils.

Agricultural Water Use for Homestead Gardening Systems – Resource Material

Outline of workshops	Notes of the workshop	Resources Required
Fruit Production	Demonstration of fruit tree planting, delivery of trees. Input on different methods of propagation (cuttings, seed, grafting), pruning and pest and disease management.	Fruit trees are subsidised. Seed and cuttings provided, as is manure/compost for planting. Secateurs and wound heal is provided for a pruning demonstration.
Pest and disease control, including windbreaks	Integrated pest management is emphasised, as is making brews for pest and disease control from natural ingredients. Common problems in the area are discussed, and solutions suggested.	Materials for making pest and disease control brews. Windbreak plants are supplied.
Garden layout, run-on and bed design.	Design of gardens is covered in detail; as well as elements in the gardening process and how they work together; complete rainwater harvesting system is tackled (including storage).	Tools for digging the run- on ditches (e.g. spades, picks, etc.) are brought. Materials are brought for making line-levels to measure out contours.
Irrigation	Concepts of irrigation, water in the soil and water management emphasised.	
Processing, value adding and seed saving, AND Celebration!	Discussions on value adding and processing. This could include demonstration of solar driers and processes such as blanching, pickling, jams, preserves, freezing (if appropriate), etc. Seed exchange is another option (and takes a full workshop). Here participants bring seed they have kept to exchange with each other. The session is accompanied by an input on seed saving and discussions on the importance of managing local sources of seed.	Seeds for exchange are brought, materials for processing and refreshments are provided.

More detail on the household learning content and facilitation of the workshops is provided in section 2.7 below. But first we will discuss the processes of Helicopter Planning and household experimentation that you will use in the learning workshops.

Mind mobilisation and helicopter planning

Helicopter planning is a visioning exercise. It fits into a broader process of an individual situation analysis. Here we will look at the process of mind mobilisation as one very suitable approach.

Introduction to Mind Mobilisation and Visioning

The term 'Mind Mobilisation' was first used by researchers of the International Water Management Institute (IWMI) to describe both the *philosophy* and the facilitation *methods and approaches* used by Ma Tshepo Khumbane to lead indigent (poor) households on a journey to food security. Mrs Khumbane is a social worker by training and devoted more than four decades of her working life to help women with malnourished children to stand up to apathy, helplessness and scorn, and to take control of their lives.

Why is Mind Mobilisation necessary?

When the mother of a house consistently fails to put food on the table for her dependants, this has deep and severe impacts on her psychological well being. She feels ashamed of herself, helpless and powerless to do anything about the situation. When this persists long enough, she loses hope and becomes apathetic, because she no longer believes there is anything she can do to change the situation. She often withdraws from community life to avoid the contemptuous glances and nasty remarks of neighbours. This is one of the reasons why the most needy are seldom to be found in village meetings where poverty relief programmes are introduced and discussed.

Even when sufficient effort is made to ensure that she hears about opportunities, the battle is far from won. She may have been in a state of apathy for years and would need counselling and encouragement to change her outlook on life and her patterns of behaviour – and even then there is no guarantee that she will hold onto the hope. Mrs Khumbane's methods are based on her deep understanding of these realities in the lives of food insecure women.

As a young social worker, many years ago, Ma Tshepo realised how utterly pointless and indeed counter-productive it was when nurses at rural clinics would scold a mother because her child has 'kwash' and would angrily instruct her to 'go and give the child milk!'. Even today, many rural mothers dread going to the clinic. They

cannot understand how their children could have 'kwash' if they are feeding them in the traditional way (see Nutrition Workshop Outcome in Chapter 3), and anyway, no matter how scared they may be of the nurse, they simply don't have milk to give the child – not on that day, nor on the many days to come until the next clinic visit.

Through her life's work, Mrs Khumbane has shown that instead of scolding and scorn, people need hope and

encouragement, coupled with practical skills to overcome hunger. Mind Mobilisation aims to rekindle the hope and open the mind to absorb the practical skills of low-cost organic production methods and rainwater harvesting to fight hunger at home. This is the women's "War on Hunger".

Kwashiorkor (See Chapter 3 for detailed discussion on malnutrition)

How does Mind Mobilisation work?

The International Water Management Institute (IWMI) studied Mrs Khumbane's approaches for several years, in an attempt to identify each method, understand its application and relevance, and to establish whether there was a typical sequencing in the use of the methods that is most likely to lead a person to self-reliance, food security and a more stable and fulfilling personal and family life.

IWMI's research found a strong correlation between Mrs Khumbane's approach and the counselling approaches, which were first, developed by Alcoholics Anonymous and later adopted to assist individuals on their difficult journey out of substance abuse of all kinds.

It is important to understand that Mind Mobilisation (MM) is essentially a personal growth process. Several important steps need to take place in the individual's mind, and for this the sequencing is important. However, depending on the individual case, more or less intervention may be necessary to guide and support the individual through various parts of this painful but liberating process.

It is a well-accepted fact in substance abuse counselling that the healing process cannot start until a person admits to him/herself that he/she has a problem. When the individual reaches this point of admission, it is usually followed by feelings of helplessness and fear. A significant feature of both the AA and MM processes is that at first it focuses the individual's attention on herself; then strengthens her by creating a small support group around her of people who are facing similar problems; and next gives her a greater purpose by shifting her focus to the plight of others.

The similarity between the typical sequence in the 'mind mobilisation' process and that of the 'alcoholics anonymous' and other substance abuse counselling processes, is shown in the diagram below:

Table 17: 'Mind mobilisation' and substance abuse counselling processes

Mind Mobilisation Step	Alcoholics Anonymous Steps	
Self-reflection	We make a searching and fearless <u>inventory</u> of ourselves.	
Admit problem to self and others	We admit <u>helplessness</u> in one or more specific areas of our lives. We <u>admit</u> to God, to ourselves, and to another human being the exact nature of our wrongs.	
Receive hope	We believe that there is a Power greater than ourselves.	
Decide to	We make a <u>decision</u> to turn our lives over to the care of God as we understand Him/ Her/ It.	
change	We are <u>ready</u> for God to change us, to remove these defects of character.	
	Humbly we <u>ask</u> Him/ Her/ It to do so.	
Vision and plan	We make a <u>list</u> of all the people we have harmed, and we become willing to make amends to them all.	

Mind Mobilisation Step	Alcoholics Anonymous Steps
Take action; learn practical skills, implement	We make direct <u>amends</u> to such people when possible, when to do so would not injure them or others.
Self-evaluate	At intervals we continue to take personal inventory, and when we are wrong, promptly <u>admit</u> it. Through daily prayer and meditation, we seek to improve our conscious contact with God as we understand Him, praying only for the knowledge of <u>His will for us</u> and for the power to carry it out.
Commit to reach out to others (candle ceremony)	We try to carry this <u>message</u> to others and to practice these principles in all our affairs.

In mind mobilisation for food security, the person best placed to provide support and share a story of hope is someone who has been through this him/herself. The visioning and planning processes follow the process. (See Table 18) The visioning process if also called helicopter planning.

Helicopter planning

Helicopter planning is also called the "five-year food security plan". This is done by a participant "flying over" his/her yard in his/her mind's eye and drawing her vision of what she would like it to look like in five years' time.

Mind mobilisation in broader context

As explained earlier in this Chapter, this personal process of Mind Mobilisation is set in a broader framework of community and leadership mobilisation, which creates an environment to recognise and morally support (instead of scorn) the efforts of those trying to gain control over their livelihoods.

A person facilitating food insecure households needs to be aware of the difficulties faced by the person shouldering the responsibility for the household's food security – both in her view of herself, and in her interactions with others, such as members of her household, her neighbours and community leadership.

- ❖ Each step in the facilitation process has a specific purpose, but every step builds up to the ultimate aim of enabling the food insecure individual to lead her household to food security and stability.
- Some steps take place in community meetings, some in small group situations (e.g. the Garden Learning Group) and yet others only through personal reflection.
- 'Milestone steps' are special steps, which must be completed before subsequent steps can take place meaningfully.

The facilitator cannot shoulder this alone, and she cannot be everywhere at once, especially for follow-up support after a Mind Mobilisation workshop. Thus, it is critical to create a local support group (such as the Garden Learning Group).

A strong bond usually forms among participants during the shared experience of the Mind Mobilisation workshop, which provides a good starting point for such a mutual-care support group when they return home.



It is critically important to realise that this is not a mechanical step-by-step process or 'cook-book recipe'. It is a process of care and nurturing, and the facilitator must stay sensitive to the mind processes of the person as they unfold, so that she can provide the right support



Facilitation Tool 4: Facilitation of a Mind Mobilisation Workshop

Attitude of the Facilitator

The facilitator aims to create a culture and practice of mutual care between participants during the Mind Mobilisation workshop, so that this can form the basis for future behaviour among them. The candle ceremony establishes a burning candle as a symbol of hope and a regular reminder of their pledge to stay committed and to notice and care for each other and for others in the village that face similar problems.

The Mind Mobilisation Workshop usually follows the steps shown in the Table below:

Table 18: The 'Mind mobilisation' workshop

Who is involved in this step?	Step	What is done during this step?	How does this step help the food insecure individual towards self-reliance?
Facilitator, maximum 10 target household members	Introduction	Opening Prayer & Welcome, Housekeeping rules, Introductions & Expectations	To set the person at ease, create a comfortable environment.

Who is involved in this step?	Step	What is done during this step?	How does this step help the food insecure individual towards self-reliance?
Each participant	Self-reflection	Draw own "Present situation analysis": Each participant reflects on her own situation, honestly and in detail. She captures this on flipchart in a detailed drawing of her homestead, who eats there and how they survive.	Reflecting on her situation, she confronts herself with the stark reality. In day-to-day life people get so used to their situation that they stop questioning whether this is what they want from life, and stop looking for alternatives.
Facilitator, participants	Admit problem to self and others	Plenary report-back and joint discussion on each workshop participant's "Present Situation Analysis"	Healing cannot start until a person admits to herself that she has a problem. In presenting and discussing her 'Present day analysis' she admits to herself and others that she has a serious and overwhelming problem, which, for a long time, she has been unable to overcome. This is a very hard, but very important step.
Counsellor/f acilitator, individual participant	Extra support	Individual counselling (where necessary)	Most people find talking about their present situation painful and many break down and cry. Some individuals are traumatised and inconsolable. If there is only one facilitator, she may want to call for a break at this point and spend some time alone with the individual to support her through this very difficult experience. Ideally there should be a second counsellor/facilitator available to work with the individual separately while the rest of the group continues.
Storyteller, participants	Receive hope	"Tshepo's Story": Listen to the life-story of someone (Tshepo or other) who was in the same position and succeeded in getting out	By hearing first-hand from someone who 'made it', she receives hope that there is a way out – a way that is difficult and which will require great personal sacrifice, but which is not impossible
	Decide to change	She decides that she wants to change	At this point people experience a mixture of fear and excitement. Once she has taken the decision to change, energy levels are usually high and she is eager to take practical action. This energy is next channelled into a visioning and planning exercise

Who is involved in this step?	Step	What is done during this step?	How does this step help the food insecure individual towards self-reliance?
Each participant	Vision and plan	Draw own "Helicopter Plan" Also called the "five year food security plan" – vision of what garden will look like in 5 years time to provide all needs.	She develops a vision of how she wants to be, and draws up a doable plan of action of how she can get there. This becomes her 'roadmap' for the next five years. She takes this home and henceforth plans her daily activities towards achieving the Helicopter Plan in five years. This helps to keep her focused and motivated in periods of low morale, and also helps avoid that she becomes discouraged by trying to do too much in the beginning
Facilitator, participants	Take action; learn practical skills	Practical demonstration: deep trenching for intensive gardening	Adults learn best by doing. By practically measuring out a new trench bed, digging it, placing the organic stuffing, and planting some seedlings, she becomes less likely to put off starting her own when she gets back home. Preparing the demonstration bed with other participants binds the support group closer together and helps them remind each other how to do it once they get home.

Below, some further detail is given on some of the steps.

Household present situation analysis

The following process is used to facilitate the present situation analysis:

- 1. Each participant finds a quiet place to sit and draws her/his own present yard and household situation (as detailed as possible) on flipchart paper.
- 2. Present back to other participants in plenary.
- 3. The facilitator and other participants ask questions about household well-being and yard features (taking hints from the drawing).
- 4. Notes can be made of the report-back.
- 5. This drawing and notes on the household's present situation analysis is effectively a baseline study of that household.

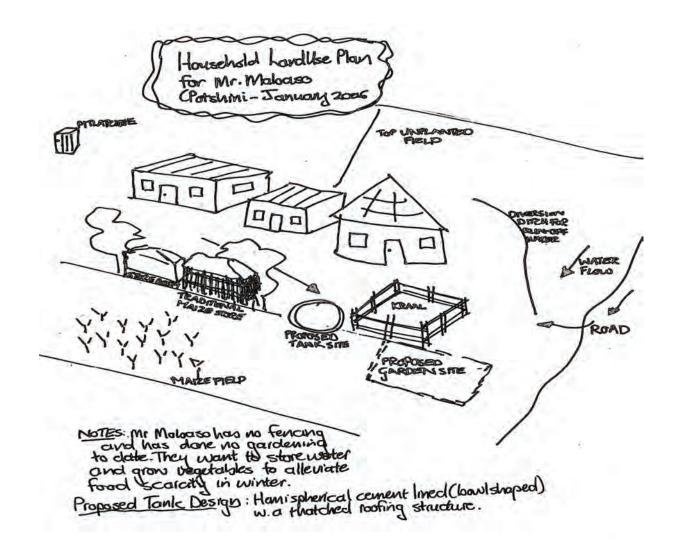


Figure 11: Present situation analysis – an example

Mr Mabaso's homestead is in Potshini, KwaZulu-Natal. This was a drawing of his homestead at the time, what he was doing there and a beginning of his ideas for future change.

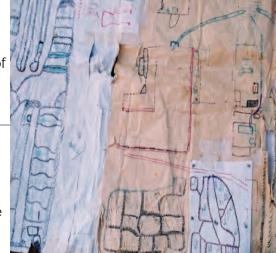
Combined visioning and action planning: Helicopter Plan

The following process is used to facilitate helicopter planning:

- 1. Participant draws her/his Helicopter Plan on flipchart (as detailed as possible) showing how she/he would like her/his yard to look in five years' time.
- 2. She presents this back to other participants in plenary.
- The facilitator and other participants ask questions to lead the thinking towards interim goals and reality checks. The facilitator must ensure that this interrogation of each other's plan is done very gently and always in a spirit of mutual support.

Example questions:

- "Are you sure the water flows in that direction on your yard during a rainstorm?"
- "You already have 2 beds, how long did that take you? How much would you realistically be able to do by (target date) (Christmas, next month)



Original Helicopter Plan (five year food security plan) developed by Mrs Khumbane. Note how sections have been changed over time and posted over the original.

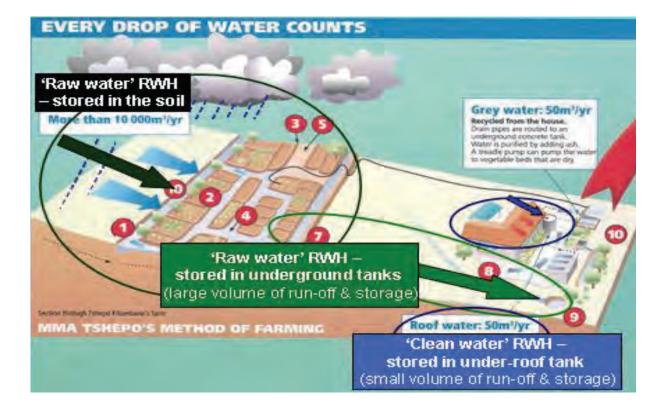


Figure 12: A diagram of Mrs Khumbane's homestead yard after five years – (diagram developed and supplied by "The Star" Newspaper).

Removing uncertainty: Practical demonstration and do-it-yourself

Participants are often very excited and determined during the workshop, but once they get home, many actually feel uncertain about how to go about the next step. By taking them through a hands-on process during the mind mobilisation workshop, they gain first-hand experience and can more easily start their own at home.

The two aspects that they should do practically (this can be done as a group) are as follows:

1. Set out a new bed:

-They need to go outside into an open piece of veld or garden, visualise and decide the desired size and shape of a new trench bed, and physically step it out and mark it on the ground. -They need to judge where the water will flow from to wet this new bed during rainstorms.

-Then they have to go over to action: take up a spade and start digging the bed.

2. Prepare a new trench:

-See Chapter 6 for a practical demonstration on how to fill the trench bed.

Catapulting action: The first trench bed & 'saving the seedlings'

The next challenge is to try and ensure that people don't procrastinate – that they don't take a long time before starting their first trench once they get back home. A very good way of galvanising them into action is to provide them with a gift of live seedlings. These need to be planted before they die!

- This creates urgency for immediate action, before the emotional high starts dwindling.
- It also makes it possible to plant immediately, and harvest sooner, which is in itself a great motivating factor

Figure 13:
Ma Tshepo
distributing
seedlings
during a
mind
mobilization
workshop
in Limpopo





Facilitator's note:

Remember to include a follow-up workshop on how to harvest your own seed and grow your own seedlings, to avoid people becoming dependent on seed/seedlings provided by outsiders.

Alternative Mind Mobilisation: The Nutrition Workshop

The Nutrition Workshop (as described in detail in Chapter 3) has been developed through this Water Research Commission project as a 'lighter' alternative to this very deep and effective mind mobilisation process developed by Mrs Khumbane.

These approaches are not mutually exclusive. The facilitator must always use her judgement on the appropriate intervention strategies for the particular situation she finds in a village she is working in.

As a general rule:

- The Nutrition Workshop can be used with the majority of households in a village, and will be of interest and benefit to households at all levels of food security; while
- ❖ A full Mind Mobilisation process may be necessary for the most food insecure and traumatised households in the village.

Household Experimentation

This process will be introduced here to give you an idea of how it works. We will refer back to this section in other chapters, where we introduce specific gardening practises that individuals and households can try out or experiment.

This becomes the main technique used for interventions in the garden itself. Small-scale experimentation is a way in which food gardeners can try out new ideas without risking their crops and livelihoods. They try out these new ideas in a small area of their garden, comparing it with their normal food gardening practices and observing closely what the outcomes are. Then they are well informed to make their own decisions about their preferred practices and how they would like to adapt them.

Once an innovation has been tried and established that food gardener may begin experimenting with other innovations. At the same time she/he may teach the innovations already implemented to others. When technology is introduced slowly by overcoming limiting factors one by one, food gardeners have a chance to test, implement and share the innovations, they also build up strong circles of knowledge amongst themselves.

It also means that as a facilitator your job is not to try and convince food gardeners to "adopt" specific technologies and innovations that you think are a good idea. Your job is to introduce new ideas/innovations that food gardeners can try out for themselves and make their own decisions about.

In food gardening, we will face new challenges all the time. We may also want to try

out new ideas. We need to try these new ideas without taking risks and without making more problems/challenges for ourselves. An experiment is a test to see if an idea works. When we have worked out our problems and the causes for this problem, we can come up with suggestions for possible solutions to this problem. We can use these suggestions to plan an experiment.

Example: household experimentation

Garden of cabbages with three experimentation plots

Here is an example of Mrs Ngobese from KwaHlongwa (Umzumbe, SA), who decided to experiment with methods of aphid control on her cabbage crop.

She wanted to test the use of ash and chilli-soap solution for controlling aphids. These were solutions to aphid control that she could try by herself, without spending a lot of money.



She took a small piece of her garden (1/10th) as the experimental plot. This was divided into 3 sections:

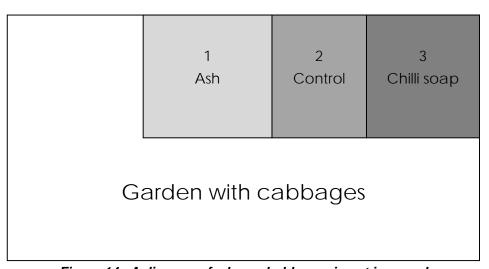


Figure 14: A diagram of a household experiment in a garden

Notes

- 1. On the first one she sprinkled ash on her cabbages.
- 2. On the second one she did a control. This means she did not try out one of her solutions here because she was trying to see if her solutions really worked. In other words, she wanted to make sure that the solution was better than doing nothing
- 3. On the third one she sprayed a chilli-soap solution.

She monitored, or looked at, her experiment. Every week she checked and wrote down which cabbages looked better.

Here is an example of what her results could have been:

Table 19: Example of possible results obtained from a household experiment

Week	1 Ash	2 Control	3 Chilli-soap
1, 2 and 3	No aphids	No aphids	No aphids
4	Sprinkled ash when aphids appeared	Aphids appeared; about 10 on each plant. Only some plants have aphids	Sprayed chilli-soap when aphids appeared
5	Still some aphids, about 5 per plant	Now aphids on all the leaves; about 100 per plant	Aphids seem to have disappeared
6	More aphids. Aphids appearing on plants that did not have them before. Sprinkled ash again	Aphids on the plants that did not have aphids before	More aphids. Aphids appearing on plants that did not have them
etc.			

At the end she wrote down what she thought about each method: Which way of controlling aphids worked best for her. This was her final outcome. From this experiment Mrs Ngobese knows which method of aphid control works best for her. In future, she will use this method on all of her cabbages, not just a few of them.

Table 20: Final outcomes and conclusions of a household experiment

Ash	Control	Chilli-soap
What do I think:	What do I think:	What do I think:
There is still some ash on	There were so many aphids	The cabbages from this plot
the cabbage heads, as some	that I had to take out all the	look the best and weigh the
ash got into the folds of the	cabbages in the control	most. I had to spray the
leaves. I think that the ash	section, and so they cannot	solution every two weeks,
might have scorched the	be weighed. I think they	especially if it had rained.
cabbage leaves. Also the ash	would not even have formed	Chilli-soap seems to kill the
gets washed off in the rain,	heads. Using ash or chilli-soap	aphids, which is good
and I have to apply it again.	is definitely better that	because then they cannot go
	doing nothing at all.	on to other plants. I will use
		chilli-soap in future.

Further detail on how to conduct household experiments and how to introduce this process in your garden learning group is given in the Handouts: Homestead Food Gardener's Resource Packs attached to the end of this Resource Material.

The Garden Learning Group's outreach activities

The Garden Learning Group can provide a platform for outreach activities of the households. Outreach activities helps the Garden Learning Group to avoid getting stuck, by looking only 'inwardly' at its own members' problems. Instead, it helps to create an outward-looking perspective for the group and its members.

Examples of what groups can do as outreach activities include the following:

- Draw other food insecure households into the group and help them to also start producing food;
- Find and look after or arrange care for orphans and other vulnerable individuals in the community;
- Arrange for disabled person(s) in the village to get proper care e.g. one group arranged for a deaf child to start attending the school for the deaf in Nebo, Limpopo; other groups managed to get hold of wheelchairs, crutches, or other aids for the disabled in the community;
- One group helped people in the village to get IDs so that they could start benefiting from government support like pensions, disability grants, RDP housing and education;
- Environmental clean-up activities in the village and surroundings; and
- ❖ Any other needs that are identified within their sphere of influence.

Monitoring and evaluation tools

Self-evaluation for renewal

Self-evaluation provides a good basis for re planning and adapting one's activities for improvement. It also helps to renew the vision and commitment to production and action. This is true both at the individual household level, and for the Garden Learning Group's own activities. The Self-Evaluation Tool below was adapted from such a tool developed by Ma Tshepo Khumbane to help households and groups to achieve this.

Table 21: Self-Evaluation Tool for Household Food Security

	Basic categories for a Household Food Security self-evaluation tool		Cross-cutting aspects	
 Questions to/by the Household: Progress with my garden and food security? Wellbeing of my family? (Health, income) Transformation of my family? (Behaviour) 		foll ne	each of these questions (1-5), the lowing cross-cutting aspects (a-d) ed to be explored: Creativity: what creative ideas or approaches have you come up	
4.	Questions to/by the Garden Learning Group: 4. Mobilisation and outreach achievements of our garden-learning group?		with? How has the environment improved (own household, community) What support do you require,	
5.	Support our group has successfully mobilised from our leadership, and from other organisations?	d.	which you cannot manage yourself?	

Forward planning

The Self-Evaluation Tool above can be used as a basis for planning. In deciding on which question they would like to ask themselves over time to evaluate themselves, the Garden Learning Group is, in effect, setting goals for itself. They are planning in which aspects they wish to excel.

Self-monitoring tools

There are also a range of specific self-monitoring tools – most of these developed over the years by Ma Tshepo Khumbane – to help households to learn from their experiments, mistakes and successes. Self-monitoring provides a reliable basis to answer the questions in the Self-Evaluation Tool above during their occasional self-evaluation.

Monitoring tools also help the households to keep track of the success or failure of creative ideas tried out in their activities.

Here is a list of some of the self-monitoring tools that can be used:

- ❖ Family time management tool/ Daily household activity charting (called the 'Calendar of Activities' or, jokingly "The Manager";
- Moral regeneration charting;
- Household action planning tool: Planting calendar;
- ❖ Household food flow planning: Harvest calendar; and
- Water and weather calendar (daily charting of climate, rainfall, water use and storage).

Planting calendar

Participatory planning of the homestead-planting calendar to fill the diet gaps identified, takes into account the following considerations:

- Crop choices to yield a wide variety of 'go, grow and glow' foods year-round;
- Cultivar choices: open-pollinated, long-yielding, pest/disease/drought resistant, and adapted to the local climate;
- Succession planting to yield a constant supply of fresh food to the household;
- Seasonal planting of winter/summer crops; and
- Rotational planting to avoid plant diseases.

(Also see Chapter 3 for an example and Chapter 4 for more detail on diversification).

Harvesting calendar with harvest estimates

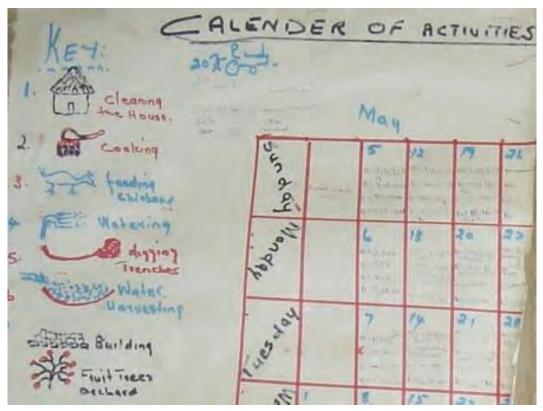
- Participatory analysis of the harvesting calendar; and
- Estimates of food flows (weekly and seasonally)

Calendar of Activities

The Calendar of Activities tracks the daily activities of household's members, and is usually filled in by the children in the household. This activity creates a lot of fun, but also tangible change. Everyone in the household becomes very aware of how they utilise their time and it quickly shows up where the load for food security and other household chores is unevenly distributed among household members.

Some women jokingly call this chart "The Manager", because it hangs on the wall and 'keeps an eye on everyone'!





How it works:

The numbers in the 'Key' represent the daily tasks. These numbers are written into the day's block on the calendar, next to the symbol/name for each household member. At a glance, it can be seen who has done their part (including schoolwork)!

2.6 Household learning content

The learning content can be self designed using the resources in this manual and the gardeners' resource materials attached. It is possible also to tailor make your own content depending on the expressed learning needs of specific garden learning groups.

The content of the further chapters in this resource manual provides an overview of the available material for household facilitation and training:

- Living and eating well (see Chapter 3)
- Diversifying production in homestead food gardens (see Chapter 4)
- ❖ Garden and homestead water management for food gardening (see Chapter 5)
- Soil fertility management: Optimising the productivity of soil and water (see Chapter 6)
- ❖ Income opportunities from homestead food gardening (see Chapter 7)

Let us now have a look at a practical example of how this was applied in practice.



Case Study 1: Learning content and process for workshops conducted in Potshini

Workshop 1, the family Nutrition Workshop (See detailed example in Chapter 3) provided a good introduction to the subsequent workshop topics, for which the training content and process is summarised below. Notes are provided on further training needs identified during the workshops and follow-ups at homesteads.

Household visits were conducted between the workshop sessions to check implementation, assist householders and provide further motivation.

One day was also spent delivering fruit trees to garden learning group members and doing a practical demonstration

Table 22: Potshini learning workshops

Workshop	Content	Process	Notes
		* The discussion on soils was a bit difficult; many group members are young people who have seemingly never thought about this – they could not distinguish between sand and clay or the different soils in the area * Trench and	Planting of beetroot seed in
		seedbed preparation went well * Interesting points were raised about frost control	prepared seedbed Further training needs: - More on soils, types, characteristics, identification and management

Workshop theme	Content	Process comments	Notes
<u>Workshop 3:</u> Fertility (28/07/2006)	1. Review of progress with seeds, seedbeds and a look at Sizakele's garden (she was the host member for this training session) 2. Water splash, infiltration and organic matter demonstration 3. Demonstration of production of liquid manure and provision of orange sacks and some manure to all members present 4. Discussion on management of garden beds and kraal manure 5. Input on household experimentation, and then each member designed their own garden experiments	* The organic matter and water splash demonstration was very effective in bringing across the issues of soil depth and the amount of water held by organic matter. * Liquid manure demonstration was also effective. * Experimentation was also effective. * Experimentation handouts in isiZulu were provided – people generally found them hard to follow and a lot of explanation were required. They worked in small groups to design experiments	Demonstration of making of liquid manure Further training needs: - A tight follow-up on experimentation will be required - Re-emphasise importance of mulching - No requests from members

Workshop theme	Content	Process comments	Notes	
<u>Workshop 5:</u> Pest and disease management (28/09/2006)	1. Input on the use of fertilizers by Department of Agriculture extension officer 2. Follow up on experimentation and progress 3. Inputs (with handouts): - natural predators and garden friends - windbreaks - different home remedies for common pests 4. Demonstration of chilli, garlic, soap mixtures for pest control. 5. Demonstration of making fruit fly trap from 2l coke bottle and making up a fermented mixture with oranges and sugar. 6. Supply of small amounts of the following to members: Napier fodder, rosemary and rose geranium cuttings, garlic cloves for planting, soap, chillies, oranges, bottles, toilet rolls for cutworm.	1. The input by the extension officer was meant as a way to compare organic vs. inorganic gardening. His input however focussed on the technicalities of fertilizing maize. 2. A picture with garden friends was provided and members were asked to identify and name all and then describe what they do – this was a good exercise and was remembered long after. 3. This workshop had a lot of different inputs, covered in a bit of a rush and it was suggested by co-facilitators that we "unbundled" it in future.	Picture of predators and garden friends used in the exercise. - It was found that the cuttings provided did not survive; should rather provide plants in future Napier has grown well in most gardens – but now must be propagated and planted as windbreaks - Fruit fly traps were forgotten by most by the time summer arrived; they should be discussed again in the right season Future training needs: - Still need to cover the aspect of diseases, have only dealt with pests	

Workshop theme	Content	Process comments	Notes
Workshop 6: Garden layout and design (11/10/2006)	1.Report back on experimentation 2. Group exercise in water flow in the homestead (with handouts of Ma Tshepo's system) 3.Measuring contours with A-frames and line levels 4.Exercise for making ditches for water harvesting in the garden	The water flow exercise worked well as did using photos of Ma Tshepo's system; high school students had joined us for the day and added many insights Trying to measure contours in the garden were very confusing for all – (we muddled the concepts of straight and level) and was abandoned Getting people to dig ditches in the garden and the whole group to discuss, worked well	One member digging while being instructed, corrected, and generally "made suggestions to" by the rest of the learning group (standing outside, as the garden is so small) Future learning: - Need a different context and way to introduce contours and levels. - Also, digging ditches really needs to happen for each individual with advice and support so home visits is essential.

Workshop theme	Content	Process comments	Notes
Workshop 7: Irrigation workshop (25/10/2006)	1. Review of progress to date 2. Demonstrations of treadle pump and hand valve pump to extract of water from underground storage 3. Demonstration of wetting circles in drip kit area; for discussion on where water goes under the soil 4. Discussion and analysis of irrigation practices 5. Demonstration of how to build a tower garden	- Large interest in treadle pumps; but people cannot afford to buy them - Irrigation discussion was a bit difficult, as people do not really think about what happens to water in the soil. Certain concepts were introduced, such as deeper watering less often; deep soil holds more water; big roots mean a big plant. This became a bit of a "lecture" Looking at the situation in a garden in practice and digging to see where it was wet worked better. However, the discussion took a while and a few people lost interest half way.	Practical "look-see" where water goes in Thabani Dladla's garden; looked at trenches vs. normal planting, where there were ditches, etc. Future training needs: Need to refine how concepts of soil moisture are introduced Find ways that people can go home and monitor for themselves what happens (perhaps give out a few augers to volunteers – for them to report back) Can one introduce technologies that people cannot afford without working on ways to bring such technologies to the area?

Work- shop theme	Content	Process comments	Notes
Workshop 9: Evaluation and planning (07/02/2007	1.Evaluation : What went well and what did not 2.Comment s on the learning process 3. What we still need to learn 4. Planting calendar 5. Planning for the future 6. Household garden visits 7. Learning quiz	This evaluation followed on an internal exercise the learning groups conducted to think through what they are going to do this year. It flowed nicely as a more in-depth analysis of their learning and what they still wanted to learn. NOTE: Members were trying very hard throughout to persuade the facilitators to spend another season doing more training in the same way. They mentioned continually that it helps to motivate them and keep the focus going. They also repeatedly stated their wish for more cross visits to other places to learn from those people. Home visits to each learning group member would be appreciated. An initial list was compiled, to see those who facilitators have not yet visited. The quizz worked VERY well, was fun and gave us a very good idea of what people knew!!	Members appreciated the process of going to peoples' homes and doing practical training. Ditches and trench beds, using liquid manure, planting of fruit trees, new ways to grow carrots, planting crops from seed and keeping seed, and pest control were mentioned as having worked well for them practically. What did not work so well were drip kits, toilet paper roll collars for cutworm, string for scaring birds, and some fruit trees did not grow. Future learning needs from the group: A comparison between organic and conventional methods English literacy Computer training Keeping traditional chickens Dealing with blight on tomatoes How to write funding proposals Use of fertilizers and pesticides in gardens Mostly members now also wanted "things", mentioning items such as fencing, the underground tanks, tools, materials for tower gardens, seed and seedlings.

2.7 References

- Bowlby, J., 1979. The Making and Breaking of Affectional Bonds. London, England: Tavistock Publications Limited. Quoted in Braun, 2003. Separation Anxiety and Attachment in Infants and Toddlers.
- Burns, J.C.; Suji, O.W.; and Reynolds, A. 2008. *Impact Assessment of the Pastoralist Survival and Recovery Project.* Dakoro, Niger. Feinstein International Centre. Tufts University, Medford.
- Carter, I. (not dated) Mobilising the Community. A PILLARS Guide. Tearfund. http://tilz.tearfund.org/webdocs/Tilz/PILLARS/English/PILLARS%20Mobilising%20the%20community_E.pdf
- Catley, A.; Burns, J.; Abebe, D.; and Suji, O. 2007. *Participatory Impact Assessment: A Guide for Practitioners*. Feinstein International Centre. Tufts University, Medford. http://www.scribd.com/doc/15436957/Participatory-Impact-Assessment-a-Guide-for-Practitioners
- Chambers, R. 1992. *Rural Appraisal: Rapid, Relaxed and Participatory*. Discussion Paper No 311. IDS, University of Sussex.
- Cousins, T. and Kruger, E. (eds). 1993. Towards Partnership in Development: A Handbook for PRA Practitioners. Based on a PRA training workshop. Bulwer, KwaZulu-Natal. Midlands Development Network.
- De Castro, J. 1946 Geography of Hunger; http://www.josuedecastro.com.br/engl/hunger.html
- De Zeeuw, H. 2004. The development of Urban Agriculture; some lessons learnt. Resource Centre on Urban Agriculture and Forestry.

 http://www.ruaf.org/sites/default/files/development_ua_lessons.pdf and http://www.ruaf.org/node/419
- DFID. Sustainable Livelihood Guidance Sheets. www.nssd.net/reference/SustLiveli/DFIDapproach.htm
- IFAD. The Sustainable Livelihoods Framework: Sustainable Livelihoods Workshop. www.ennonline.net/pool/files/ife/section6.pdf
- Kruger, E.; Mearns, M. and Randall, C. (eds). 2009. Food Security Facilitator's Short Learning Programme. Module 3: Natural Resource Assessments. UNISA. SAIDE (in press).
- Lappe, F.M.; Collins, J.; Rosset, P.; and Esparza, L. 1998. *World hunger: Twelve myths.* Second edition. Grove Press, New York. ISBN 0-8021-3591-9.
- Pretty, J. N.; Guijt, I.; Thompson, J.; and Scoones, I. 1995. Participatory Action and Learning: A *Trainer's Guide*. IIED. Methodology Series.
- Wilde, V. 2001. Socio-economic and Gender Analysis. Field level handbook. SEAGA Programme. FAO.

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Homestead Food Gardeners'

Resource Pack (Handouts) -

Chapter 2:

Facilitation for homestead food gardening

Resource Material for Homestead Food Gardeners

Chapter 2: Handouts (English)

Handout 1 Farmer Experimentation

1. Farmer Experimentation

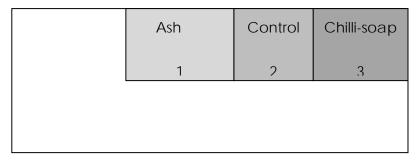


In farming, we will face new problems all the time and we need to try different ways of solving them. We may also want to try out new ideas. We need to try these new ideas without taking risks and without making more problems or difficulties for ourselves. We can do this by experimenting.

An experiment is a test to see if an idea or a solution works. When we have worked out what our problem is and the causes of this problem, we can come up with ideas or solutions to this problem. We can then do an experiment to see if our ideas really do work. We do the experiment on a small scale at first, in case the experiment does not work, and the whole crop is ruined.

Here is an example of Mrs Ngobese from KwaHlongwa (Umzumbe, South Africa). She decided to experiment with methods of controlling aphids on her cabbage crop. She heard of two things she could try. The first was to put ash on the leaves of her cabbages, and the other was to spray chilli-soap on her cabbages. These were solutions to aphid control that she could try by herself, without spending a lot of money.

Mrs Ngobese took a small piece of her garden (1/10th) as the experimental plot. She divided the plot into 3 sections and marked them out very carefully.



- 1. On the first section she sprinkled ash on her cabbages.
- 2. On the second section she did a control. This means she did not try out one of her solutions here because she was trying to see if her solutions really worked. In other words, she wanted to make sure that the solution was better than doing nothing
- 3. On the third section she sprayed a chilli-soap solution.

Then she monitored and looked at her experiment. Every week she checked her cabbages and wrote down how many aphids the cabbages had. She did this so that she could remember exactly what happened, and at the end she could decide which method was better.

Here are her results:

Week	1 Ash	2 Control	3 Chilli-soap
1, 2 and 3	No aphids	No aphids	No aphids
4	Sprinkled ash when aphids appeared	Aphids appeared; about 10 on each plant. Only some plants have aphids	Sprayed chilli-soap when aphids appeared
5	Still some aphids, about 5 per plant	Now aphids on all the leaves; about 100 per plant	Aphids seem to have disappeared
6	More aphids. Aphids appearing on plants that did not have them before. Sprinkled ash again	Aphids on the plants that did not have aphids before	More aphids. Aphids appearing on plants that did not have them
7	Fewer aphids. Some plants free of aphids. Hot weather, leaves look scorched. Was it the ash?	Aphid infestation now on all the plants. Hot weather, no scorching	Fewer aphids, some plants free of aphids. Hot weather, no scorching
8	The scorched/burnt leaves have been pulled off and plants are still growing - few aphids	Plants not growing well. Aphids seem to move from here onto the ash and chillisoap plots.	Few aphids, but increasing
9	Aphids increased slowly after heavy rain. Did not use more ash	Decided to pull out the control plants, as they were not growing and they were infesting the other two plots	Aphids increased rapidly after heavy rain. Sprayed again.

10	Some aphids on all plants, but not too many		Very few aphids. Plants are starting to head
11	Suddenly more aphids. Difficult to use ash with plants now heading, but did try to sprinkle some		More aphids. Plants are starting to head. Sprayed again.
12	Harvest		Harvest
RESULTS	Some aphids, heads now have ash on them and some do not look that good.	No heads. Plants destroyed by aphids	Very few aphids on plants, good heads on them.

She thought that another way of checking to see whether her experiment had worked was to weigh some cabbages at the end of the experiment. She weighed 10 cabbages from each section.

Her results have been recorded in the table below.

	Ash	Control	Chilli-soap
Cabbage Number	Weight per cabbage	Weight per cabbage	Weight per cabbage
1	0.85kg	-	0.75kg
2	0.56kg	-	0.82kg
3	0.55kg	-	0.59kg
4	0.81kg	-	0.62kg
5	0.33kg	-	0.86kg
6	0.76kg	-	0.88kg
7	0.54kg	-	0.45kg
8	0.59kg	-	0.73kg
9	0.62kg	-	0.55kg
10	0.88kg	-	0.65kg
TOTAL	6.49kg	0	6.90kg

At the end she wrote down what she thought about each method: Which way of controlling aphids worked best for her. This was her final outcome. From this experiment Mrs Ngobese knows which method of aphid control works best for her. In future, she will use this method on all of her cabbages, not just a few of them.

Ash	Control	Chilli-soap
What do I think:	What do I think:	What do I think:
There is still some ash on	There were so many aphids	The cabbages from this plot
the cabbage heads, as some	that I had to take out all the	look the best and weigh the
ash got into the folds of the	cabbages in the control	most. I had to spray the
leaves. I think that the ash	section, and so they cannot	solution every two weeks,
might have scorched the	be weighed. I think they	especially if it had rained.
cabbage leaves. Also the ash	would not even have formed	Chilli-soap seems to kill the
gets washed off in the rain,	heads. Using ash or chilli-soap	aphids, which is good
and I have to apply it again.	is definitely better than	because then they cannot go
	doing nothing at all.	on to other plants. I will use
		chilli-soap in future.

Let's think more about what Mrs Ngobese did. You can use her example to plan experiments in your garden.

Experimentation



We will use this picture to help you with your experiments.

Whenever you see this picture, it will be time to think about how you can **experiment** in your garden to get better results.

In doing her experiment, Mrs Ngobese asked herself some questions, and then answered them

- 1. **First of all, she asked what her problem was.** The answer is that she had aphids on her cabbages and she thought this was bad.
- 2. **What is a solution to this problem?** Mrs Ngobese thought one solution was to sprinkle ash on her cabbages, and another solution was to spray her cabbages with chilli-soap mixture.
- 3. Why will this solution solve the problem? Mrs Ngobese thought that these solutions would get rid of the aphids
- 4. **How will I test this solution?** Mrs Ngobese put ash on some cabbages, and chillisoap on other cabbages, and did nothing at all on the rest of her experimentation plot. She then counted the number of aphids.
- 5. How will I check my results? What will I look for? Mrs Ngobese checked the

number of aphids on her cabbages every week, and she wrote down what she found. She found that her control plot had many, many aphids and that with ash and chilli-soap she could reduce the number of aphids, as long as she applied this every two weeks.

- 6. **How else will I check my results?** What will I measure? Mrs Ngobese weighed 10 cabbages from each section at the end of the experiment at harvest time. She found that the 10 cabbages with ash treatment weighed 6.49 kilograms and the 10 cabbages with chilli-soap treatment weighed 6.9kg. This means the cabbages treated with chilli-soap weighed more. She did not keep her control cabbages to weigh.
- 7. **How will I measure the results or outcomes?** The cabbages with the fewest aphids or the cabbages that weigh the most will be the best.
- 8. How will I compare my experiment to my usual way of farming? Mrs Ngobese's usual way of farming was to do nothing about aphids, like she did on her control section. From this experiment, she has seen that both ash and chilli-soap mixture reduces the number of aphids on her plants. She has seen that she needs to reapply both, especially when it rains. Now she thinks that chilli-soap mixture is the best way of controlling aphids on her cabbages.

In the following table you will find the questions for planning your experiments, and space to write your answers.

	Small scale experimentation plan		
1.	What is the problem?		
2.	What is a solution to this problem?		
3.	Why will this solution solve the problem?		
4.	How will I test this solution?		

5.	How will I check my results? What will I look for?	
6.	How else will I check my results? What will I measure?	
7.	How will I measure the results or outcomes?	
8.	How will I compare my experiment to my usual way of farming?	

When doing experiments it is important that you can measure your results, and judge whether the experiment has worked or not. If you try too many things at once, without thinking about how you can measure the results, you might not know which solution has worked. This is what happened in the following story:

What happens when we try several remedies at once?

If things go well/badly, how will we know what caused the outcome?



THE BACKACHE

One day an old woman had a backache



Go and see an inyanga...

Go and see an inyanga...

Go and see an fix it with some herb tea...



As she came out of the doctor's office, she met to see you, Baba Mkhize... I have a backache!

Do you want me to cure you?



The same thing would have happened to Mrs Ngobese if she had sprinkled ash and sprayed the chilli soap mixture on her cabbages at the same time. She would not have known which method was better at controlling aphids.

One good thing about doing experiments is that you can share your knowledge with your friends and neighbours, and this might help them. If they do experiments, they can also share their knowledge with you, so that you do not have to do the experiment yourself. In this way your community can decide what is best practice, and everyone can use that method of farming.

Resource Material for Homestead Food Gardeners

Chapter 2: Handouts (seSotho)

Handout 1 LIteko Tse Etsoang Ke Sehoai (Farmer experimentation)

1. Llteko Tse Etsoang Ke Sehoai



Tšebetsong ena ea hoba lihoai, re kopana le mathata a mangata ka nako tsohle, 'me re leka maqiti a mangata ho a fenya. Re ka nna ra batla ho leka mekhoa e mecha. Le ha hole joalo re tšoanela ho leka mekhoa ena e mecha re sa ikenye khathatsong kapa hona ho ipakela mathata a mang hape. Tsena re ka li qoba ka ho etsa liteko.

Ho etsa teko ke ho bona hore na mokhoa o mocha o ka sebetsa na. Hang ha re se re fumane hore na bothata ke bofe le hore na bo bakoa keng, re ka atleha ho batla mekhoa ea ho bofenya. Re etsa liteko tsena e le hore re bone hore na efela mokhoa ona o mocha o tla sebetsa. Teko ena re e etsa re sebelisa moroho o seng mongata hore haeba teko e sa atlehe, ra be re sa lahleheloa ke moroho kaofela.

Ona ke mohlala oa 'Me Ngobese oa KwaHlongwa (Umzumbe, Africa Boroa). O ile a etsa qeto ea ho leka mekhoa e mecha ea ho loantša hoaba morohong oa hae oa kh'abeche. O ile a utloela ka mekhoa e 'meli eo a neng a batla ho e leka. Oa pele ene e le ho tšela molora holim'a mahaba a kh'abeche ea hae, oa bobeli e ne e le ho fafatsa motsoako oa chilisi le sesepa holim'a mahaba ao a kh'abeche. E ne e le metsoako ea ho loantša hoaba eo a neng a ka e sebelisa a sa lahleheloe ke chelete e ngata.

'Me Ngobese o ile a seha sekhechana sa serapa sa hae (1/10th) moo a tlang ho etsa liteko tsa hae teng. O ile a arola serapa sa hae likaroloana tse tharo (3), 'me a litšoaea ka tsela e bonahalang.

Seratsoana se Sebelisoang Bakeng sa	Molora 1	Kh'abeche e seng tekong 2	Chilisi le sesepo 3
liteko Serapa se engoeng kh'abeche			

- 1. Karolong ea pele o ile a fafatsa molora kh'abecheng.
- 2. Karolong ea bobeli ha a ka a tšela letho. Ka mantsoe a mang, ha a ka a tšela molora kapa motsoako oa chilisi le sesepa, e le hore a tle a bapise hore na efela molora le motsoako li sebetsa
- 3. Ho ea boraro a fafatsa motsoako oa chilisi le sesepa.

Joale ea ba o lula a ntse a lekola le hona ho lebella hore na lipatlisiso li ntse li tsamaea joang. O ne a lekola kh'abeche ea hae beke le beke, a bile a ngola fatše hore na ke hoaba e kae e teng moo kh'abecheng ea hae. O ne a etsa sena hore a tle a hopole hantle hore ho ile hoa etsahalang e le hore ha a qetile ka lipatlisiso tsa hae, a tle a tsebe ho khetha hore na ke mokhoa o fe o molemo oa ho laola hoaba.

Tsena e bile liphetho tsa hae:

Beke	(1) Molora Molora	(2) Likh'abe che tse sa kenang tekong	(3) Motsoako oa chilisi lesepa
1, 2 le 3	Hoaba ha eo	Hoaba ha eo	Hoaba ha eo
4	A fafatsa molora ha a bona hoaba eba teng.	Hoaba e qala ho bonahala, tse ka bang leshome (10) kh'abecheng ka ngoe. Ke likh'abeche tse 'maloa feela tse bonahalang li na le hoaba.	A fafatsa motsoako ha hoaba e bonahala.
5	Hoaba e ntse e bonahala tse ka bang hlano (5) kh'abecheng e le ngoe	Hoaba joale e bonahala haholo holim'a mahaba, tse kabang lekholo (100) ka palo.	Hoaba ha e sa bonahala
6	Hoaba joale e atile. Ebile e teng le likh'abecheng tseo e neng e le sio pele.A fafatsa molora hape.	Likh'abeche tse neng li sena hoaba joale li na le eona	Hoaba e bonahala e atile, ebile e teng le li kh'abecheng tse neng li sena eona pele.A fafatsa motsoako hape.
7	Hoaba joale e bonahala e fokotsehile. Likh'abeche tse ling li shebahala li sena eona. Ho ne ho chesa, ebile mahaba a mang a bonahala a chele Na ekaba ke molora oo?	Hoaba joale e hlasetse li likh'abeche kaofela. Hoa chesa feela mahaba ha a cha.	Hoaba e fokotsehile, ebile tse ling tsa likh'abeche ha lisana eona. Hoa chesa feela mahaba ha a cha.

8	Mahaba a cheleng a tlositsoe hape likh'abeche li ntse li hola hantle le hoaba e fokotsehile.	Likh' abeche ha li hole hantle. Hoaba e bonahala e tloha mona e ea lipolo- tong tsela tse sebelitsoeng ka molora le motsoako.	Hoaba e ea fokola feela e bonahala e ntse e eketseha.
9	e matla. Ha a ka a sebelisa molora hape.	A etsa qeto ea ho tlosa likh'abeche tsena tse neng li sa kena tekong, kaha joale li ne li sa hole ebile li tšoaetsa liratsoana tse ling tse peli.	Hoaba e ile ea eketseha haholo kamorao ho lipula tse matla. A fafatsa motsoako hape.
10	Hoaba e teng lijalong kaofela le ha e se ngata.		Hoaba e ea fokola. Li kh'abeche li qala ho bopa.
11	Hang hoaba e bonahala e atile. Ha ho bonolo ho fafatsa molora hobane joale kh'abeche e se ntse e bopa. Le ha ho le joalo, o ile a fafatsa o seng mokae.		Hoaba e eketsehile. Kh'abeche e qala ho bopa. A fafatsa motsoako hape.
12	Kotulo		Kotulo
LIPHETHO	Palo e tlase ea hoaba e ntse e le teng. Likh' abeche li na le molora e bile ha li shebahale hantle.	Ha hoa kotuloa letho ka ha lijalo li ile tsa sengoa ke hoaba.	Hoaba e a fokola lijalong, ebile li kh'abeche e entse lihloho tse shebahalang hantle.

'Me Ngobese o ile a nahana hore tsela engoe eo a ka bonang hore na teko ena e atlehile ke hore a fumane boima ba tse ling tsa likh'abeche ha a qetile ho etsa teko. O ile a bekha likh'abeche tse leshome (10) karolong e 'ngoe le e 'ngoe.

O ile a ngola boima boo tjena:

Nomoro ea Likh'abeche	Molora	Li kh'abeche tse sa kenany tekong	Motsoako os chilisi le sesepa
	Boima (likh'ilokereme; kg)	Boima (likh'ilokereme; kg)	Boima (likh'ilokereme; kg)
	Kh'abecheng ka	Kh'abecheng ka	Kh'abecheng ka
	'Ngoe	'Ngoe	'Ngoe
1.	0.85kg	-	0.75kg
2.	0.56kg	-	0.82kg
3.	0.55kg	-	0.59kg
4.	0.81kg	-	0.62kg
5.	0.33kg	-	0.86kg
6.	0.76kg	-	0.88kg
7.	0.54kg	-	0.45kg
8.	0.59kg	-	0.73kg
9.	0.62kg	-	0.55kg
10.	0.88kg	-	0.65kg
KAKARETSO	6.49kg	0	6.90kg

Ha a qetile, a ngola maikutlo a hae ka mekhoa ena e meraro, hore na ke mokhoa ofe oa ho loantša hoaba o ileng oa mosebeletsa ho feta emeng. Qeto ea hae ebile hore ka ha o tsebile mokhoa o mosebelelitseng ho feta emeng, nakong e tlang, o tla o sebelisa likh'abecheng tsohle tsa hae e seng tse 'maloa feela

Molora	Kh'abeche e seng tekong	Chilisi le sesepa
Seo ke se nahanang:	Seo ke se nahanang:	Seo ke se nahanang:
Molora o ntse o saletse	Hoaba ene e haketse hoo ke	Likh' abeche tse neng li le
kh'abecheng, ka ha o mong o	ileng ka tlameha ho tlosa li	seratsoaneng sena li ne li
ile oa kenella mamenong a	likh' abeche tse neng li se	phetse hantle li bile li le
mahaba. Ke nahana hore	tekong kaofela, joale ha lina	boima ho feta tse ling. Ke ne
molora ke oona o ileng oa	ho bekhoa. Ha ke kholoe li	ke fafatsa motsoako beke tse
chesa mahaba ana. Hape ha	ne li ka bopa. Ho sebelisa	ling le tse ling tse peli, haholo
pula ena, molora o oa	molora kapa chilisi le sesepa	ha pula e ile ea na. Motsoako
hlatsoeha, e be ke tlameha	ho molemo ho feta ho se	ona o bonahala o bolaea
ho o tšela hape.	etse letho ho hang.	hoaba e leng ntho ea
		bohlokoa hobane hoaba e ke
		ke ea fetela lijalong tse ling.
		Ke tla sebelisa motsoako ona
		le nakong e tlang.

Ha re nahaneng haholo ka seo 'Me Ngobese a se entseng. Le uena u ka sebelisa mohlala ona oa hae ho etsa liteko tse joalo jareteng ea hau. Re tla sebelisa setšoantšo sena ho u thusa ka liteko tseo u tlang ho li etsa.



Ha u bona setšoantšo sena e tlabe e le nako ea hore u nahane ka hore na u tla etsa liteko joang jareteng ea hau hore u fumane liphetho tse khotsofatsang.

Ha 'Me Ngobese a ntse a etsa teko ena, o ile a ipotsa lipotso tsena tse latelang a ba a ikaraba tsona

- 1. **Pele, o ile a qala ka ho ipotsa hore na bothata ke bofe.** 'Me karabo ea e ba hore ke likh'abeche tsa hae tse hlasetsoeng ke hoaba, e leng ntho e sa nepahalang.
- 2. **Bothata boo nka bo fenya joang?** 'Me Ngobese a nahana hore a ka bofenya ka ho fafatsa molora kapa motsoako oa chilisi le sesepa likh'abecheng tsa hae.
- 3. **A ipotsa hore na mokhoa ona o tla fenya bothata ba hae joang?** 'Me Ngobese a nahana hore tšebeliso ea metsoako ena e tla felisa hoaba

- 4. A ipotsa hore na o tla bona joang hore metsoako ena e tla sebetsa na? O ile a fafatsa likh'abeche tse ling ka molora, tse ling ka motsoako oa chilisi le sesepa, ho tse ling a se ke a tšela letho. Eaba o bala hore na ke hoaba e kae e teng lijalong tseo tsa hae.
- 5. **Ke tla fumana likarabo joang?** Ke tlabe ke shebile eng? 'Me Ngobese one a bala hoaba e teng likh'abecheng tsa hae beke le beke, abile a ngola fatše seo a se fumaneng. O ile a fumana hore likh'abeche tse neng li sa kena tekong li ne li e na le hoaba e ngata haholo, athe ka ho sebelisa molora le motsoako a ka fokotsa ho ata hoa hoaba, ha feela a li sebelisa beke tse ling le tse ling tse peli.
- 6. **Mokhoa o mong oa ho fumana likarabo ke ofe?** Ke tla sebelisa eng? Ke tla sebelisa eng? 'Me Ngobese a bekha likh'abeche tse leshome (10) serapeng ka seng, ha teko e felile a se a bile a kotutse. A fumana hore likh'abeche tse leshome (10) tse ileng tsa fafatsoa ka molora li bekhile 6.49kg, tse ileng tsa sebetsoa ka motsoako ea eba 6.9kg. Hona ho bolela hore, likh'abeche tse ileng tsa fafatsoa ka motsoako oa chilisi le sesepa li ne li le boima ho feta tse fafalitsoeng ka molora. Ha a kaba a boloka tse neng li sa kena tekong hore a libekhe.
- 7. **Ke tla sebelisang ho bona hore likarabo tsa ka li nepahetse?** Likh'abeche tse neng li ena le hoaba e fokolang kapa li kh'abeche tse neng li le boima sekaleng ke tsona tse ka nkoang li nepahetse.
- 8. **Ke tla bapisa joang teko ee le mokhoa oo ke tloaetseng ho o sebelisa tšebetsong ena eaka ke le sehoai?** Tsela eo 'Me Ngobese a tloaetseng ho
 sebetsa ka eona joalo ka sehoai ene e le ho se etse letho ka hoaba, joalo ka ha
 a ile a etsa likh'abecheng tse neng li sa kena tekong. Tekong ena 'Me Ngobese
 o hlokometse hore molora hammoho le motsoako oa chilisi le sesepa li fokotsa
 hoaba kh'abecheng ea hae. O boetse a hlokomela hore a li sebelise ka bobeli,
 haholo nakong tsa lipula. Leha ho le joalo, o nahana hore motsoako ke ona oa
 'makhonthe ho loantša haoba kh'abecheng ea hae.

Kahar'a mabokosana a latelang, u tla fumana lipotso tseo u ka ipotsang tsona ha u se u rerile ho etsa teko. Ho bile hona le sebaka moo u tlang ho ngola likarabo teng.

	Moralo o ka sebelisoang tekong ea meroho e fokolang ka palo		
1.	Bothata ke bofe?		
2.	Bothata boo nka bo fenya joang?		
3.	Hobaneng ha ke sebelisa mokhoa oo?		

4.	Mokhoa oo ke tla o leka joang?	
5.	Ke tla fumana likarabo joang? Ke tlabe ke shebile eng?	
6.	Mokhoa o mong oa ho fumana likarabo ke ofe?	
7.	Ke tla sebelisang ho bona hore na likarabo tsa ka li nepahetse?	
8.	Ke tla bapisa teko ee le mokhoa oo ke tloaetseng ho o sebelisa t'ebetsong e eaka ke le sehoai joang?	

Ha u etsa liteko life kapa life, ho bohlokoa hore u be le mokhoa oo u ka u sebelisang ho bona hore na likarabo tseo u lifumaneng li nepahatse, le ho bona hore na teko eo e atle- hile kappa che. Ha u etsa liteko tsa ntho tse ngata ka nako e le 'ngoe u sa tsebe hore na u tla sebelisang ho bona hore na e fela e le tsona, u keke oa tseba hore na e bile motsoako o fe o sebelitseng. Sena ke se etsahetseng tšoantšisong ena e latelang.

Ho etsahalang ha re leka mekhoa e mengata ea ho hlola mathata ka nako e le 'ngoe?

Haeba lintho li atleha kapa li hloleha re tla tseba joang hore sephetho se teng se bakiloe ke eng?



Seholoholo se bohloko

Ka letsatsi le leng nkhono e mong o ne a tšoeroe ke seholoholo...



Motho e mong le e mong a hlaha ka ea hae keletso.

E ea ho nkhekhe

Noa tee ea limatlafatsi







BOHLOKO BA MOKOKOTLO

Pheletso ya pale ya bohloko ba mokokotlo

Ntho e tšoanang le e tšoantšisong mona e ka be e etsahetse ho 'Me Ngobese, haeba a ile a fafatsa molora le motsoako oa sesepa le chilisi likh'abecheng tsa hae ka nako e le 'ngoe. A kabe a sa tseba hore na mokhoa o molemo ho loantša hoaba ke ofe.

Ntho e ntle ka ho etsa liteko ke hore u ka arolelana tsebo ea hau le metsoalle le bahaisane, e be e ba tsoela molemo. Le bona ha ba etsa liteko, ba tla arolelana tsebo ea bona le uena, e le hore u se hlole u ikhathatsa ka ho etsa teko tseo hape. Ka tsela ena motse oa lona o ka etsa qeto ea hore na mokhoa o ka sebelisoang ke ofe 'me motho e mong le e mong a ka o sebelisa.

Resource Material for Homestead Food Gardeners

Chapter 2: Handouts (isiZulu)

Handout 1 Ucwaningo Lwabalimi (Farmer experimentation)

1. Ucwaningo Lwabalimi



Ekulimeni ,sihlangana nezinkinga ezintsha njalo ngasosonke isikhathi sidinga ukuthola izindlela zokuxazulula lezinkinga .Singafuna ukuzama izindlela ezintsha kwesinye isikhathi .Kumele sizizame lezindlela ngaphandle kokuzifaka enkingeni thina noma ngaphandle kokuzandisela izinkinga .Singakwenza lokhu ngokuthi senze ucwaningo .

Ucwaningo ukuhlola indlela esenza ngayo izinto ukuze sibone ukuthi umphumela uzophumelela yini . Uma sithola ukuthi zikuphi izinkinga bese sithola izimbangela zezinkinga ,singaqhamuka nezindlela noma nomphumela walezizinkinga.Singenza ucwaningo ukuze sibone ukuthi indlela esenza ngayo iyasebenza ngempela. Senza ucwaningo endaweni encane kuqala ,umakwenzeka lungasebenzi , zonke izitshalo zonakele .

Nasi isibonelo sika nkosikazi Ngobese wakwaHlongwa (Umzumbe,South Africa). Wanquma ukwenza ucwaningo ngezindlela ezahlukene ukulwa nezintwala zekhabishi ezitshalweni zekhabishi lakhe. Wayeke wezwa ngezinto ezimbili ayengazizama. Okukuqala ukufaka umlotha emacembeni ekhabishi , okunye kwakunguchela ngensipho enopelepele ekhabishini lakhe. Lemiphumela yezintwala zekhabishi wazitholela yena ,ngaphandle kokuthi achithe imali eningi.

Unkosikazi Ngobese wathatha inxenye encane yengadi yakhe (engangokunye eshumini 1/10) njengesibonelo . Wahlukanisa ingadi yakhe izinxenye ezintathu wazibekisa ngokukhulu ukucophelela.

Umlotha	Akufakwa nga lutho	Upelepele nensipho	

- 1. Kweyokuqala wafafaza umlotha ekhabishini lakhe .
- 2. Kweyesibili akafakanga lutho.Okusho ukuthi akazamanga eminye yemiphumela yakhe lokhu wakwenza ngoba efuna ukubona ukuthi ngabe imiphumela yakhe isebenza ngempela .Ngamanye amazwi ,wayefuna ukubona ukuthi umphumela usebenza kangcono kunokungafaki lutho
- 3. Kweyesithathu wafaka noma wachelela ngensipho enopelepele.

Wagada futhi wabheka ocwaningweni lakhe. Njalo ngesonto wayebheka ikhabishi lakhe futhi abhale phansi ukuthi mangaki amakhabishi anezintwala .Wakwenza lokhu ukuze akhumbule ngqo okwenzekile ,ekugcineni ukuze akwazi ukunquma ukuthi iyiphi indlela esebenza kangcono.

Isonto	1 Umlotha	2 Akufakwangwa lutho	3 Upelepele –nensipho
1,2 kanye no 3	Azikho izintwala zekhabishi	Azikho izintwala	Azikho izintwala
4	Fafaza umlotha uma izintwala zekhabishi zivela	Izintwala ziyavela;ezingangeshumi esitshalweni ngasinye.Ezinye zezitshalo zinezintwala kuphela.	Chela upelepele nensipho uma izintwala ziqhamuka
5	Zikhona izintwala ezingangezinhlanu isitshalo ngasinye	Manje izintwala sezigcwele kuwo wonke amacembe zingangekhulu isitshalo ngasinye	Izintwala kubonakala sengathi zinyamalele
6	Ziyanda izintwala manje sezivela nasezitshalweni lapho ebezingekho khona phambilini.Fafaza umlotha	Izintwala zivela nakulezo zitshalo ebezingenazo phambilini.	Ziyanda izintwala.izintwala zivela nasesitshalweni ebezingenazo .Fafaza upelepele nensipho futhi
7	Ziyancipha izintwala .ezinye izitshalo azinazo izntwala.isimo sezulu esishisayo ,amacembe abukeka eshile .lngabe umlotha na?	Izintwala seziyazigcogcomela kuzo zonke izitshalo.Isimo esishisayo sezulu akukho ukuhashuka	Izintwala zincane ,ezinye zezitshalo azinazo izintwala .lsimo sezulu esishisayo , alishi ikhabishi
8	Amacembe ahashukile /nashile asekhishiwe kwoda isitshalo sisakhula- kukhona izintwala ezincane	Izitshalo azimili kahle . izintwala sezisuka lapha ziye lapho kukhona umlotha nalapho kukhona upelepele- nesipho .	Zibalwa izintwala ,kodwa ziyanda

9	Izintwala ziyanda kancane ngemuva kwemvula enamandla .Awusebenzisanga umlotha oningi	Waquma ukulikhipha ikhabishi enndaweni okungafakwangwa lutho ,ngoba bezingamili futhi zigcwele izintwala Besezigcogcomela nakweminye imibhede	Izintwala ziyanda kakhulu ngemuva kwemvula enamandla. Chela futhi
10	Ezinye zezintwala kuzo zonke izitshalo ,kodwa aziziningi kakhulu		Izintwala zincane kakhulu .lzitshalo ziqala ukukhipha amakhanda
11	Makhathaleni ziyanda izintwala kunzima ukusebenzisa umlotha ezitshalweni ngoba sezikhipha izigaqa manje, kodwa zama ukufafaza imbijane nje		Ziyanda izintwala .lzitshalo zikhipha izigaqa manje .Chela futhi.
12	Ukuvuna		Ukuvuna
Umphumela	Izintwadlana nje,izigaqa sezinomlotha futhi azibukeki zizinhle .	Azikho izigaqa .lzitshalo zibulawe izintwala	Izintwala zincane ezitshalweni , Izigaqa zinhle ezitshalweni

Wacabanga ukuthi enye indlela yokubona ukuthi ucwaningo lusebenzile wukukala isisindo samakhabishi ngemuva kocwaningo. Wakala amakhabishi angu10 kulowo nalowo mubhede .

Wabhala imiphumela yakhe ethebuleni ngenzansi.

Isisindo sesikhabishi nga KG	Umlotha	Lapho kungafakangwa lutho khona	Upelepele oxujwe nensipho
	Inombolo yekhabishi	Inombolo yekhabishi	Inombolo yekhabishi
1. 2.	0.85kg	1-	0.75kg
3.	0.56kg	2-	0.82kg
4. 5.	0.55kg	3-	0.59kg
6.	0.81kg	4-	0.62kg
7. 8.	0.33kg	5-	0.86kg
9.	0.76kg	6-	0.88kg
10.	0.54kg	7-	0.45kg
	0.59kg	8-	0.73kg
	0.62kg	9-	0.55kg
	0.88kg	10-	0.65kg
INANI	6.49kg	0	6.90kg

Umlotha	Lapho kungekhokhona lotho	Upelepele-nensipho
Ngicabangani:	Ngicabangani:	Ngicabangani :
Kusekhona umlotha ezigaqeni zekhabishi, omunye umlotha ungene ekugoqekeni kwamacembe ekhabishi.Ngicabanga ukuthi umlotha ulihashulile ikhabishi.Umlotha futhi uyagezeka emvuleni,futhi kumele ngiphinde ngiwufake	Zibeningi kakhulu izintwala zekhabishi kwaze kwamele ukuthi ngilikhiphe lonke ikhabishi lapho nginga fakanga lutho khona, futhi ngeke ukwazi ngisho nokuwakala amakhabishi. N Gicabanga ukuthi abengeke aze abe nezigaqa.Ukusebenzisa umlotha noma upelepelenensipho kuncono kunokungenzi lutho.	Ikhabishi kulombhede libukeka lilihle kakhulu futhi linesisindo esikhulu kakhulu kunawonke . Kumele ngifafaze umphumela kanye ngemuva kwamasonto amabili , okukakhulu uma linile . Upelepele nensipho ubukeka ubulala izintwala zekhabishi okuyinto enhle ngoba azibalekeli kwezinye izitshalo .Ngizosebenzisa upelepelenensipho ngesikhathi esizayo.

Akesicabange kakhudlwane ngalokhu Unkosikazi Ngobese akwenzile. ngasenzisa isibonelo sakhe ukuhlela ucwaningo engadini yakho.

Sizosebenzisa lesithombe ukukusiza ngocwaningo lwakho.

Ucwaningo



Ngesikhathi ubona lesithombe, kuzoba isikhathi sakho sokuthi ucabange ukuthi ungazenzela ucwaningo engadini yakho uzitholele imiphumela emihle.

Ngenkathi enza lolucwaningo, uNkosikazi Ngobese wazibuza imibuzo ethile ,futhi wayiphendula yena

- 1. Okokuqala, wazibuza ukuthi ikuphi inkinga .lphendulo ithi kunezintwala zekhabishi ekhabishini lakhe ucabanga ukuthi lokhu kuyinto embi .
- 2. Siyini isixazululo kule nkinga? uNkosikazi Ngobese wacabanga isixazululo esisodwa ukuthi akafafaze umlotha ekhabishini lakhe ,esinye ukuchela ngopelepele –nensipho kuxutshiwe .
- 3. Kungani lomphumela uzoyixazulula inkinga? UNkosikazi Ngobese wacabanga ukuthi lemiphumela izoziqeda izintwala zekhabishi
- 4. Ngizowuhlola kanjani lomphumela ?uNkosikazi Ngobese wafaka umlotha kwamanye amakhabishi, kanye no pelepele-nensipho kwamanye futhi, wase engenzi lutho kwenye inxenye yocwaningo. Wabe esebala izintwala zekhabishi.

- 5. Ngingawubheka kanjani umphumela. Yini engizoyibheka? uNkosikazi Ngobese wabheka ukuthi zingaki izintwala zekhabisi ekhabishini lakhe njalo ngeviki ,futhi wayebhala ukuthi utholeni. Wathola ukuthi lapho engenzanga khona lutho kwakunezintwala eziningi ,eziningi kakhulu ukwendlula lapho okwakukhona umlotha nalapho kuno pelepele –nensipho wabona ukuthi angazinciphisa izintwala zekhabishi uma enza lokhu njalo ngemuva kwamasonto amabili.
- 6. Ngingayibheka kanjani imiphumela yami futhi . Yini engizoyikala?uNkosikazi Ngobese wakala amakhabishi angu 10 kuleyo naleyo nxenye lapho ayenze khona ucwaningo ngemuva kokuvuna .Wathola ukuthi amakhabishi angu 10 okwakusebenziswe umlotha ayenesisindo esingu 6.49 futhi angu 10 ayelaphokusebenziswe upelepele –onensipho ayenesindo esingu 6.9kg . Lokhu kusho ukuthi ikhabishi okwakusebenziswe upelepele –nensipho lalinesisindo esikhulu .Lapho kungafakangwa lutho khona alizange lize likalwe .
- 7. Ngingawukala kanjani umphumela noma isibonakaliso? Ikhabishi elinezintwala ezincane kakhulu futhi elinesisindo esikhulu kakhulu kunawo wonke ilo elihle.
- 8. Ngingaqhathanisa kanjani ucwaningo lwami nendlela ejwayelekile engilima ngayo? Indlela ejwayelekile ka Nkosikazi Ngobese kwakungezi lutho ngezintwala zekhabishi, njengalenxenye lapho ayengafakanga lutho khona .Kulolucwaningo,uNkosikazi Ngobese wabona ukukthi umlotha kanye nopelepele nensipho kuyalehlisa izinga lezintwala zekhabishi ezitshalweni zakhe.Wabona ukuthi kumele aphindelele ukukufaka kokubili,Okukakhulukazi umalina.Manje usecabanga ukuthi upelepele oxutshwe nensipho ikhona okuyindlela esebenzayo yokuqeda izintwala zekhabishi.

Ethebuleni elilandelayo uzothola imibuzo ezokusiza ukuthi ukwazi ukudlela ucwaningo lwakho,futhi kunesikhala lapho uzobhala khona izimpendulo.

Uhlelo locwai	ningo endaweni encane
1. Yini nkinga?	
2.Siyini isixazululo kulenkinga?	
3.Kungani lomphumelo uzoyixazulula lenkinga?	

4.Uzowuhlola kanjani lomphumela?	
5.Ngizowuhlola kanjani umphumela.Yini okumele ngiyibheke?	
6.Ngigayibheka kanjani futhi imiphumela yami.Yini okumele ngiyikale?	
7.Ngingawukala kanjani umphumela wami noma isigcino?	
8.Ngingaliqhathanisa kanjani ucwaningo lami nendlela engijwayele ukulima ngayo	

Uma wenza ucwaningo kubalulekile ukukala imiphumela yakho,bese ubheka imiphumela yocwaningo ukuthi iyasebenza yini. Uma uzama izinto eziningi ngesikhathi esisodwa,ngaphendle kokucabanga ukuthi uzoyikala kanjani imiphumela yakho,kungenzeka ungazi ukuthi isiphi isixazululo esisebenzile.

Into enhle ngokwenza ucwaningo ukuthi ungabelana nomakhelwane kanye nabangane bakho ,lokhu kungezeka kubasize . Uma nabo benza ucwaningo, nabo bangabelana nawe ngolwazi lwabo, kuze nawe ungazenzeli ucwaningo .Umphakathi ungaquma ukuthi iyiphi indlela ongayisebenzisa , wonke umuntu angasebenzisa lendlela yokulima.

Agricultural Water Use for Homestead Gardening Systems

Resource Material for Facilitators and Food Gardeners

Chapter 3 Living and Eating Well

Chapters: Resource Material

Introduction to the Learning Material (TT 431/1/09)

Chapter 1	Rural realities and homestead food gardening options TT 431/1/09)
Chapter 2	 Facilitation for homestead food gardening (TT 431/1/09) Handouts: Chapter 2 – Homestead Food Gardener's Resource Packs
Chapter 3	- Living and eating well (π 431/1/09)
	- Handouts: Chapter 3 – Homestead Food Gardener's Resource Packs
Chapter 4	 Diversifying production in homestead food gardening (TT 431/2/09) Handouts: Chapter 4 – Homestead Food Gardener's Resource Packs
Chapter 5	 Garden and homestead water management for food gardening (TT 431/2/09) Handouts: Chapter 5 – Homestead Food Gardener's Resource Packs
Chapter 6	 Soil fertility management: Optimising the productivity of soil and water TT431/3/09) Handouts: Chapter 6 – Homestead Food Gardener's Resource Packs
Chapter 7	Income opportunities from homestead food gardening (TT 431/3/09)

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Aims

The aims of this chapter are to introduce you to the concepts of food security and nutrition. We will look first at international food security concepts and then how these are applied in South Africa. We will then explore food security in South Africa and focus on what the malnutrition issues in South Africa are.

We will look broadly at processes for intervening in food security. Because being food secure relates to many different aspects of peoples' lives – many of which they currently do not have control over – interventions in food security need to be multi-dimensional. This means that many different activities (and types of activities) need to be implemented together to lead to a long-term positive outcome. We will discuss and explore some of these types of interventions.

We will then look specifically at practical ways in which facilitators can work with food security and nutrition issues on a community and household level. We will look at the kind of information facilitators can use in learning events. Finally, we will apply this learning to homestead food production and discuss the implications for production.

What am I going to learn?

Each Chapter starts with a list of the things you should be able to do when you have successfully completed the chapter. This list gives you some idea of what to expect when you start working on the chapter, but, more importantly, you should come back to the list when you have completed the chapter to check if you have achieved all the objectives set out for the chapter. This means that you can monitor your own progress quite accurately. On the following page is the list of these outcomes for this chapter:

What a	am I going to learn?	What should I be able to <u>do</u> after completing this unit?	Done √ Can't do ×
		Explain the concept of "healthy /	
1	Define integrated household food security in terms of balanced eating, malnutrition and economic impact	 balanced eating" Define and identify malnutrition Explain the "virtuous cycle" Discuss the South African household nutrition situation Explain the economic impact of food (in)security 	
2	Discuss food security and nutrition concepts, challenges and interventions	 Explain what food security is Discuss emerging themes and challenges to food security Outline South African perspectives and food security interventions 	
3	Apply tools for nutritional analysis and advice towards improved food security, improved nutrition and addressing diverse dietary needs in a household	 Describe and apply the ten food based dietary recommendations Explain and implement "go, glow and grow" foods in a household's daily diet Explain and implement a 'balanced diet' Explain and facilitate 'dietary diversity' (D.D.) 	
4	Facilitate a process of change in the food behavior of a household towards improved food security	 Analyse with community members their food habits, choices and their nutrition concerns Compare their nutrition and food habits to broadly accepted guidelines for nutrition Identify (with them) ideas by which they can improve their situations through their gardening practices and their food preparation, preservation and storage processes 	
5	Establish intensified household food production practices in a household to improve nutrition		
6	Implement food preparation, preservation and storage techniques in a household	 Implement food preservation and storage techniques in a household Implement food preparation techniques in a household Introduce recipes and ideas for nutritious dishes and snacks to a household 	

How the Chapter is organised

You will find that several different icons are used throughout the Chapter. These icons should assist you with navigation through the Chapter and orientation within the material. This is what these icons mean:



Facilitation tools

Are processes that you can use in workshop situations, to support your work in the field.



Research /Case study

The results of research or case studies that illustrate the ideas presented.



Looking at research, facts and figures to help contextualise things.



Activity

This indicates an exercise that you should do – either on your own (individual) or in a group.



Copy and handouts

These sections can be copied and used as handouts to learners / participants

3.1 Is South Africans' food secure?

The big ger picture...

What is food security and healthy eating?



Food Security is about whether food is available (availability), whether a person can get hold of it (access) and about how the food is prepared and stored (utilisation)

Food security

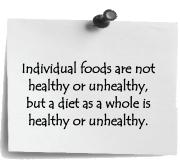
If we want to know whether a family, or a country, enjoys **food security**, we need to know whether:

- There is enough food around, in a household or in a country (availability);
- People can get hold of it when they need it, e.g. can grow it, or afford to buy it (access); and
- ❖ People are using the food well (**utilisation**), meaning the food does not go to waste due to contamination or loss of nutrients from the food.

The third point shows us that just having lots of food, does not necessarily mean there is **nutrition security** – in other words, that a person gets enough **nutritious** ingredients to be healthy. This is one of the reasons why even non-poor families in South Africa suffer from malnutrition.

Food safety is also important, because if we handle food incorrectly - like not washing it properly or allowing it to stand in hot conditions for too long - the food can become unhealthy or even dangerous.

Adequate care is necessary to ensure that especially children, sick people and other vulnerable groupings get access to food (point 2 above). Therefore the skills and motivation of the mother or household caregiver is also an important matter for food security and healthy eating.



Healthy food – or rather, balanced eating

We have all heard that we should be eating healthy foods. However, this is not the whole truth: individual foods are nor healthy or unhealthy, but a diet as a whole is healthy or unhealthy.

Some general rules of healthy eating are:

- ❖ People need to eat from all the food groups every day, (See Figure 4: The Five Food Groups) and they need to get enough but not too much from each food group. This is a balanced diet and depends on amounts of food and selection.
- The greater the variety of foods they can eat every day, the better. This is called detary diversity.
- ❖ Also, there are certain foods we need to be especially careful that we don't eat too much of such as sugar and salt.

To stick to a healthy diet (balanced eating), we therefore need to know more about:

- ❖ The different food groups or food types; and
- How people's food needs differ, depending on their age, health status and even gender. For instance, the same food combination can't provide in the diverse needs of a baby, a working adult man, and a sick grandmother!

There are three particularly useful tools to help us analyse eating habits:

- The ten Food-Based Dietary Guidelines (FBDG);
- The three main food related functions, which are easy to remember as the "Go, Grow and Glow foods". Today the Five Food Groups are preferred by dieticians, but communities follow the three "food functions" better. The Five Food Groups are: carbohydrates (starches), animal proteins, plant proteins, fruit and vegetables, and oils, fats and sugars;
- ❖ The Household Dietary Diversity Score, which is calculated by filling out a Dietary Diversity Questionnaire about food eaten in the past 24 hours.



Those working in food security should never underestimate the challenge involved in trying to help people to change their food habits.

Helping people to change their food behaviour

People find it very hard to change their behaviour, and particular food behaviour. Most of us stay with the food habits we learned as children, including food tastes and preferences, food preparation methods, composition of meals, regularity of eating and even the setting in which we normally take our meals.

In Chapter 2 we looked into specific methods (i) to mobilise people into home food production, and (ii)

to help them establish new daily and seasonal patterns of activity – built around a home food production focus.

Helping people to change their food habits would require similar deliberate and structured intervention processes. The **nutrition workshop** described later in this chapter, is a good starting point.

What happens when people eat poorly?

We have already mentioned above that malnutrition occurs even in families that have enough money to buy all the food they need. People may eat poorly for a variety of reasons, for example:

- ❖ The poor often do not have enough money to buy all the food they need, or may not have land and inputs to grow enough food. Very often they lack water to grow enough food;
- Many households do not put their daily meals together in such a way that all their dietary needs are met;
- Others lose a lot of the nutrients through the preparation of food, through neglect or lack of knowledge;
- People are sometimes too ill to eat properly, or their bodies too weakened to benefit properly from the food they eat, or they may lose nutrients through diarrhoea or excessive bleeding; and
- ❖ In families where the caregiver may herself be sick or undernourished, she may not have enough energy or motivation to prepare regular, proper meals for herself and the family.

Three types of malnutrition

Whatever the particular cause of poor eating, the effects are predictable. Malnutrition can be either:

- Over-nutrition;
- Under-nutrition: or
- Micronutrient deficiencies.

Later in this chapter, we will look specifically at Protein-Energy Malnutrition and specific micro-nutrient deficiencies, such as Vitamin A, iron, zinc and iodine deficiencies and their effects.

Chronic under-nutrition and/or micro-nutrient deficiencies, especially among young children, can have long-lasting effects on their quality of life.



Research result 1: Meeting the needs of young children

The Carnegie Task Force on Meeting the Needs of Young Children (Richter & Griesel, 1994) notes evidence that brain development before 1 year is more rapid and extensive and vulnerable to environmental influence than previously realised. Inadequate nutrition before birth and in the first years of life can seriously interfere with brain development and lead to neurological and behavioural disorders.

Malnutrition could lead to organ damage as well as to vulnerability to infections and poor health. Poor health in turn may have adverse effects on the child's acquisition of various essential skills, which normally develop very rapidly in the first few years of life. In particular, when brain growth and development are impaired, children cannot fulfil their intellectual potential.

Malnutrition can also affect the social and emotional development of children because it affects their caregivers. It seems to have a negative impact on caregivers' behaviour towards these children, who are difficult to care for and therefore makes care giving less rewarding (Richter & Griesel, 1994). Others note that long-term childhood malnutrition may have effects such as aggression, release of latent behavioural abnormalities, and a general orientation to mistrust the world.

<u>Latent behavioural</u> <u>abnormalities:</u>

When people behave in ways that is socially difficult and can cause a lack of acceptance by others.

A virtuous cycle: improved nutrition and improved economic wellbeing

Zere et al. (2003) say that "Studies have indicated

that malnutrition contributes to a significant reduction in **lifetime earnings**. Long-standing malnutrition, especially during the pre-school age is likely to result in irreversible damages to the child's intellectual development... Thus, the repercussions of socio-economic inequalities in child nutritional status are likely to be **self-perpetuating**. This means that a malnourished child is likely to become an adult who will not be able to earn a decent living and is likely then to have malnourished children in turn.

Virtuous:

A good or self increasing or building cycle.



Various studies explain how hunger and malnutrition works to keep the poor locked into poverty, generation after generation.

Self-maintaining.

Chopra (Chopra, 2004) provides further insight: "Levels of poverty, hunger and under-nutrition are worsening in East and Southern Africa, even though they are improving in almost every other region. This undermines the achievement of United Nations Millennium Development Goals in this region. Instead of the potential virtuous cycle that could be created between improved nutrition and improved economic wellbeing, East and Southern Africa is currently caught in a vicious cycle of worsening poverty, hunger and under-nutrition. This exaggerates inequalities in income and health, and increases the vulnerability of the poor."

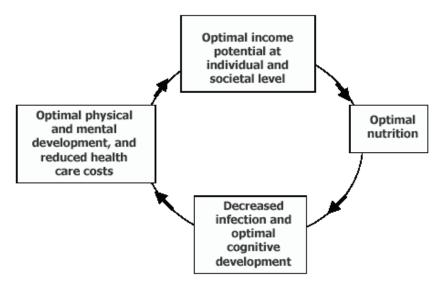
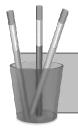


Figure 1: The virtuous cycle: improved nutrition and economic wellbeing (Chopra, 2004)



Activity 1: How malnutrition keeps people poor

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To understand how hunger and malnutrition contributes to intergenerational poverty cycles.

<u>Intergenerational:</u>

Between different generations in a family.

Instructions

Look at the paragraphs above taken from Zere and Chopra respectively. Think of practical ways that you know of, in which hunger and malnutrition cause the children of poor people to remain poor in their adult life.
An example could be : A malnourished child fails to thrive in school and leaves school with a low grade. S/he finds it difficult to find employment as an adult.
Your examples:

Is there a problem in South African households?

Although South Africa is a middle-income country, it has gross inequities in **income distribution**. A high proportion of the population has low incomes. Despite their low incomes, most households rely on purchased food. Poor families spend as much as 70% of their total income on food, leaving very little to meet other needs, or to undertake poverty-reducing initiatives. (Hendrik & Maunder, 2006)

According to De Onis et al. (2000) nutritional status is the best global indicator of well being in children. It is no accident that 'prevalence of under 5 malnutrition' is used as a key indicator when we measure progress towards Millennium Development Goal 1: Eradicate Extreme Poverty and Hunger (African Development Bank, 2002).

Prevalence:
Generally existing.

Eradicate:
To get rid of completely.

It is well accepted that the well being of children is fundamental in the fight against poverty, and that the nutritional status of children tells us a lot about the wellbeing of the whole family. Therefore, the results of the 2005 National Food Consumption Survey in South Africa, which measured the nutritional status of children 1 to 9 years of age, gives us good insight in our nutritional status in general.



In 2005, children 1 to 9 years of age from all over South Africa were surveyed to determine their nutritional status. The number of children who participated in this study was 2469. Of these children:

- ❖ 18% were stunted (when children are smaller and shorter than well nourished children of the same age)
- ❖ 9% were underweight
- ❖ 4.5% were wasted (This is a medical term for someone who is very thin and has virtually no fat or muscle on their bodies, i.e. suffering from starvation)
- 1% were severely wasted (severe starvation)
- ❖ 14% were overweight
- ❖ 64% were vitamin A deficient
- 28% were anaemic (This is a medical term for people who suffer from iron deficiency)
- ❖ 45% were zinc deficient

Children who had an infection had a lower vitamin A status. KwaZulu-Natal had a particularly high prevalence of vitamin A deficiency.

Women between the ages of 16 and 35 in the same household as the children were also included in the survey. The number of women who participated in the survey was 2450. Of these women:

- ❖ 52% were overweight or obese
- ❖29% were anaemic

From these results, it is clear that South Africa is not doing well from a nutrition perspective. While **clinical malnutrition** is not all that common, **chronic malnutrition**, measured as food poverty (too little food) and low energy (not enough nutrition in the food) are estimated to exist in 43% and 55% of the population respectively.

Clinical Malnutrition:

Malnutrition that requires medical treatment

Chronic malnutrition:

Malnutrition present for a long time that does not yet require medical treatment – also called sub-clinical.

Further:

- Food variety depends on the number of food items available whereas food diversity refers to food groups.
- On average, rural and urban households have only 8-10 food items in store respectively. This means they have poor dietary diversity. A good score is around 18-20;
- Stunting (children do not grow fast enough and are small for their age) among children aged 1-9 years is estimated at 22%;
- Sub-clinical vitamin A deficiency in children between 6-71 months is estimated at 33% and anemia (iron deficiency) for the same group, 21% (Department of Health, 2005); and
- ❖ A subjective hunger scale shows 52% of households are food insecure, 23% are at risk of food insecurity and only 25% are food secure.
- ❖ The groups most vulnerable to food insecurity are: the rural poor, female headed households, disabled, the elderly, retrenched or evicted farm workers, AIDS orphans, households with HIV sufferers, cross border migrants and the "street homeless" (Hendriks and Maunder, 2006).

Misselhorn (2006) described the real food security crisis in South Africa as: "..a

creeping vulnerability, rooted in structural socioeconomic and political conditions, eroding livelihoods, resulting in malnutrition and reducing resilience to environmental hazards". This is echoed in other documents related to South Africa's lack of progress towards reaching the Millennium Development goal to – reduce by half the proportion of hungry people, by the year 2015 (DFID, 2002).

Creeping vulnerability:

Vulnerability to poverty and hunger that increases slowly over time.

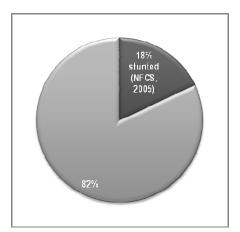
In general, children and pregnant and breast feeding women are the most **vulnerable to malnutrition** because of their special dietary needs. The most common forms of malnutrition are protein-energy malnutrition and deficiencies in micronutrients, namely vitamin A, iron, zinc, and iodine.

Protein-energy malnutrition

Protein-energy malnutrition occurs when children do not get enough food to meet their energy and nutrient needs. They become underweight, and eventually, if they do not have an adequate diet for some months or years, they will fail to grow normally and become **stunted** (shorter and smaller than well fed children of the same age). Malnourished children have less energy to play and run. They are often listless, look unhappy, learn slowly and have a low resistance to infectious diseases.



Stunting is due to chronic malnutrition – especially on protein-energy foods and micronutrients. It is a major problem in South Africa, affecting as many as 40% of children in poorer areas.



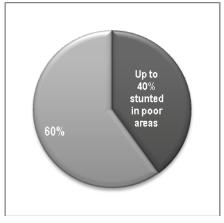


Figure 2: Stunting due to malnutrition in urban and rural areas of South Africa (Department of Health, 2005)

Two severe forms of protein-energy malnutrition, namely Marasmus and Kwashiorkor, are less common in South Africa (2% combined on average, but higher in poorer areas).

- ❖ Marasmus. Signs include extremely thin legs and arms, a sunken "old person's" face, a distended abdomen and a tendency to feel miserable and cry a lot.
- ★ Kwashiorkor. This may also include a severe lack of Vitamin A and other micronutrients. The signs may appear quickly in times of stress, such as when a child is ill. The legs, arms and face of these children appear swollen, they develop a "moon" face (where the skin is pale and thin and may be peeling), and their hair becomes paler and straighter than normal. They may also appear extremely unhappy and listless.

Child suffering from Marasmus





Child suffering from Kwashiorkor

In some areas of South Africa, a practice has developed over many years, of starting babies as young as two weeks old on watery cereal porridge, in the belief that this improves their diet. In fact, this porridge is of no nutritional value to such young infants who cannot digest any of it. This practise easily causes malnutrition and severe damage to the child. Breast milk is most nutritious to such young children.

This practise is an unfortunate hybridisation of a traditional practise, where wholemeal cereals were fermented using a special natural enzyme, thereby reducing the porridge into a more digestible form for young infants when breastfeeding problems would occur. In the modern day, low-nutrient white maize meal is used, and then this is not fermented, but simply watered down to get the thin consistency.



Infants become malnourished if they do not get enough breast milk, or if complementary foods are introduced too early or too late, or do not provide the required energy and nutrients.

How to tell?

The best way for a mother in South Africa to know whether her child is doing well, is to make sure that she has a **Road-to-Health Chart** for each of her children and visits the clinic regularly to keep up-to-date with measurements and immunisations. The clinic will attend to the following aspects:

- ❖ Healthy children will increase their weight every month. Thus, monthly weight measurements, especially for infants and pre-schoolers (ages 1-5 years) is the easiest way to determine malnourishment.
- ❖ Between the ages of 1-5years, the thickness, or circumference of a child's midupper arm does not change much. This is because the arm muscles of a healthy child will grow, while the fat that the child had as a baby decreases. If a child is growing too slowly, or losing weight, the arm circumference will be smaller than normal. The mid-upper arm circumference of a well-nourished child is above 13.5

cm. When the circumference diminishes to between 13.5-12.5 cm, the child is moderately undernourished and below 12.5 cm, the child is severely undernourished.

Immunisation protects the child against illness. This also helps with adequate nutrition, because sick children often eat poorly and/or lose nutrients, e.g. through diarrhoea.

We saw in Chapter 2 that the role of the household food security facilitator is to help food insecure mothers/caregivers to overcome powerlessness. Helping her to discover the nutritional needs of her family, and enabling her to produce this food without the need for cash, liberates her – also from the fear of facing the nursing sister at the clinic.

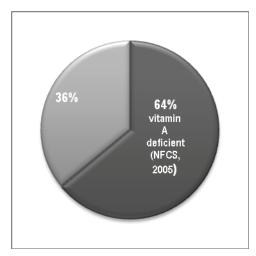


Unfortunately, mothers are often scared of visiting the clinic, fearing that they will be scolded by the nursing sisters for failing to take proper care of their children's nutritional needs.

They feel powerless to feed their children correctly, through lack of money or knowledge, and may choose to avoid the scolding, thereby placing the children at even further risk.

Micronutrient deficiencies

Vitamin A deficiency



This is one of the **most serious nutritional childhood diseases** and is often associated with proteinenergy malnutrition. In South Africa a mild Vitamin A deficiency is quite common and leads to impairment of growth and brain development. Vitamin A deficiency causes night blindness and in even more serious cases may damage the eyes permanently, cause total blindness and increase the risk of infection and death.

A small amount of fats and oils help in the absorption of Vitamin A, so when a diet is low in fat, only small amounts of Vitamin A are absorbed. The deficiency is often worsened by health problems such as measles and diarrhoea.



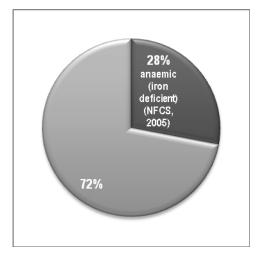
One of the best ways to prevent Vitamin A deficiency is to encourage families to grow and eat food all year round that are rich in Vitamin A. These include dark green leafy vegetables and yellow or orange coloured fruits and vegetables Among animal foods, liver is high in Vitamin A. Mothers who are breastfeeding should eat plenty of food rich in Vitamin A.

Iron Deficiency (Anaemia)

Anaemia is the most widespread

nutritional disorder in the world. The most common cause is a lack, or deficiency, of iron in the diet. Other causes are parasitic infections (such as hookworm) and loss of blood during menstruation and childbirth.

Iron is an important mineral needed to produce red blood cells and transport oxygen/ air in the blood. People with anaemia usually have pale tongues and lips and the inside rims of their eyelids are white.



Iron rich foods include liver, meat and fish. Also legumes such as peas, beans, bambara, groundnut and cowpeas.

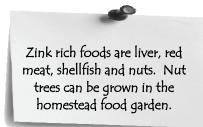
These must be eaten with foods rich in Vitamin C such as oranges, guava, papayas, spinach, cabbage, broccoli and marrows.

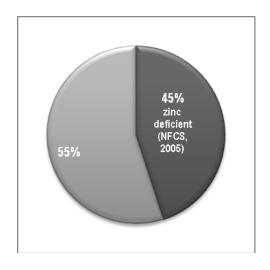
Both legumes and Vitamin C rich foods can be grown in the garden.

Anaemia reduces people's ability to work, increases tiredness and slows children's learning.

Zinc deficiency

Zink deficiency causes wounds to heal very slowly or not at all. It also contributes to stunting.





lodine deficiency

lodine deficiency is caused by lack of iodine in food and in the soils in which food is grown. This is most common in areas where iodine in the soil has been washed away by rain, and inland areas that do not have easy access to seafood.

lodine deficiency disorders include goitre, which is indicated by a swelling of the thyroid gland; low birth weight; inhibited growth in children; and impaired mental development. In severe cases, brain damage can be caused.



Deficiencies can be combated by homestead food gardening

From the discussion above it is clear that many foods that combat micro-nutrient deficiencies can be grown in a homestead food garden. When families plant their own vegetables and fruit trees in their garden, they should therefore plant a variety of vegetables and fruit trees, including both winter and summer crops, with different ripening times (e.g. early and late fruiting peaches). It is also important that they plant vegetables of different colours, for example, both green and yellow vegetables. It is particularly important that they plant yellow/orange vegetables because of the high prevalence of vitamin A deficiency in South Africa.



Activity 2: Analysing food security in South Africa

Aim

To use available information to assess what the most pressing food security problems are in South Africa, to analyse their causes and plan targeted interventions to address these problems.

Instructions

Read carefully through section 3.1 to understand the most common nutritional problems in South Africa, what causes them, and what can be done at the household level to turn the ongoing 'vicious cycle' into a 'virtuous cycle'.

Then use Table 1 to analyse the results of the National Food Consumption Survey (2005). For each of the findings, fill the empty columns as follows:

Expected effect on the child's health and wellbeing:

Think about immediate and long-term, temporary and permanent effects, e.g.

- -Effect on brain development (permanent)
- -Effect on energy for learning (daily)
- -Severity of impact on the child's lifelong health and earning capacity, etc.

What needs to be changed in the child's diet?

Think about specific nutrients that the child is lacking; how much food the child should be getting; and diet diversity.

What can the mother or household caregiver do?

How easy is it to solve or improve this particular problem in a food insecure household? Think about which foods can be grown at home to supply the identified nutrients; better food safety and preparation methods to preserve nutrients; and so on. Make sure that your suggestions would work for a cash-poor household.

Table 1: Analysis of results from the National Food Consumption Survey

Survey findings among 1-9 year olds	Expected effect on the child's health and wellbeing	What needs to be changed in the child's diet?	What can the mother/ caregiver do?
18% stunted			
9% underweight			
4.5% wasted			
1% severely wasted			
14% overweight			
64%Vitamin A deficient			
28% anaemic			
45% zinc deficient			

The economic impact of food (in)security

It has been estimated that money invested in early childhood nutrition programmes in developing countries could potentially return at least three times its worth in terms of academic achievement, without even considering the other social and economic impacts (Behrman and Rosenzweig cited in Webb and Rogers, 2003).

Malnutrition can have a wide range of economic impacts, which can be categorised as follows: (Quoted from Professor James Blignaut, 2009)

Impacts on **personal and household income**, which may include:

- * Reduction in labour productivity and ability to generate an income;
- Reduction in the learning ability of the child/young adult and hence ability to generate income in future;
- Reduction in immune system, implying increased hospitalisation and treatment costs;
- An increase in the portion of the household income that has to be dedicated towards food, thus families are less able to acquire other essential items like educational material and energy; and
- ❖ An increased exposure and vulnerability to changes in food prices, since food comprises such a large portion of the household's budget. This restricts the household's expenditure options and economic and financial freedom of choice. This is a condition exacerbated by changes in climatic conditions since it reduces the household's ability to buffer itself against a deepening of malnutrition and poverty.

Impacts on quality of life, for instance:

- Persistent hardship creates an environment filled with negative sentiments, which, in turn, leads to a disillusioned populace. It is hard to grow and develop, either as a household or as an economy, within such conditions and it therefore impacts negatively on the economic development potential of an area and of the country; and
- Early impairment of the ability to work, or early death, implies emotional pain, income losses and an added burden on those remaining behind.

Impacts on the **economy**, which may include:

- Increased need for and expenditure on social welfare and public health facilities, with the result that there is a reduction in the ability to spend public resources on economically productive activities;
- Reduced skills in the general labour force; and
- Reduction in the general growth potential for an area, and for the economy at large.

3.2 Food security concepts, challenges and interventions

Some definitions and concepts

Let us have a closer look at some of the concepts mentioned in the introduction to this chapter.

What is food security?

Food Security exists when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life.



FOOD SECURITY FRAMEWORK

Food availability refers to whether there is enough food to be had. At the household level this includes all food available through production, purchase, foraging and exchange.

Food access refers to whether food is within reach and affordable. At the household level this relates specifically to the household's ability to purchase food or produce their own.

Food utilization refers to how food is used. This is determined by the quantity and quality of dietary intake and includes how food is stored, cleaned and prepared.

Food stability refers to food security over time and relates to sustainable increased production and food preservation and storage practices.

The Diger picture...

Throughout the world, this food security framework is being used to analyse situations and to develop strategies and plans to address food security issues. (FAO, 2006)

Care and health are essential elements for ensuring good nutrition for all household members. Households can obtain their food through a combination of their own production or from buying food. Households also need to understand which combinations of food make a healthy diet and they need the skills and motivation to make good decisions on family care and feeding practices (FAO, 2004). This will then provide **food security** for all the individuals in the household.

Vulnerability refers to all the factors that place people at risk of becoming food insecure. The degree of vulnerability of an individual, household or group of people is determined by their exposure to risk factors and their ability to cope with or withstand stressful situations.

Food availability, access and utilization all affect each other:

- ❖ Food **availability** is necessary but not sufficient for **access**. Examples would be where households cannot afford buying available food or do not pick and eat food that is available in their homestead garden.
- Access is necessary but not sufficient for utilization. For example a household may be able to buy food, but only buy mealy meal rather than also buying some vegetables.
- Also, if food is **utilized** properly it improves **access** for all (through improved health and good nutrition, for example).

Risk is a cross cutting issue that affects all components of the food security framework. It increases people's **vulnerability** to food insecurity. Some examples of risk could be if a crop fails or if a provider loses their job or if a caregiver falls ill.



Activity 3: Food security definitions

Aim

To consider how the elements of the food security framework (i.e. food availability, access and utilization) affect the food security of a household.

Instructions

Look at the speech bubbles below where Lindiwe shares some of her ideas. Then see if you can work out why each statement was placed in the different columns (availability, access, utilization and risk/vulnerability) of Table 2: 'Elements of food security'. Think of factors that affect the food security of households.

Then, fill the Table 2 with a few examples of your own.

Table 2: Elements of food security

Table 2: Elements of food security									
Availability	Access	Utilization	Stability	Risk/Vulnerability					
Many rural households can no longer produce their own staple foods because they are too poor to pay for the inputs and land preparation costs.	The price of maize meal has doubled in the last six months. Many rural households get as much as 80% of their meagre incomes from social grants.	Malnutrition among children aged 1-5 years has increased dramatically in the last two years.	Stored grain / maize become spoilt by pests and mould.	The price of maize meal has doubled in the last six months. Many households that have produced maize have been unable to sell their maize at a profit because of low or changeable national and international prices.					
Availability	Access	Utilization	Stability	Risk/Vulnerability					

Lindiwe shares some ideas regarding national realities.

The price of maize meal has doubled in the last six months.

Stored maize becomes spoilt in storage.

Many rural households can no longer produce their own staple foods, because they are too poor to pay for the inputs and land preparation costs.

Poor households get as much as 80% of their meagre incomes from social grants.

Households that have produced maize have been unable to sell their maize at a profit, because of low or changeable national and international prices.

Malnutrition among children aged 1-5 years has increased dramatically in the last two years.

en sed vo A student from UKZN. Photo: E Kruger,



Emerging themes and challenges to food security

Below is a summary of the most important challenges that need to be addressed in the world, to ensure food security for poor people (IFAD, 2006).

- ♦ Most of the world's poor are rural and will remain so. The urban-rural gaps in poverty, health and literacy are large and, on the whole, not narrowing.
- Increased urbanisation the past few decades has led to large populations of urban poor.
- ❖ The extremely poor spend almost three quarters of their income on food. They receive over two thirds of their calories from staples and earn perhaps 10-50% of their income growing them. Availability and access to farmland tends to safeguard against extreme poverty.
- ❖ The rural poor require access to affordable inputs, services and research, roads and other infrastructure that normally only governments can supply.
- Access to water is increasingly important.
- The heavy biases against the rural poor and women in acquiring human assets, especially health and education are generally still in place.
- The poor's shortage of assets compels them to live mainly by selling their labour power. Increasing the market value of that power through job creation and public works programmes is important.
- Coalitions of the poor among themselves and with others, provides the best hope for them to become integrated with a process of sharing wealth and development more equitably.

Assets:

This refers to things of value in relation to creating a livelihood. Financial assets could be money, physical assets could be land and water, human assets are qualities and skills. Social assets are valuable relationships in a community or society.

Coalitions:

Groups, associations and organisations.

 Overall development assistance must be raised and the share going to agriculture must reflect its importance in generating livelihoods. (IFAD,2006)

Food security is a complex issue. Many different aspects need to be taken into account such as the local households, the region they live in, their country's policies and strategies. As well as how their country is situated in the world economy.

In order to produce food security, all three elements of the food security framework (availability, access and utilization) must support each other. This implies that interventions that aim to strengthen any one element must ensure that results will complement or enhance the other elements of the framework and especially that they will not negatively affect each other.

❖ For example, if food production or an increase in income are achieved at the expense of proper childcare, then the child's food utilization and health may become even more at risk.

This may require the broadening of an intervention to include activities addressing the other elements. For example:

- ❖ When food production is diversified and increased, it is important that families also learn how to utilize the new products; and
- Markets need to be found to supply the necessary inputs for production as well as absorb the production surpluses (i.e. sale of surplus). This can bring about synergistic effects. Better fed people can produce a better output and their income increases. So does their capacity to manage their food security.



Concerns of a rural woman in Bergville, KZN (World Vision participant). Photo: E Kruger, 2007.

At present most food security interventions worldwide are aimed at reducing the vulnerability of poor people by attempting to reduce their risks and increase their opportunities.

Poor households typically make economically rational decisions in the face of a wide variety of **risks and opportunities**. They adapt local knowledge to many different situations and balance possible gains against the inputs required. These inputs are usually their own labour, capital and natural resources. But risks arise in many quarters. Some examples are discussed below:

Food availability can be affected by climatic fluctuations, soil fertility depletion or the loss of a household's productive assets.



A woman from Qumbu, EC, in her garden. Photo: E Kruger, 2006.

- For people producing a surplus for sale, market access can be affected by changing global terms of trade, market disruption during crisis, or non-farm employment insecurity.
- ❖ Lack or loss of income to purchase food, i.e. access to food is negatively influenced by physical insecurity (conflict, illness and death), loss of coping options (i.e. loss of part time employment), or the collapse of safety net institutions and arrangements (stokvels (local saving clubs), social security systems).



❖ Food utilization is often impaired by epidemic (e.g. cholera) or life threatening disease (HIV/AIDS, TB, Malaria), lack of appropriate nutrition knowledge or culturally prescribed taboos that affect access to nutritious foods according to age or gender (Webb & Roger, 2003).

Reducing **vulnerability** rests on helping communities better predict and manage the many risks they face on a daily basis. Many organizations have been promoting **livelihood diversification**. This means the use of a number of different ways by households to earn a living and create assets for themselves. It has been shown that livelihood diversification helps to increase the amount of money a family can earn and can also increase the ability of a family to withstand shocks and crises. For example also growing a field of traditional drought tolerant crops such as sorghum, millet, cow peas and squash can ensure some food for the family, even if the maize crop fails. Skills and nutrition are prerequisites for adults to be able to work productively.

It has been estimated that money invested in early childhood nutrition programmes in developing countries could potentially return at least three times its worth in terms of academic achievement, without even considering the other social and economic impacts (Behrman and Rosenzweig cited in Webb & Roger, 2003). This underpins the importance of **nutrition interventions for the under 5-year** category, as the most crucial target group.

While the **negative impacts of HIV/AIDS** on food security are clear, the required response is less so. A public health approach alone is insufficient. Nutrition plays a buffering role in slowing the course of HIV/AIDS. Offering food parcels through clinics and providing take home resources for foster families through schools, could help to maintain resource flow for the affected families. Of course, any action in this area raises questions about targeting, as well as exit strategies.



Facilitator's Note:

Be sure to emphasize that nutrition plays a buffering role in slowing the course of HIV/AIDS.

Given the long-term nature of the epidemic, activities built around short project cycles may not be an appropriate response. Perhaps a focus on homestead food gardening could greatly assist towards adequate nutrition for HIV/AIDS affected adults and orphans. This can be seen as an asset building and asset protection input that looks after available resources (food gardens) and builds on it.



Government spending on direct transfers in terms of grants and food parcels, is ten times higher than its spending on assistance for productive activities such as food gardening and it is still not adequate in terms of the demand and in terms of rapid increase in food prices.



Above: Mrs. Mdletshe from Hlabisa. Photo: E Kruger, 2008.

Focusing on asset building and protection measures (looking after available resources), income diversification activities and certain kinds of food insurance capabilities (grain banks, consumption credits and meals in schools) in HIV-affected areas, would serve to reduce some of the uncertainty that increases as more adults fall sick.

Lindiwe shares some ideas on government policies and interventions



Activity 4: Analyzing food insecurity in South Africa

Aim

Think through the impact of rising food prices, reliance on wages and HIV/AIDS on poor households in South Africa.

Instructions

Read through the following statements until they make sense to you:

- 35% of the SA population is vulnerable to food insecurity and live off less than R20/day.
 - 11% live off less than R10/day.
- ❖ Social grants form the main income for around 12 million people (29%) at a cost of around R60 billion/year.
- ❖ 5.3 Million people are living with HIV/AIDS. (South Africa's population at the moment is about 48 million people). There are around 500 000 new infections per year. Only 1 in every 5 of these people has access to ARV treatment.
- ❖ There are 1 million double orphans in South Africa (this means children who have lost both their parents).
- Poorer households spend around 71% of their income to purchase food.

Now (individually or in a group), try to think of interventions, both by government and by people themselves, which could alleviate these problems.

Record your ideas in the table below. One example has been provided.

(Kruger, E. 2009)

Table 3: Food security issues and interventions

Problem/issue	Possible intervention
Poorer households spend around 71% of their income on purchased food.	 Assist households to produce some of their own food, so that income can be spent on other necessary items Assist households to buy cheaper food

South African Food Security Interventions



In South Africa, food security has increasingly become a central focus of many Government and Non-Government programmes.

The **Integrated Food Security Strategy** falls in the Social Cluster of Government services (Health, Welfare, Education, Agriculture, Local government, Labour and to a lesser extent Water Affairs & Forestry, and Land Affairs). It was put together in the year 2000 by the Department of Agriculture, which is the lead department of this initiative.

This strategy outlines a framework for analysis and interventions. It defines linkages between different government departments and other stakeholders and describes their roles and responsibilities.

The goal of the Integrated Food Security Strategy is to eradicate hunger, malnutrition and food insecurity by 2015. The **strategic objectives** are to:

- Increase household food production and trading;
- Improve income generation and job creation opportunities;
- Improve nutrition and food safety;
- Increase safety nets and food emergency management systems;
- Provide capacity building; and
- Provide stakeholder dialogue.



Lindiwe shares her idea on the Integrated Food Security Strategy

There is a confusing array of interventions around food security. Coherence in strategies and interventions that consciously tackle multiple elements and levels of food security, however, are sorely lacking (Empowerment for Food Security Programme, KZN, 2008).

Projects in food gardening for example, are being implemented in *ad hoc* ways by a number of different Government Departments (Health, Social Welfare, Agriculture, Water Affairs and Forestry, Environmental Affairs and Tourism, Public Works, Education, Housing, Land Affairs and District and Local Municipalities) as well as Non-Government groups such as World Vision and CINDI (Children in Distress Network) and many others. In all cases, there appears to be a lack of clarity around the expected contribution towards food security that food gardens could or should provide.

On the following page, Table 4 gives a summary of the different food security interventions in South Africa, how they would fit into the international perspectives, and their overall contribution towards a more holistic concept of food security. Homestead food gardening is used as a specific example.

Lindiwe shares ideas on the summary food security interventions in Table 4



A government programme to support **Intensive Homestead Food Production** would be a good example of a strategy that addresses all three aspects of food security (i.e. availability, access and utilization) in an integrated way.

	Food Security		Any one intervention in any one of these levels and/or aspects will have gaps. Interventions and combinations of interventions that incorporate as many of these aspects as possible, are needed. Intensive Homestead Food Production is a good example of a strategy that addresses all three aspects of food security in an integrated and very direct way.			- Diversity; vegetables, fruit, small livestock - Continuity; food throughouth the year - Rain water harvesting at homestead level	- Use, cycle and build up local resources	 Minimize external inputs such as fertilizer and seed Value adding, processing, storage Co-operation and sharing 	Provides a focus on nutrition, sustainable and diversified use of natural resources,
Household	AVAILABILITY	Local (community and household) food self sufficiency	Local production of staples (for food and income) - Programmes for increased productivity, eq. Improved varieties, use of fertilizer and lime, minimum tillage - Provision of inputs to facilitate production; eg provision of fertilizer, seed, loans, equipment - Community gardens for vegetable production Integrated farming systems (productivity, efficiency(meaning intensification) and sustainability) - Programmes to include environmental aspects, eg landcare - Promotion of integrated, diverse systems; eg. intercropoing with legumes, crop rotation, plant-animal cycling, zero-grazing - Promotion of continuity; incl storage, seed saving, systems for cropping throughout the year, multiple croping systems	ACCESS	Food Aid Short term interventions	Emergency food relief - Environmental and social crisis distribution of food to affected groups Vulnerable groups and individuals - Targeting of supplementary feeding eg malnourished children, people on medication for TB and HIV/AIDS - Provision of food to vulnerable individuals and households, targeted through health and social systems - Primary School Nutrition Programme	UTILIZATION	Nutrition	Nutrition education and awareness - Programmes such as exclusive breastfeeding, importance of vitamin A - Promotion of improved sanitation and food preparation practises - Promotion of eating a diverse range of fresh fruit and vegetables - Fortified food and supplements - Targeted at households rather than individuals - Intra-and inter household distribution
National/Provincial		National and regional food self sufficiency	Macro-economic policy - Imports and exports (eg. GATT) - Pricing and tax controls (eg VAT exemption on basic food stuffs) - Distribution and storage - Futures eg. SAGIS Governance - Commitment, eficiency and coordination of government process - on local and regional level; including Municipalities		Vulnerability and poverty, regional and local differences in availability	Markets - Local markets; access, pricing, - Transport, Income and Expenditure - Small businesses; incl value adding and processing - Job creation - Social grants eg pensions and child grants.		Nutritional value of food and food safety	Fortified food and supplements - Fortification off staples such as maizemeal and bread on a national level - Sale of iodized salt Food safety



Activity 5:

The scope for interventions at a household level

Aim

To understand the possibilities of interventions for food security in terms of availability, access and utilization at a household level.

Instructions

Have a good look at the Table 4 above. Then	answer the following questions.
Write down the interventions related to food ones of these have a direct impact at house	•
For example: Programmes to provide input homestead gardeners if seed is provided.	·
	NOTE: 'Impact' means results or outcomes of an intervention or action that are either expected or unexpected, and both positive or negative.
Write down the interventions related to food the likely impact of these interventions at a horizontal description.	
For example: Programmes for assistance in related to farming enterprises, will impact farmers in rural areas that can take advar important to increase the productivity and	positively on the incomes of those ntage of such opportunities. It is
Write down the interventions related to food the likely impact of these interventions at a house	
For example: Vitamin enriched maize mea South Africans and as such has a strongly	
Now write down your thoughts relating to Inte How will this address availability, access and could the government programme look like t	utilization in an integrated way? What

3.3 Food security and nutrition

Tools for nutritional analysis and advice

This section will thus focus on tools that facilitators can use to help households to assess and analyse their nutritional habits.



Facilitator's Note:

The first step in working with households towards food security is to focus on nutrition. Be sure to emphasize nutrition by discussing foods and eating habits.

Food Based Dietary Guidelines

The latest way of working with nutrition is to follow food based dietary guidelines (Ferreira, 2008), rather than focusing on individual nutrients, as has been the case in the past. This is particularly important when working with small-scale farmers and rural people who may or may not be aware of the different vitamins, minerals, fatty acids and the like.

The food based dietary guidelines also represent a national effort of academics and policy makers to put forward a unified set of guidelines, appropriate to all, which our health and nutrition sectors could use. These foodbased guidelines are summarized below.



Facilitator's Note:

These guidelines assume a basic understanding of food groups, which are discussed in the section below.

1. Enjoy a variety of foods

- Eat a number of different foods from all the different food groups.
- Give attention to methods of preparation.
- Address chronic diseases of lifestyle such as diabetes

Eat 20-30 different foods in a week

2. Be active

- Do 30 minutes of moderate to vigorous activity on most days. Daily household tasks, and especially working in the garden, would already make up more than 30 minutes!
- Being active protects against chronic diseases such as hypertension, diabetes, heart disease and cancer.

Do 30 minutes of exercise on most days.

3. Make starchy foods the basis of most meals

- Consume cereals and root vegetables in unprocessed or minimally processed form (high in fiber). This will also contain some micronutrients, fat and protein.
- About 1 cup per day is recommended for adult women, about 1.5 cups per day for adult men. This should be at least 55% of one's total energy intake.

Eat at least 2 large spoonfuls of starch every day.

4. Eat plenty of vegetables and fruit every day

- Eat citrus, onions, garlic, carrots and tomatoes (high in vitamin C and A) and crucifers (cabbage, kale, broccoli, cauliflower).
- Consume dark green (e.g. spinach) and orange (e.g. pumpkin) vegetables.
- A minimum of 5 portions or about 2 cups per adult per day is recommended.

Eat 2 fruits and 5 vegetables every day.

5. More legumes for better overall health

- Eat dry beans, peas, lentils and soy regularly.
- Grain legumes are beans, lentils, cow peas, chickpeas, peas, etc.
- Oil seeds are soya beans and peanuts for example.
- This provides good quality protein, carbohydrates, fiber, vitamins and minerals.

Eat up to half a cup of legumes per day.

6. Food from animals can be eaten every day

- This includes meat, fish, chicken, milk and eggs.
- Besides protein, this contributes towards the intake of calcium, iron, zinc and omega-3 fatty acids.
- Eat low fat meats and use fats sparingly in preparation.
- Add small amounts to a plant based diet.

Take about 2 cups of dairy per day (milk, yogurt, maas, cheese...)

Eat 4 eggs per week

Eat 2-3 servings of fish per week

OR

up to 4-5 servings of meat (chicken and red meat) per week.

7. Eat fats sparingly

- Lower the fat intake from meat.
- Non-dairy creamers should be avoided, as they have no nutrients and can be harmful.
- Eat low fat margarine.

Use little fat and oil.

8. Eat salt sparingly

- High salt intake can lead to hypertension. For hypertension eating a diet high in vegetables and fruits, with low fat dairy products, for 8 weeks will significantly reduce the blood pressure.

Sprinkle, don't shake

9. Water, the neglected nutrient.

Drink at least 2 liters of water per day

10. If you drink alcohol, drink sensibly.

Figure 3: The Ten Food Based Dietary Guidelines

The Five Food Groups

Another way of introducing the concepts of the Five Food Groups in nutrition at a community level is to use the idea of "Go, Grow and Glow" foods. Foods are grouped according to their functions in human health and wellbeing. Here, there is still not a focus on nutrients, but rather a focus on food-based recommendations.

When introducing nutrition concepts at a community level, the handouts on the next pages, prepared for LIRAPA (2008), could be useful. These introduce the different food groups in a way that is easy to remember, without going into too much detail regarding the nutrients, vitamins and minerals supplied by each group. The handouts can be used in a workshop situation or with individuals and households.

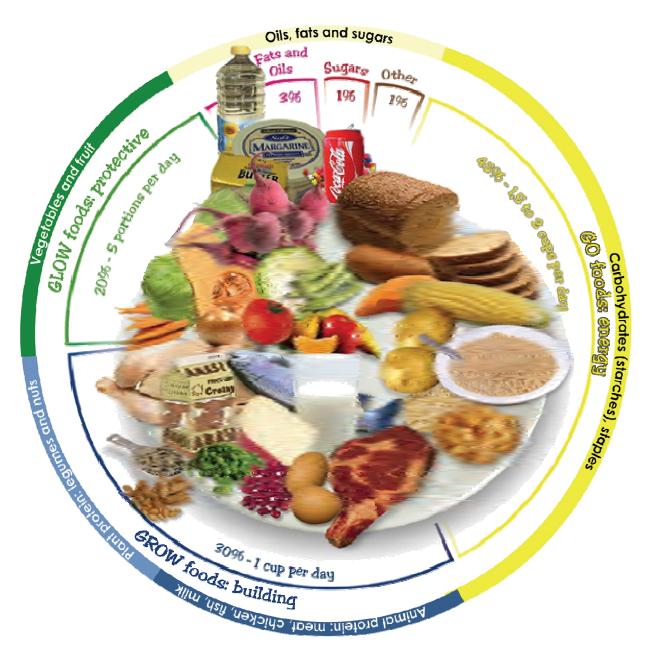
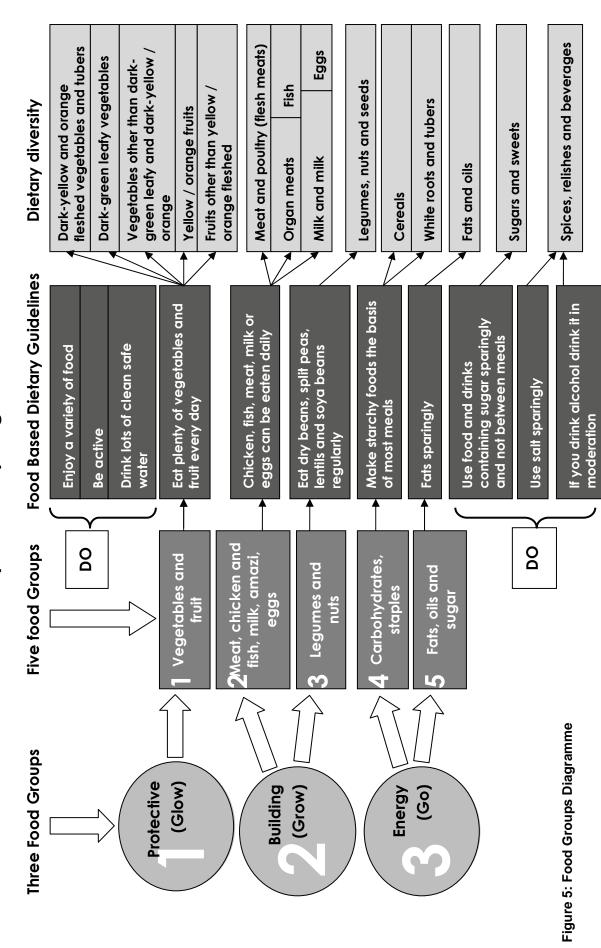


Figure 4: The Five Food Groups: choices and proportions needed daily (Diagram: M.E. Botha, 2009)

Variety is the key to good nutrition:



How can we eat well to be in Good Health?

To eat well means to eat lots of different kinds of food so that our bodies get all the good things that they need. This does not mean that you need to buy expensive food. By thinking carefully about what you eat, and what you prepare for your family, and choosing food well you can eat in a healthy affordable way.

There are three main types of food:

Go foods, grow foods and glow foods.

You should eat things from each of these types of food every day. You should also drink about eight glasses of water every day.

Good Energy/ Go Foods:



Sweet potato

Boiled, baked or mashed potato

Brown or white rice





Macaroni, spaghetti or other noodles

Bread



Dried beans and peas

Oatmeal



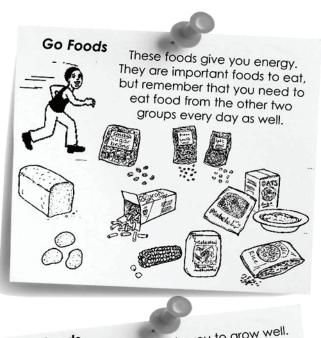
Bananas

Avocados

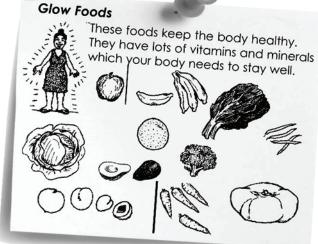


Try to have a fruit or vegetable with each of these meals. It is also good to add beans, meat, chicken or fish if you can.











Food safety tip

Always wash your hands with soap and water before you touch food, and after using the toilet. Wash both sides of your hands for a long time – count to 15 while you wash!

Cover any wounds or sores that you have when you are preparing food.

Good grow foods

These are the foods that contain a lot of protein. These foods help to maintain your body and muscles. They also help to prevent infections. It is important to eat some grow foods every day, especially if you are ill. Children need extra protein because they are growing. So do pregnant women.

Below is a list of some grow foods:

Beans

peas

soyabeans

groundnuts

chicken

chicken livers

fish

meat

eggs

cheese

maas (sour milk)

peanut-butter

nuts

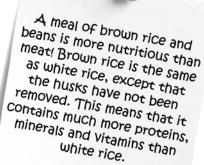
sunflower seeds



Eggs are especially good for children and pregnant women, as they contain protein, Vitamins, fat and Calcium.

Children can also eat beans or peas every day.

It is good for Children to eat small meals more often.



Good glow foods

The foods that help to fight infections are glow foods. These are foods with lots of vitamins and minerals. You need to eat lots of different kinds of glow foods as they all have different good things in them.



Selection and Preparation of Food

Drink lots of water

You need at least 8 glasses a day. You may not think that you need much water. But you can try and experiment on yourself. For three days drink 8 glasses of water. This does not include cups of tea and coffee. After those



three days, how do you feel? Do you have more energy and do you feel good?



People with HIV/AIDS need about 9 cups of liquid every day. If it's very hot or a person is doing a lot of exercise they will need another 3 cups of liquids. If a person has diarrhea, he or she will need to drink even more. Drinking water should be encouraged between meals, as too much liquid with meals can spoil the appetite. The water should be clean. If no clean water is available, boil it for at least 5 minutes to kill most germs.

Helping households to achieve balanced diets

It is important that there is a variety of each type of food. There should be a variety of starches, animal proteins, plant proteins, fruits and vegetables and oils, fats and sugars in a balanced diet.

A balanced diet contains all the essential nutrients and energy a person needs to grow, develop and stay healthy. Eating a balanced diet means that individual meals are also balanced, that is, each meal contains a proportion of the nutrients that a person needs every day. There are many ways of combining foods to make a nutritious meal. The basic nutrients of starch, protein, fats, vitamins and minerals need to be kept in mind.

The diagram below can be given as a handout to individuals to signify how much of each kind of food they will need "on their plates".

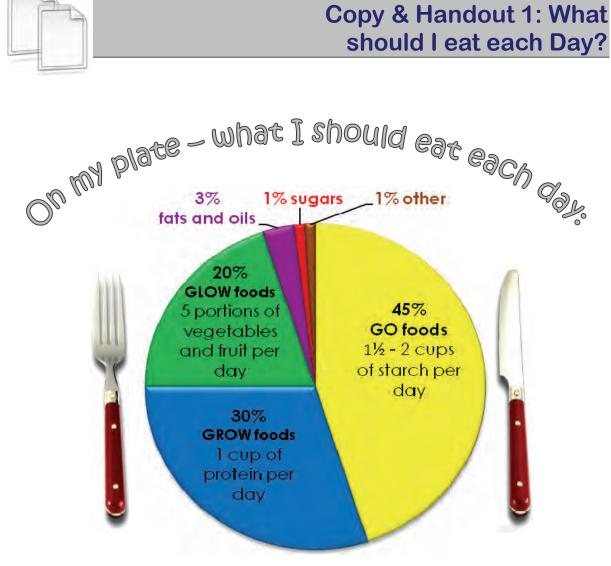


Figure 6: Proportion of foods to be eaten every day and mealtime

This "plate" can be used with monitoring forms to provide an analysis of what different members in the family is eating, how this fits into the recommended amounts and how the food garden contributes towards the nutrition of the family.

Table 5: What did we eat today? (1 portion = 1 typical serving).

We draw a circle around foods we got from our garden.

			Monday			Tuesday			
			Adults	Sick/old/ pregnant	Small kids	Adults	Sick/old/ pregnant	Small kids	
		1.5-2 cups/day							
<u>-</u>	o								
GO foods (starch)	maize, potato, sweet potato								
foods	ze, potat	CAO							
09	maize								
		4 aug/day							
GROW foods (protein)	Eggs Milk products; milk, maas Meat; chicken, red meat, fish peanuts, dry beans, peas	1 cup/day							
/ food	Egg oducts; r shicken, r uts, dry b	9,900							
GROW	Milk pr Meat; o pean								
	range	5 portions/day							
	Vit C, Vit A carrots, orange sweet potato, orange pumpkin, tomato,oranges, naartijes	Ca							
and fruit)									
es and									
jetable									
ls (vec	vitamins and minerals cabbage, onions, green beans, lettuce, beetroot	5 portions/day							
V food									
GLOW foods (vegetables									
s		and oils: r, margarine, animal fat							
softdrink		tea and porridge and SweetAid; biscuits, sweets							

Dietary Diversity

Dietary Diversity is another way in which one can work with a household to analyze their food and eating habits, with the intention of increasing diversity and balanced nutrition in the family.

Dietary diversity questionnaires assess the variety of the diet by summing the number of food groups eaten by household members or individuals in the **24 hours prior to the interview**. The assessment includes not only the **number of different food groups** consumed (variety), but also the **types of food groups** consumed (quality). The twelve major food groups inquired about are cereals, tubers, vegetables, fruits, meat, fish, eggs, legumes, milk and milk products, fats and oils, sugar and sweets, beverages. (See Table 6 below)

From this questionnaire, a household dietary diversity score (HDDS) is calculated by the facilitator. It gives a good "objective", internationally recognized indication of the access of a family to a varied diet and the nutritional quality of their diet. It can also give you a way of working with the family to improve or change their situation. The same questionnaire can also be used to assess an individual's score.

- At the household level one can measure economic access to a varied diet, because food groups that are not necessarily nutritionally sound are included such as sweets, beverages and alcoholic drinks.
- ❖ At the individual level one can measure nutritional quality because the questionnaire differentiates between food groups containing certain micronutrients, in particular vitamin A rich fruits and vegetables, and iron-rich organ meats. (FAO, 2007).



Activity 6: Working with a dietary diversity score

Aim

To look at the DDS questionnaire and think through how you could use this at a household level as a facilitation tool.

Instructions

Look at the questionnaire below. The simplest version of creating a score is simply to make a number 1 for a yes answer and a number 0 for a no. There are however many different versions. Most of them have the intention of analysing specific aspects, for specific reasons. Your challenge is whether having a score like this can in fact help you to intervene at a household level. What do you think?

The dietary diversity questionnaire can be used at either the household or individual level. If assessment of the nutrient adequacy of the diet is of primary concern, it would be best to collect the information at individual level by choosing one or two target individuals per household

Ask your respondents to:

Please describe the foods (meals and snacks) that you ate yesterday during the day and night, whether at home or outside the home.

- Start with the first food eaten in the morning.
- As the respondent recalls the food, underline the corresponding foods in the list under the appropriate food group and write "1" in the column next to the food group if at least one food in this group has been underlined. If the food is not listed, write it in.
- Probe for snacks eaten between meals.
- Probe for special foods given to children or lactating/ pregnant women.
- Probe for added foods such as sugar in tea, oil in mixed dishes or fried foods.
- If a mixed dish was eaten, ask about and underline all the ingredients of the dish.
- Once the recall is finished probe for food groups where no food was underlined. Write "0" in the right hand column of the questionnaire when it is ascertained that no foods in that group were eaten.

[Household level: consider foods eaten by any member of the household, and exclude foods purchased and eaten outside of the home.]

Table 6: Dietary Diversity Questionnaire

Question number	Food group	Examples	Yes=1 No=0
1	CEREALS	Corn/maize, rice, wheat, sorghum, millet or any other grains or foods made from these (e.g. bread, porridge, 'amahewu' – fermented maize based drink, pasta, biscuits, etc.) Insert local foods such as ujeqe and others	
2	VITAMIN A RICH VEGETABLES AND TUBERS	pumpkin, carrots, squash, or sweet potatoes that are orange inside + other locally available vitamin-A rich vegetables(e.g. sweet pepper)	
3	WHITE TUBERS AND ROOTS	white potatoes, white fleshed sweet potatoes, or foods made from roots.	
4	Dark Green Leafy Vegetables	dark green/leafy vegetables, including wild ones + locally available vitamin-A rich leaves such as amaranthus leaves, and other types of 'imifino', etc.	
5	OTHER VEGETABLES	other vegetables (e.g. tomato, onion, eggplant), including wild vegetables	
6	VITAMIN A RICH FRUITS	ripe mangoes and papayas, dried fruit such as apricots and peaches + other locally available vitamin A-rich fruits	
7	OTHER FRUITS	other fruits, including wild fruits	
8	ORGAN MEAT (IRON-RICH)	liver, kidney, heart or other organ meats or blood- based foods	
9	FLESH MEATS	beef, pork, lamb, goat, rabbit, wild game, chicken, duck, or other birds	
10	EGGS	Chicken or any other egg	
11	FISH	fresh or dried fish or shellfish	
12	LEGUMES, NUTS AND SEEDS	beans, peas, lentils, nuts, seeds or foods made from these	

Question number	Food group		Examples	Yes=1 No=0
13	MILK AND MILK PRODUCTS		milk, cheese, yogurt or other milk products such as 'amazi'	
14	OILS AND FATS		oil, fats or butter added to food or used for cooking	
15	SWEETS		sugar, honey, sweetened soda (cool drinks) or sugary foods such as chocolates, sweets or candies	
16	SPICES, CONDIMENTS, BEVERAGES		spices(black pepper, salt), condiments (soy sauce, hot sauce), coffee, tea, alcoholic beverages OR local examples	
Individual level only Did yo		Did yo	u eat anything (meal or snack) OUTSIDE of the home yesterday?	
Household level Did yo only		Did yo	u or anyone in your household eat anything (meal or snack) OUTSIDE of the home yesterday?	

⁹FAO. Nutrition and Consumer Protection Division, Version 4, December 2008. Guidelines for measuring household and individual dietary diversity. Rome, Italy.

Meeting the food needs of different family members

Different family members have different food needs. Some specific aspects are discussed below:

- ❖ Infants from birth to 6 months: Infants from birth to 6 months should receive breast milk only. It is the best food for a baby and provides all the nutrients infants need.
- Infants from 6-12 months: By 6 months babies should be introduced to other foods that supplement the energy, protein, vitamins and minerals provided by breast milk. This will accustom the baby to varieties in food flavours and textures. These supplementary foods are called weaning foods.

Food for babies needs to be clean, soft and easy to chew and digest. At this age a baby should receive a porridge made from the staple or main food, twice a day.

By the time the child reaches 1 year, the complementary foods should be increased to 4 or 5 times a day, in addition to breast milk. Once a baby is accustomed to liquid foods, and as the teeth appear, semi-solid and then solid foods can be introduced.

Staples like maize meal cooked with water are bulky. This means they have little nutrients or energy, compared with their volume. They need to be combined with nutrient-rich foods. These include for example mashed beans or groundnuts, mashed green leafy and orange coloured vegetables (which are rich in vitamin A), and soft fruits, such as pumpkin and papayas, with plenty of Vitamin C.

An excellent way to enrich porridge is to eat it with small amounts of animal or dairy foods such as cooked and mashed fish, chicken, meat or eggs, as well as milk and "maas".

To increase the energy content in porridge, make the porridge from fermented or germinated cereal flour and add a little vegetable oil to it.

- Children from 1-5 years of age: Young children are often the most at risk of malnutrition. They have very high energy and nutrient needs for their body size, in comparison with adults. Young children should eat 4-5 times a day. A simple way to do this is to prepare nutritious snacks between the main meals.
 - Eating habits are established early, so it is important to introduce young children to a large variety of flavours and textures of food.
- School age children: Children from school age onwards, need two to three meals per day, plus snacks between meals.
- Pregnant or breastfeeding women

Requirements for **iron** and **calcium** in pregnant and breastfeeding women are particularly high. If the mother does not satisfy the needs of her baby, the baby will draw on and reduce the mother's own store of nutrients. This puts the mother at increased risk of illness.

A varied and nutritious diet, with adequate staple foods and relishes/stews made from vegetables, legumes, eggs, meat and fish, and plenty of fruits should be eaten. Breastfeeding women should also drink plenty of water and other fluids (soup, milk...)

- ❖ The elderly: If they cannot eat a lot at a time, elderly people need frequent, small meals that can be easily chewed. Foods for the elderly should include a wide variety of grains, legumes, fruits, vegetables, and if available, dairy products.
- ❖ Except for young children who need to be fed 4-5 times a day, each family member should receive 2-3 main meals per day; ideally in the morning, at midday, and in the evening.



Copy & Handout 2: Special dietary needs

Special dietary needs of people living with HIV/AIDS

EATING WELL TO STAY HEALTHY

It is especially important that people living with HIV/AIDs eat healthy, balanced diets. Good diets prevent weight loss and help people to stay healthy longer. Losing weight is part of the disease process of HIV.

Try to eat 5-6 small meals every day, even if you don't feel like eating.

Eat the foods you like eating and make meals sociable events.

Take your time.

Drink lots of water, especially when you have diarrhoea.

Eat cooked vegetables, as liquid and soft foods are easier to swallow.

Take vitamin tablets.



From: Cindi Nutrition Working Group, 2005.

People infected with HIV lose weight from their muscles, rather than fat. It is important to eat foods high in protein such as meat and beans. Also eat lots of energy foods such as pap, bread, rice and potatoes. Make sure you eat lots of fruit and vegetables as well. So, the point is to eat as varied a diet as possible and as often as possible. What matters is not so much what you eat, as long as you eat enough. For example a plate of soft porridge with a tablespoon of cooking oil added is more nutritious than a plate of cornflakes. (TAC, 2007)

Feeding young children over six months of age

Complementary feeding means giving other foods in addition to breast milk. Most babies should start complementary foods when they are six months old. Now breast milk alone cannot supply all the nutrients they need.

Start by giving 1-2 teaspoons of semi-solid food, for example porridge or mashed potato and add other foods to make good complementary meals. These foods need to be rich in energy and protein (i.e. thick not thin porridges) and need to include fat (like a bit of oil or margarine), fresh fruit and vegetables (like mashed banana, butternut or carrots), eggs, milk foods and iron-rich animal foods (like meat, fish and poultry). More semi-solid foods are given over time. By the age of eight months, babies also like finger foods that they can hold themselves and by the age of 1 year they can eat family meals with snacks.

Ways to make porridge more energy and nutrient-rich include:

- Add oil, butter, margarine or ghee (energy) and flour made of legumes such as peanuts, beans (protein).
- Make porridge with germinated or fermented cereals.
- For germinated flour soak your maize or sorghum grains in water for 1 day. Dry them and leave in a cool, dark place to germinate. Then dry these sprouted grains. Grind into flour.
- For fermented porridge soak the flour in water (3 cups flour to 7 cups water) and leave to ferment for 2-3 days before cooking.



Recipes for feeding young children over six months of age (FAO, 2001)

Nutritious porridge

INGREDIENTS

- 5 Tablespoons of thick porridge (made with germinated, fermented or plain maize meal/flour)
- 1 Tablespoon of peanut/groundnut paste or flour
- 1 Egg
- 1 Handful of chopped spinach

PREPARATION

Add the groundnuts to the porridge. Add the raw egg and spinach and cook for a few minutes.

Small children also need snacks in between their 3 main meals of the day. Snacks can include fruit, boiled eggs, soured milk, bread with peanut butter (or groundnut paste), orange fleshed sweet potatoes, boiled or roasted green maize and roasted peanuts, pumpkin or sunflower seeds

Peanut biscuits that children will enjoy!

INGREDIENTS

- 12 Tablespoons of crushed, raw peanuts
- 4 Tablespoons of sugar
- 1 egg
- 6 Tablespoons of maize flour (mealie meal)
- 1 Tablespoon of sunflower oil

Water

PREPARATION

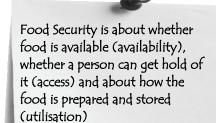
Mix the ingredients together. Shape the mixture into flat cakes. Cook the cakes slowly on a greased hot plate or frying pan.

3.4 Facilitating changes in food behaviour for improved food security

The role of food behaviour in food security

We know that food security is about availability, access and utilisation of food. This chapter will look at how the facilitator can help **households improve utilisation of food.**

When we help households to discover that they can grow a lot of food at home with their 'ten fingers' (i.e. without the need for money, tractors, or outside assistance), this provides them with a sustainable way to increase the



amount and variety of food available to the household. **Improved availability is achieved.**

Also **improved access is achieved** because production is right there at home, fully under the household's own control, meaning that they have easy access to the food produced. They need not ask permission, walk long distances, or take out money to get hold of the food.

- -A variety of fruit with different ripening times is particularly useful in this regard especially for children's access because it can be eaten straight from the tree without having to cook or prepare it first.
- -A tower garden next to the cooking area or kitchen further makes it very easy to harvest a variety of greens (imifino/morogo), even while cooking a meal.

This leaves the facilitator with the question of how to help the household achieve improved utilisation of the food.

The challenge of changing food habits

Food habits are established very early in life, and are very hard to change.

- ❖ Working with households in communities, you will witness how the Nutrition Workshop, described on the next page, helps people to discover the link between what they eat and their household's levels of health and energy.
- As a facilitator, you will have to help them to quickly channel the excitement and energy generated by this discovery, into a process that can bring changes in how they use food.
- Then you will have to work with them until these changes become new habits to permanently replace the old habits – otherwise you will find that most of them fall back to their familiar ways very quickly.



Facilitator's Note:

To help the household achieve food security (availability, access and utilisation) the facilitator needs to:

- 1. Mobilise households into action: and
- 2. Help households to establish new habits.

Some methods of mobilisation for change and establishing new habits are discussed below to facilitate improved food utilisation towards improved food security.

Mobilising households for food security: The Nutrition Workshop

Mostly people can be mobilized into action if they see the need for change and if the change seems possible. Towards this end a person needs to get sufficiently uncomfortable with a present situation before they would make the required effort to, for instance, lose weight, stop smoking, change jobs, or relocate. Problem solving starts with knowing and acknowledging that there is a problem.

- In the development field, 'creating discomfort' is a recognized strategy to catapult people into action.
- ❖ From discomfort, a person needs to move to the hope that change is possible. The life stories of other people who had been in the same position and have been successful in changing their circumstances is one of the most powerful sources of hope.
- Further, people change more easily if they can clearly envision their 'desired future'. In development, various methodologies are used for 'vision-building'. The more concrete and personal this vision-building process can be, the more powerful its effect. Also, it is critically important that a person believes that s/he knows what to do, how to do it, and that it is within his/her power to make the necessary changes.
- ❖ In development, it is recognized that an 'enabling environment' is important. For home food production, this would include the physical means (e.g. access to water for production), the knowledge and know-how (e.g. through training and information sharing among friends and neighbours), and the moral support (e.g. from family, neighbours and leadership).

The **Nutrition Workshop** is an innovative mobilization tool, which creates discomfort (by leading people through a process of discovering how their diets fall short of their nutritional needs), and then gives people hope and knowledge on how to address

their shortfalls - and how to do so within their means.

This 'discovery phase' is followed by:

- Personal vision-building and planning (the Helicopter Planning) (This is discussed in detail in Chapter 2), and
- Enabling of production by addressing:
 - The physical limiting factors (water availability, climate, land availability, soil type, slope of land, pests and diseases, time and labour);
 - Training needs identified by the participating households; and
 - Moral support (especially through the Garden Learning Group processes) (See Chapter 2 for details).

Below is an example of a community workshop process that allows such an analysis. This process can be used for groups of community members, but can also be used at a household level.



The Nutrition Workshop:

- 1. The first step is to outline with the community members what their food habits, choices and their nutrition concerns are.
- 2. The next step is to analyse their nutrition and food habits by comparing it to the guidelines for good nutrition (e.g. Go Glow and Grow foods, on my plate guideline as well as ten guidelines discussed earlier.) This creates discomfort when there are significant deviations.
- 3. The third step is to come up with ideas how households can improve their situations through their gardening practices and their food preparation, preservation and storage processes.

The outcome of this process is a list, generated with the households, of additional crops, fruit and livestock production options to fill the nutrition gaps that were identified during the workshop. This helps the household to intensify and diversify their production and therefore their diets and ultimately their livelihood strategies.



Facilitation Tool 1: Nutrition Workshop – outline and process

Introduction to Nutrition

Each participant names something interesting that they know/ use or do regarding nutrition. Each person offers a different comment that is recorded on newsprint.

Group discussions on food that is eaten

Participants are divided into groups of 7-10 members. They discuss and record for report back in plenary (the larger group) the following topics:

- 1. What we eat every week
- 2. What we rarely eat
- 3. What we would like to eat but do not have access to and
- 4. What we feed the young children (ages 1-5yrs)
- 5. Special foods for sick and old people

Input from facilitators on food groups

Using the LIRAPA handouts (discussed above in section 3.3), facilitators go through the go foods, grow foods and glow foods; this is done through a short introduction and then by participants selecting food items they mentioned in their report backs that fit into those categories.

Here, depending on the information given by participants, discussion is held on traditional foods and their role and value in modern society.



Facilitator's Note:

Keep your input on the food groups simple and understandable. People are easily overwhelmed or bored by too much technical information, and then you will miss your objective...

REMEMBER: You are trying to empower people not make them feel more powerless.

Nutrition gap analysis and how this can be rectified by homestead food gardening practices

Participants analyze their selection of different food groups and look at what they eat regularly. They then offer suggestions of where they may be missing food types that may provide them with a more balanced diet.

A list is made of the food types people would like to try and grow to augment their present range of food types. Each individual puts their name against the food type they would like to include in their homestead systems.

Input on new things to try

Facilitators introduce, through discussions and sending around samples and or photographs, a few vegetables, herbs and fruits that could add variety to the diet of the participants.

Participants are then each given a chance to choose a small sample of seed for each type that they want to try and grow at home. Their names are recorded and their progress in terms of production from these seeds is then monitored.

A list of new crops participants would like to try is put together. Usually this will include a list for orders of fruit trees.

Evaluation and future learning topics

The workshop is closed with a brief evaluation and asking for suggestions from participants for further learning around nutrition.

Below is a case study for the Potshini Community in KZN, where this workshop was held. It gives an idea of the kinds of outcomes that are possible for this workshop.



Case study 1: Nutrition workshop held in Potshini

Food gap analysis

In a community called Potshini near Bergville in KwaZulu-Natal a learning group was formed, consisting of individuals interested in homestead food production. These individuals wanted to produce food for their families and produce some extra vegetables to sell. The group consisted of men and women of varying ages.

The learning group process was started with a focus on nutrition. The intention was to focus attention on two sets of needs at the same time:

- The soil, water, and diversity management needs of the gardens, and
- The food and nutrition needs of the learning group members and their households.

As a group, we analysed the food and eating habits of the group members, and identified gaps in nutrition and food types.

Right: A list of food given to children under 5 years of age, as provided by the members of the Potshini learning group. They realized in their nutritional gap analysis that children are lacking in fresh fruit, vegetables and meat.



Food given to children < 5 years

Mother's milk initially; then augmented with:

- Soft porridge; to which Rama margarine could be added
- Amasi (sour milk)
- Eggs (when available)
- Pumpkin, beans, potatoes
- -Juice (Sweet aid) and Umdoko (maize drink not fermented)

In a discussion held some mothers said they feed their children in the traditional way, but when they go to the clinic the doctors say the children have "Kwash" – meaning they have kwashiorkor.

- Children's diets were lacking in fresh vegetables and fruit.
- Children are rarely given meat to eat.

To do this analysis group members explored the following:

- What foods they eat often,
- What they rarely eat,
- What they would love to eat but do not have access to,
- What they feed their young children, and
- Special foods for sick and old people.

Input on healthy eating

As facilitators we also gave a short presentation of nutrition and what a balanced diet would consist of (food groups, dietary diversity and food variety).

Choosing crops to fill the nutrition gaps

We then developed a list of new and different food types they would like to introduce into their gardens through the learning group process.

The workshop participants' thought about crops that they could grow that could help them specifically to deal with the gaps in their family's nutrition. For example, if protein (grow food) was lacking, they tried to think of crops that could add protein to their diets.

Right: The list of foods that learning group members wanted to grow, or incorporate into their farming, in addition to the vegetables that they normally would grow, to provide a more balanced diet for their families.



Traditional Foods

- Isijabane: Mixture of maize meal and imifino (wild spinach) - Isijingi: Mixture of maize meal and - Intshuku: Type of herb used as imifino - Isinjela nkobe: Maize, sorghum, bean mixture - Ujege: Steamed bread - Isikwamba: Sorghum (amabhele); after sifting umgombothi (sorghum beer), use the dreas for porridge -Aqebelengwane: Maize cakes (pancake type) -Umbhaganga wamazambane: Maize meal porridge with potatoes -Umcaba wamabele: Sorghum porridge

CLeft:

The list of traditional foods that were discussed in the Potshini learning group process. Later in our process, we had a celebration, where participants



List of foods needed to provide a more balanced diet (especially for children < 5years).

This list was prepared by the participants:

-Amadumbe (taro)
-Indlubu (jugo beans)
-Amatongomane (peanuts)
-Sweet potatoes
-Carrots, beetroot, spinach
-Lettuce, tomatoes
-Garlic, onions
-Eggs
-Meat: beef and chicken
-Fruit: apples, oranges,
lemons, pears, grapes, plums,
peaches

cooked and shared these traditional foods.

Adding healthy traditional foods

We also explored traditional foods that are grown and consumed by people. We discussed the nutritional benefits of these traditional foods.

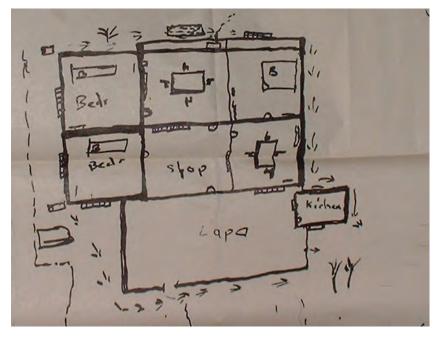
Adding their new crops to their Garden Plans

Once the nutritional gap analysis was done, an input was given of the vegetable required for a balanced nutritious diet. There was also a discussion of the ideal crop mix to yield a year round supply of vegetables and it was emphasised that crop mix also depends on personal preference. Based on this the workshop participants added the new crops they wanted to grow, into their visioning drawing.



Vegetable types required for a balanced nutritious diet:

- Leafy green vegetables for iron and other micro-nutrients (spinach, lettuce, pumpkin leaves, broccoli, green beans)
- Yellow vegetables for a supply of betacarotene and vitamin A (Carrot and pumpkin)
 - Legumes for protein (peas, beans groundnuts)
 - Fibrous vegetables and tubers (Cabbage, sweet potato, potato
 - Vegetables for flavour: (onions, garlic, chillies)
 - Other (tomato, green peppers)



Salphina Raphela's
Helicopter Plan. Notice the
arrows indicating where
the water flows during a
rainstorm. Also notice
where she has started to
draw where she wants to
plant her crops close to
the kitchen, which is
conveniently also the point
where the rainfall run-off
water collects.



Activity 7: Traditional crops and vegetables

Aim

To think about the traditional crops and foods still being cultivated and used in your home area. Think about the nutritional benefits of promoting these practices.

Instructions

Consider and answer the following questions.

- Make a list of traditional foods that you grew up with, or that people in your area still eat today. List the ingredients for each dish (or meal) and explain how these foods are prepared.
- ❖ Think about the nutritional advantages of using these foods. Mention at least three foods and their nutritional advantages. Write specifically about nutrition for children under 5 years of age.
- How would you go about re-introducing some of the traditional crops into an area or village where you are working?



Research result 4: Improvements on the Nutrition Workshop and workshop processes

In our work in Potshini, we were pleased with the way in which the Nutrition Workshop mobilised households into production. Also, the attendance and impact of the follow-up workshops on people's food gardening efforts were very encouraging. Two years later, two independent impact surveys in Potshini, confirmed the long-lasting effect of this approach on the level of gardening activity in households in this village. However, the surveys showed an interesting result: Although people were eating better and had more ready access to a variety of fresh food through their gardening efforts, much of the nutrition knowledge imparted at the original Nutrition Workshop had actually already been forgotten.

In general, people were not necessarily selecting the crops they were planting with specific nutrition gaps in mind.

We concluded that:

The Nutrition Workshop was very effective in mobilising people into production by 'creating discomfort' in people's minds about the deficiencies in their families' diets; but the once-off workshop was not enough to create a lasting change in how people were thinking about healthy diets.

On the production side, we MOBILISE and then go several steps further to establish new habits... on the nutrition side we MOBILISE, and then.. no further steps were taking place to establish new eating patterns.

So for the next round of workshops in Potshini we planned to change the learning programme to include something on food in every workshop, for instance:

- Introduce herbs and bring seedlings to plant
- Cook and taste alternative legumes, e.g. dahl, lentils, soyabeans, etc.
- Drying of vegetables demonstrate drying of potatoes, sweet potatoes, brinjals and green pepper.
- Cook and taste greens with new herbs added (parsley, spring onion, coriander, thyme)
- Drying fruit
- Making a preserve and or making jam
- Cook and taste a fortified porridge

In the Nutrition Workshop itself, we included an exercise in recognizing symptoms of malnutrition in children, and what people in the area normally do when they find signs of malnutrition.



Facilitation Tool 2: Monitoring nutrition at a household level

Aim

To use a food intake monitoring chart as the basis for a discussion about family nutrition and interventions that can improve the situation.

Instructions

Encouraging families to engage with the idea of improving household nutrition usually takes more than a presentation on food groups! In this activity you will work closely with a few different households to help them keep track of the weekly food intake for all members of the family in order to analyze where their gaps are. In a later activity, you can work with these same volunteers again to develop a planting plan that addresses those nutritional gaps.

- Choose a volunteer or volunteers who are willing to keep track of their weekly diet in order to analyze household nutrition. The idea will be to analyze their diet initially for one full week and then alter again, once the volunteers have implemented their desired changes.
- 2. Familiarize your volunteers with the "What did we eat today" chart. (Table 5) OR make up your own from the example shown below. Assist them in estimating cups and spoonfuls. If the spaces are too small for them to write in, help them to set up each day on a separate page of an exercise book. For example, page one might look like this:

MONDAY

	Adults	Sick/ old/ pregnant	Children under 5
GO (cereal)	Mama-1 cup jungle oats Baba-10 piece white bread Mama-2 cups rice Baba-2 cups phuthu (Maizemeal porridge)	Gogo-1 cup umdogo (Fermented maize meal drink) Gogo-2 cups phuthu	Thandi-1/2 cup umdogo Sibu-1 amagwinya (small fried breads/cakes)
GLOW	Mama-1 cup spinach Mama-1/4 cup carrot Baba-3 spoons beetroot		Sibu-2 peaches Sibu-
GROW	Mama-1 piece chicken Baba-2 cups beans	Gogo-1 cup amasi (sour , thickened milk)	Sibu-3 pieces cheese Sibu-1 piece polony Thandi-3 bottles milk
Fats/ Oils	Baba-3 spoons oil in beans		Sibu-2 spoons Rama
Sugar	Mama-3 spoons sugar Baba-8 spoons sugar Baba-2L coke	Gogo-6 spoons sugar	Thandi-1/2 cup juice Sibu-1 sucker

Note: Mama = mother; Baba = father; Gogo = granny; Thandi & Sibu = children.

- 3. At the end of the week, sit with the volunteers to examine their charts. Ask the following questions:
 - -Which people in the household gets the most go/glow/grow food?
 - -Which category gets the least go/glow/grow food?
 - -Do you see anything you would like to change/improve?

Make a plan with the volunteers around what they are going to change and how, taking care to be clear between you how this is going to improve the nutritional situation.

(N.B. Don't lose these charts, because you'll use them again for the planting activity).

3.5 Growing a healthy diet in an intensive home food garden

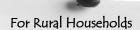
Households can obtain their food supplies either from their own food production, or from food purchases, but more often it is through a combination of both. The following factors can help to assure that communities have enough of a variety of foods at the household level: access to sufficient water, fertile land, seeds, planting materials, agricultural implementation, extension advice, credit, good storage and a sufficient number of family members who are healthy and strong enough to work on the farm and undertake off-farm employment.

Many rural communities however do not have year-round access to adequate amounts of fresh or processed staple foods, and their access to fresh vegetables and fruit tends to be seasonal at best. Frequently, households also sell too much of the food they have produced, either because they need cash, or because the necessary facilities for storing or preserving food for longer periods, are poorly developed.

Households can use several strategies to help ensure continuous access to a variety of nutritious foods. These include the year-round production of a variety of home garden foods (provided some water is available) in an **intensive homestead food garden**, and the preservation, processing and adequate storage of foods.

Why intensive?

An intensive garden (planting lots of crops in a small space, and growing them in such a way that they produce high yields) provides more food for the effort put in. We want to create a 'healthy little forest' rather than 'a few struggling plants in a desert'. We put all our effort into a small area, and look after this small area very well, by making the soil very fertile and protecting it well against pests and diseases.



The best way to improve food security is to have an intensive homestead food garden that provides some food all year round.

Why year-round?

The family needs good fresh food the whole year round, therefore the garden production should provide the necessary quantities and variety of foods the whole year round.

My child needs a variety of foods: Vegetables and fruit to eat with foods rich in protein. I can grow these crops to add to our daily maize porridge staples.

Young mother in Gogela, Eastern Cape. Photo: E Kruger, 2008.





Research Result 5: Smallholder Agriculture in South Africa

Research shows that small-scale producers are often highly productive and make a valuable contribution to the economy. Some rural households can secure more than half their total livelihood from the land, and others regularly sell surpluses to earn sizeable cash incomes. Natural resource harvesting from communally held resources also makes a significant contribution. Hard evidence indicates the real potential for a revival of small-scale agriculture.

Delali Dovie, of Wits University, for example, recently found that maize yields in Thorndale village in Bushbuckridge averaged 4,3 tons a hectare. The net value of cropping for each household was more than R4,000 a year, from an average of 1,86 ha under crops. These are comparable to yields and returns from commercial farms. More than 22% of the harvest was sold for cash. The value of crops constituted about 15% of the total value of household livelihood activities, with livestock contributing 22% and woodland resources another 19%. Land-based livelihoods thus made up about 56% of total livelihood value.

Smallholder agriculture is labour-intensive, uses few external inputs and is potentially productive. It does, however, require an enabling economic environment (credit, inputs supply, extension services, markets) that is largely absent at present, as in the past. Government's land reform and rural development policies have failed to address this challenge to date.

(Cousins, B. 2005)

Planning for a Green Garden Year-Round

Planning a home garden to provide a continuous supply of foods all year round is a process that requires managerial skills, and knowledge of:

- The types of crops that grow well in the area;
- The appropriate planting dates of different crops to ensure the best yield;
- The length of the growing periods of different types of crops;

- How long a crop can supply food to the household before it requires replacement; and
- ❖ The crops that are more drought/frost/moisture tolerant (depending on season and area).

This knowledge allows the farmer to select the types of crops to grow and when, where and in which mixtures to grow them. With this knowledge in mind, a home gardener can design planting patterns that provide for adequate quantities of fresh or preserved foods all year round.

In this section, we will give some ideas of the kinds of decisions that need to be made. The actual growing of crops will be explored in later chapters of this resource pack.

Fruit Trees

Some fruit trees provide fruit throughout the year, others only during specific seasons. It's important to select fruit trees that produce fruit at different times of the year, and some that bear fruit all year if possible (like bananas). Some fruit trees (mangos, citrus, avocado) take many years before they start to bear fruit, but when they do, they will bear for a long time without needing replacement.

Green Leafy and Yellow Vegetables

Many green leafy vegetables can be harvested many times before replanting. Many are ready for harvest as soon as 3-4 weeks after planting. Some, like amaranth (imbuya) and rape or kale grow quickly, but can only be harvested 2-4 times before replanting. If possible, plant a mixture of fast and slow-maturing leafy vegetables. The slow-maturing varieties provide a household with vegetables for a long time, so household members save labour in the long run.

Legumes

Select legumes according to the season and what grows well in the area. Legumes such as cow pea, groundnut, and pole- or broad bean are often intercropped with field crops such as maize to assist with nitrogen-fixing in the soil. If there is access to sufficient water, these legumes can flourish in a home garden. Some early-maturing varieties of green beans, for example, can be planted at the onset of the rains, and then a second crop can be planted later in the summer.

Most home gardens can be improved to do a better job of meeting the household food needs. Improving the home garden often means improving upon its structure and function. The following questions need to be considered by the household:

- How much food and income is the home garden producing?
- How much food and income would the home gardener like the garden to produce?
- How is the home garden contributing to the nutritional needs of the family?
- What additional crops would the household members like to produce?

- What types of changes need to be made?
- What inputs are required for the desired improvements?

Vitamin A is very important for young children. It prevents infection and keeps their skin, eyes and lungs healthy.

Iron is also important, as it keeps their blood strong. It allows their muscles and brains to work properly.

Vitamin C helps to absorb the iron. It fights infections and helps children to feel strong and happy.



A young community facilitator in Potshini, KZN. Photo: E Kruger, 2008.

Below is a list of foods within the different food groups to help you think through some crops that can be grown at homestead level. These crops contain key nutrients and can provide food variety within each food group:

- Go (Energy) foods: maize, coconut, rice sorghum, wheat, millet, sweet potato, 'amadumbe' (taro), banana, avocado, bambara groundnut, peanut
- Go foods high in fats and oils: avocado, bambara groundnut, jugo beans, soybeans,
- Grow (Building) foods: bambara groundnut, jugo beans, beans, peas, cowpeas, peanut (groundnut), pigeon pea, soybeans, lentils, melon or pumpkin seeds
- Glow (Vegetables and fruit) foods, high in vitamin C: cabbage, sweet potato leaves and tuber, tomatoes, sweet peppers citrus (orange, naartjies, lemons), guava, mango, papaya, peaches, plums, apples, pears, pineapple, passion fruit (granadilla), tree tomato
- Glow (Vegetables and fruit) foods, high in vitamin A: amaranth or 'imifino', other wild leafy vegetables, carrots, sweet potato leaves and tubers (especially orange fleshed), maize, pumpkin, rape, kale, mango, papaya
- ❖ Foods high in iron: beans, peas, some green leafy vegetables, e.g. spinach or swiss chard. Absorption of iron from these foods is increased by combining them with Vitamin C rich foods.



Facilitation Tool 3: Growing a larger variety of food in the home garden

This activity assists farmers in intensifying their garden (growing more and more efficiently) according to the gaps in household nutrition. It can follow on the nutrition monitoring activity ("what do we eat" charts) presented earlier.

Instructions

- 1. Review the "What do we eat" charts with each volunteer. Prompt discussion with the following questions:
- ❖ What is missing in the diets of adults/old/sick/pregnant/children under 5?
- What can you do to improve household nutrition?
- What can you grow in your garden to improve household nutrition?
- 2. Assist each volunteer to fill out the "What we plan to plant each week" chart.

Table 7: What we plan to plant each week

Example: plant some carrots every three weeks to eat carrots all year. Choose different varieties to suit the season.

		Date:							
		Week:	1	2	3	4	5	6	7
(starch)	maize, potato, sweet potato, amadumbe,	Туре							
	ootato, sweet amadumbe,								
GO foods	e, potat	Type							
GO	maiz	Type							
(protein)	ý ::	Type							
		Туре							
GROW foods		Type							
GRO		Type							
	orange, hes, tree	Type	carrot			carrot			carrot
d fruit)	Vit A veet potato pkin, en pepper tijies, peac	Туре							
(vegetables and	Vit C, Vit A carrots, orange sweet potato, orange pumpkin, tomato,green pepper fruit, oranges, naartjies, peaches, tree tomatoes, plums	Туре							
		Type							
GLOW foods (v Vitamins and minerals cabbage, onions, green beans, lettuce, beetroot	rmins and minerals cabbage, onions, n beans, lettuce, beetroot	Type							
		Type							
		Туре							
	Vita gree	Туре							

3.6 Stretching the benefits: Food

Preservation, Storage and Preparation

Food Preservation and Storage

Excess seasonal produce can be preserved and stored for later use. We will look at preservation and storage options in Chapter 4 – Diversifying production in homestead farming.

Food Preparation

When preparing food, there are a few things to consider to make sure we do not lose the nutrients in the food. Below is a list with some suggestions:

- Buy or pick vegetables on the day you use them.
- Store vegetables and fruit in a cool, dry place.
- Clean and cut vegetables immediately before cooking. Most of the nutrients are in the outside parts of the vegetables and fruit. Try not to peel them. Cut the food into big pieces if possible – small pieces lose more vitamins.
- Cook vegetables in just a little water or in a stew, until just tender. Don't cook too long, or in a lot of water.
- Other ways to preserve nutrients are frying very quickly over high heat or in a little oil.
- Eat the food as soon after cooking as possible.

Some recipes for nutritious dishes



Here are a few fun ideas of nutritious dishes that can be tried out! (FAO, 2001)

Mashed Pumpkin with peanut butter

INGREDIENTS: 1 medium pumpkin or bitter melon, peeled, seeded and cut into cubes

- 3 cups maize meal
- $\frac{1}{4}$ cup peanuts or 3 tablespoons of peanut butter
- $\frac{1}{2}$ teaspoon of iodized salt

Sugar to taste (for bitter melon)

PREPARATION:

- 1. Boil pumpkin in salted water until soft
- 2. Mash until smooth
- 3. Add maize meal and cook for 30 minutes, stirring occasionally
- 4. Add peanuts or peanut butter.

Green Leaves with Peanut Sauce

INGREDIENTS:

750~g (3 cups) of leaves (amaranth, black jack, wild lettuce, kale, cow pea, taro, pumpkin, bean or any other) washed and cut

 $\frac{1}{2}$ cups of peanuts or 2 tablespoons of peanut butter

Medium onion

Large tomato

Vegetable oil

Iodized salt to taste

PREPARATION:

- 1. Sort the leaves and steam them in a pot until tender
- 2. Roast peanuts and grind to a paste
- 3. Cook onion and tomato in vegetable oil
- 4. Add steamed leaves and more water. Add salt to taste
- 5. Serve with peanut paste.



Nutritious snacks

Small and school going children need to eat some snacks in between their main meals. It is good for them to eat little bits often, rather than large meals. Nutrient rich snacks should be preferred.

Peanut sweets

INGREDIENTS:

- 1 cup sugar
- 1 cup water
- 1 cup shelled and roasted peanuts

Vegetable oil

PREPARATION:

- 1. Dissolve the sugar in a pan of water
- 2. Heat the pan and stir until a syrup forms. When the syrup is golden brown, add the peanuts and mix well.
- 3. Pour the firm mixture on to a large oiled dish, spreading it into a 1-1.5 cm thick layer.
- 4. Let the mixture set, but before it gets hard, cut it into small squares.

Banana scones

INGREDIENTS:

- 2 bananas
- ½ cup milk
- 30 g butter (2 tablespoons)
- 2 cups self raising flour

Salt

PREPARATION:

- 1. Mash bananas
- 2. Add milk and mix
- 3. In a separate bowl, cut butter into flour and salt
- 4. Add bananas and milk mixture to flour and butter mixture. Mix well
- 5. Roll out dough. Use a glass or a jar to cut it into round pieces.
- 6. Bake in a hot oven (230°C or 450°F) for about 15 minutes.



Steamed bean flour cakes

INGREDIENTS:

Bean flour

Water

Pepper (ground)

Onion (ground)

Salt (optional)

Banana leaves

Dried fish or boiled eggs (optional)

PREPARATION

- 1. Mix the bean flour with water to form a paste (a little cassava or maize flour (maizena) can be added to bind the mixture).
- 2. Add pepper, onion and salt (and other ingredients, if desired) to the paste.
- 3. Wrap the paste in banana leaves and steam

Sweet potato pastry

INGREDIENTS:

Sweet potato (preferably yellow fleshed) grated

Sugar

Some wheat flour

Pineapple juice or coconut milk (optional)

PREPARATION

- 1. Mix ingredients together
- 2. Bake as you would other biscuits.

3.7 References and Additional Reading

African Development Bank, 2002. Africa: <u>Progress towards the Millennium Development Goals</u>. Statistics Division, Development Research Department, African Development Bank.

Behrman and Rosenzweig in Webb P, Roger N. 2003. <u>Addressing the "in" in Food</u> Insecurity. USAID Office of Food for Peace. Occasional Paper 1. February 2003.

Chopra, M. 2004. Food security, rural development and health equity in Southern Africa. Regional Network for Equity in Health in Southern Africa. EQUINET Discussion Paper Number 22.

CINDI Nutrition Working Group. 2005. Children in Distress. www.cindi.org.za

Cousins, B. June 2005. <u>There is a Future for South Africa's Small Farmers.</u> Business Day, Johannesburg, on 14 June 2005. Programme for Land and Agrarian Studies (Plaas), School of Government, University of the Western Cape.

De Onis, M. Frongillo, E.A. Blossner, M. 2000. <u>Is malnutrition declining? An analysis of changes in levels of child malnutrition since 1980.</u> Bulletin of the World Health Organization, 2000, 78: 1222–1233. Special Theme – Child Mortality.

Department of Health. 2005. National Food Consumption Survey. (NFCS).

Department of Health; Nutrition Directorate KwaZulu-Natal. 2005. Implementation guidelines for nutrition interventions at health facilities to manage and prevent malnutrition

DIFD. 2002. <u>Eliminating Hunger. Strategies for Achieving the Millenium Development Goal on Humger.</u>

Empowerment for Food Security Programme, KZN. <u>Baseline study and report</u>. Compiled by E. Kruger. 2008 (LIMA).

FAO (Food and Agriculture Organisation). May 2007. <u>Nutrition and Consumer Protection</u> Division – poster printed May 2007.

FAO, 2004. Family Nutrition Guide. By Ann Burgess and Peter Glasauer

FAO, 2006. The State of Food Insecurity in the World. <u>Eradicating world hunger – taking stock ten years after the World Food Summit.</u> Rome, Italy 4.

FAO. 2001. Improving Nutrition Through Home Gardening.

Ferreira, F. 2008 Personal communication. Human Ecology Department, UNISA.

From: "Improving Nutrition through home gardening. A training package for preparing field workers in Africa". FAO, 2001.

Hendriks, SL and Maunder E (2006). <u>Reflecting on the FIVIMS/ZA pilot and food insecurity and vulnerability: Modeling approaches to advise on future directions.</u> Paper prepared for WFP. African Centre for Food Security, University of KwaZulu-Natal.

IFAD, 2006. Corporate strategy Unit. <u>Press release prepared by the Communications and Public Affairs Unit</u>. Rome, Italy.

Kruger, E. 2009. <u>Baseline Study for the Formulation of a Programme for Empowerment for Food Security in KwaZUlu-Natal, South Africa.</u> KZN Department of Agriculture and Environmental Affairs. FICA Press (Flander Internaltional Cooperation Agency)

LIRAPA (Livelihoods improvement through Agriculture programme, Care, Lesotho): <u>How to get the best from our garden.</u> A manual for farmers and their service providers. 2008. Ministry of Agriculture and Food Security, Lesotho, Ed. E Kruger.

Misselhorn, M. 2006. Unpublished MSc Dissertation. <u>Dietetics and Human nutrition. African Centre for Food Security</u>. University of KwaZulu-Natal.

Professor James Blignaut, University of Pretoria. Personal communication, March 2009.

Richter, L.M. and Griesel, R.D. 1994. <u>Meeting the Needs of Young Children.</u> For The Carnegie Task Force.

TAC (Treatment Action Campaign. 2007. <u>HIV in our lives. A Book of Information Sheets for People Living with HIV, Support Groups and Clinics.</u>

Webb P, Roger N. 2003. <u>Addressing the "in" in Food Insecurity.</u> USAID Office of Food for Peace. Occasional Paper 1. February 2003.

Zere, E.; McIntyre, D. 2003. Inequities in under-five child malnutrition in South Africa. D. Int J Equity Health. 2003; 2: 7.

Additional Reading:

Home food gardening for nutrition

❖ Burgess A., Maina G., Harris P. & Harris S. 1998. <u>How to grow a balanced diet: a handbook for community workers</u>. London, VSO Books.

'Intensive home food gardening'

- ❖ IIRR. 1991. <u>The biointensive approach to small-scale household food production</u>. Silang, Cavite, the Philippines. International Institute for Rural Reconstruction.
- ❖ Jeavons, J. 1995. <u>How to grow more vegetables than you ever thought possible on less land than you can imagine.</u> 5th ed. Published by Ecology Action of the Mid-Peninsula. Berkeley, California, Ten Speed Press.

Nutrition education

- ❖ FAO. 1997. <u>Agriculture food and nutrition for Africa: a resource book for teachers of agriculture.</u> Rome.
- ❖ FAO/ILSI. 1997. <u>Preventing micronutrient malnutrition: a guide to food-based approaches: a manual for policy makers and programme planners.</u> Washington, DC, International Life Sciences Institute (ILSI).

Mobilisation

- ❖ FAO. 1994. Social <u>communication in nutrition: a methodology for intervention</u>, by M. Andrien. Rome. Reprinted 1998.
- www.tearfund.org/tilz: This website has many useful resources; books, manuals newsletter and training material for health and development workers worldwide. the PILLARS Guides are designed for facilitators
- www.leisa.info : The Centre for Information on Low External Input and Sustainable Agriculture provides information about successes in sustainable smallholder farming
- www.fao.org/sd/seaga : Socio-Economic and gender analysis programme have produced various guides for facilitators in working with rural households and resources

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Homestead Food Gardeners'

Resource Pack (Handouts) -

Chapter 3:

Living and eating well

Resource Material for Homestead Food Gardeners

Chapter 3: Handouts (English)

Handout 1 Living and eating well

Handout 2 The 10 food-based dietary guidelines

Handout 3 What did we eat today?

Handout 4 Planting Plan

1. Living and Eating Well



What is nutrition?

We all need to eat. Our bodies need food to stay alive, for energy and to grow and recover from illness. The food that we eat is used by our bodies in many different ways. Different parts of the food are used for different things like giving us energy and helping us to get better.

We need to eat lots of different and healthy foods so that our bodies get all the things that they need. If we eat well we have a better chance of feeling good and living a better life.



It is best for babies to drink breast milk only. Babies get all the things that their bodies need from their mothers' milk.

Children need to eat vegetables and fruit to keep them healthy.

They also need to eat foods that will help them to grow like egg, cheese, meat, peanut butter, beans, lentils and soya. Small children need to eat five times a day.

Adults need to eat lots of different kinds of food to keep their bodies functioning well. It is most important to do this if you are sick or if you are pregnant.

How can we eat well to be in Good Health?

To eat well means to eat lots of different kinds of food so that our bodies get all the good things that they need. This does not mean that you need to buy expensive food. By thinking carefully about what you eat, and what you prepare for your family, and choosing food well you can eat in a healthy affordable way.

There are three main types of food:

Go foods, grow foods and glow foods.

You should eat things from each of these types of food every day. You should also drink about eight glasses of water every day.

Good Energy/ Go Foods:

Sweet potato

Boiled, baked or mashed potato

Brown or white rice

Sorghum

Macaroni, spaghetti or other noodles







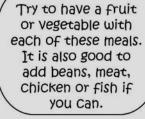
Dried beans and peas 🐾

Oatmeal

Cereal

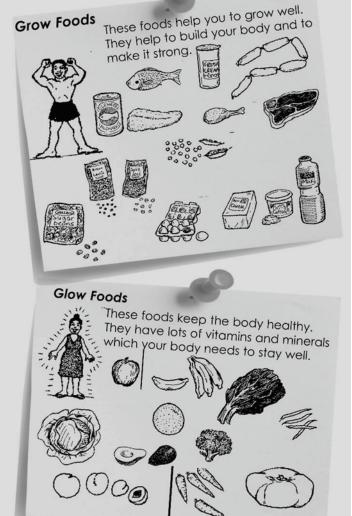
Bananas

Avocados











Food safety tip

Always wash your hands with soap and water before you touch food, and after using the toilet. Wash both sides of your hands for a long time – count to 15 while you wash!

Cover any wounds or sores that you have when you are preparing food.

Good grow foods

These are the foods that contain a lot of protein. These foods help to maintain your body and muscles. They also help to prevent infections. It is important to eat some grow foods every day, especially if you are ill. Children need extra protein because they are growing. So do pregnant women.

Below is a list of some grow foods:

Beans

peas

soyabeans

groundnuts

chicken

chicken livers

fish

meat

eggs

cheese

maas (sour milk)

peanut-butter

nuts

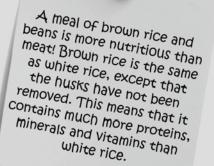
sunflower seeds



Eggs are especially good for Children and pregnant women, as they contain protein, vitamins, fat and Calcium.

Children can also eat beans or peas every day.

It is good for Children to eat Small meals more often.



Good glow foods

The foods that help to fight infections are glow foods. These are foods with lots of vitamins and minerals. You need to eat lots of different kinds of glow foods as they all have different good things in them.

Below is a list of good glow foods:

oranges grapefruit

uit C

bananas

grapes

granadilla

yellow peaches

apricots

apples

pears

lemons

pineapple spinach

tomatoes

potatoes

broccoli

pumpkin leaves

carrots

green beans

peas

mealies

beetroot

avocado

samp

moroho

rapa





Children.
Children and pregnant women should eat some of these foods every day.

Selection and Preparation of Food

Drink lots of water

You need at least 8 glasses a day. You may not think that you need much water. But you can try and experiment on yourself. For three days drink 8 glasses of water. This does not include cups of tea and coffee. After those



three days, how do you feel? Do you have more energy and do you feel aood?

Food Safety Tip:
Water from a tap is safe. If you get your water from a river or a well you must boil the water or add 1 teaspoon of bleach to every 25 litres of water before you drink it. Store your water in a clean covered container.

Eat each day:

Grow foods – three of the following:

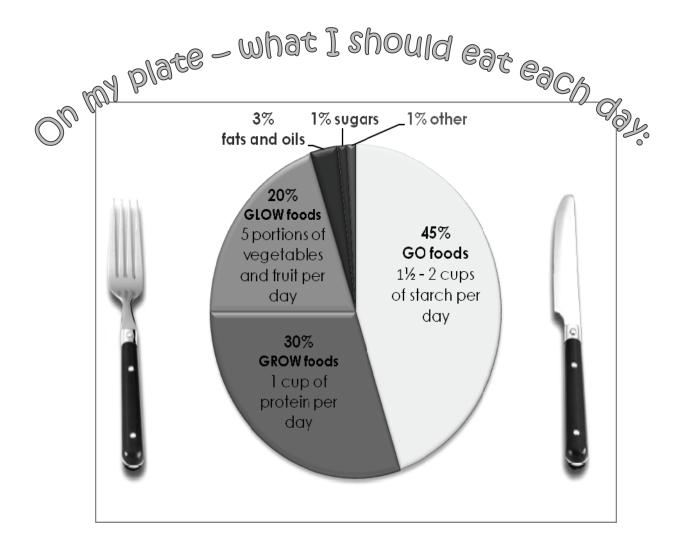
One cup of beans or peas (plus one tablespoon of uncooked sunflower oil); two eggs; a large piece of meat, chicken or fish; one tablespoon of sunflower seeds; nuts such as almonds or brazil nuts; one cup of milk or maas (sour milk); a big piece of cheese.

Glow foods

Three whole fruits and one and a half cups of vegetables. Eat more vegetables if you do not have fruit.

Go foods – any or all of the following:

Bread; half a cup of pasta, rice (preferably brown rice), potato, maize; a cup of cereal such as oats or sorghum porridge or maize meal.



Some common traditional foods

ngekoe	beans and sorghum/mabele leaves	
likhetso	unpeeled pumpkin portions with seeds	
lepu	young pumpkins with pumpkin leaves	
lithotsi	roast, cooked pumpkin seeds	
lehala	lesheleshele - maize or sorghum porridge made with milk	
Legebekoana, ujeqe	steamed wheat bread	
Motoho	fermented maize/sorghum porridge	
Likhobe, isinjela nkobe	maize/maize with peas/maize with beans	
setampo tša koro	whole wheat	
mabele a tša batsoeng	half opened sorghum, ground and cooked to make buns	

Make sure you keep the goodness in ...

Fresh fruit and vegetables have lots of vitamins and minerals in them. But these vitamins and minerals can disappear very quickly if you are not careful about how the food is prepared and cooked. Here are some tips to help you keep the goodness in:

- ❖ Eat raw fruit and vegetables whenever it is possible.
- ❖ Eat as much of the fruit or vegetable as possible including the skin.
- Most of the vitamins are in the outside parts of the fruit and vegetables. Try not to peel.
- ❖ Try to buy and eat fruit and vegetables as fresh as possible.
- ❖ Cook the vegetables in big pieces. Small pieces will lose more vitamins.
- It is best to steam vegetables.
- ❖ Cook vegetables very slowly over a low heat until they are just cooked.
- ❖ Use the vegetable cooking water to cook other foods in or to make soup or gravy.
- ◆ Eat the vegetables as soon as they are cooked.

Food safety tip

You must eat meat on the day that you buy it if you cannot keep it in a fridge. You can only keep meat in the fridge for two days. After two days it must be frozen.

Cook all types of meat well. Don't ever eat raw eggs, meat, chicken or fish.

Don't use eggs that are cracked.

Herbs, spices and medicinal plants

- Spices, especially sweet spices like cinnamon, can help to make food taste better. You can buy cinnamon sticks which you add to food while it is cooking.
- Eating parsley after you have eaten will help to freshen your mouth and it is good for you. It's easy to grow at home too.
- Ginger helps if you are feeling nauseous and for colds. You can make a ginger tea.
- Garlic helps to fight infections. Make a tea or add garlic while you are cooking.
- Thyme helps with digestion. You can add thyme leaves to food.
- Other good herbs to eat are sweet basil, coriander, oregano and fennel. They are all easy to grow and can be added to your food.



Often when you feel sick the last thing on your mind is eating, but it is very important to eat well when you are sick. Good eating will help you to:

- Keep up your body weight and strength.
- Fight the infection.
- ❖ Take in enough vitamins and minerals to get better.

If you do not eat well when you are sick, it will take longer for you to get better.

What happens to your body when you get sick?

When your body is trying to fight off an illness it has to work harder than usual. This means that you need to take in more good food than usual for your body to have enough energy, vitamins and minerals to cope.



When you feel sick though, you may:

- feel too tired to prepare food and to eat,
- find that the medicine you are taking might make food taste strange.
- have nausea, vomiting or diarrhoea which make it difficult to eat.
- have sores in your mouth which make it difficult to eat.

Even though it is difficult, you should try to eat well when you are sick.

The best way to eat well when you are sick is to:

- Have small meals often.
- Make sure you get extra energy.

Fever and night sweats

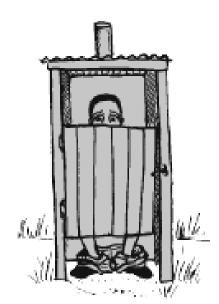
Fever is the natural way your body will fight an infection. Fevers are actually good because the heat destroys the germs. But you need to be careful that the fever does not become too high, as this can cause damage as well. Make sure that you drink lots of water. Eat lots of glow foods and grow foods to get back your strength.

Stomach problems

A very common kind of stomach problem is diarrhoea. Diarrhoea is very dangerous because our bodies lose a lot of the water we need. It is especially dangerous for babies, children and people who are sick.

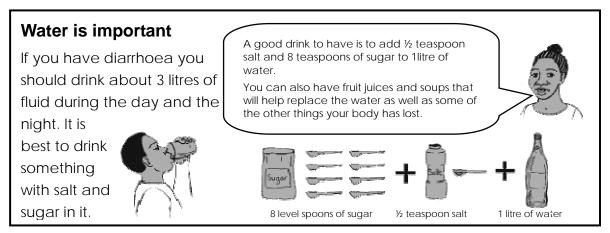
What causes diarrhoea?

- Drinking dirty water
- Not washing hands well before eating and after using the toilet
- Not washing fruit and vegetables and cooking utensils well.
- Some medicines
- Infections in the stomach
- Stress
- Food that is rotten or bad
- Some types of food cause stomach problems in people whose bodies cannot cope with that food.



Why is it important to eat well if you have diarrhoea?

Diarrhoea can cause weight loss. The body loses too much water and salt and becomes weak. It is very important to drink a lot of fluids when you have diarrhoea. Eat more after you have diarrhoea. A baby with diarrhoea should be fed often.



Good foods for diarrhoea

- ❖ Eat soft, mashed, moist foods like soft fruit and vegetables, porridge and stews.
- ❖ Peel and cook vegetables and fruit.
- Eat warm food.
- Eat small meals often throughout the day.
- Drink diluted fruit juice
- Soups
- Unripe Banana, Mangoes, Orange, Grapefruit
- Potato, Pumpkin, Tomato, Carrots
- White rice
- Mealie meal
- White bread
- Pasta (macaroni)

Some foods can make diarrhoea worse. Avoid cereals like bran flakes, raw vegetables, fruit and vegetables with the skin on, spicy foods with chillies or curry powder, dried fruit or fruits with small seeds like berries, tea and coffee. You can also try and have less milk, milk powder and milk drinks and see if it helps.



Nausea and vomiting

- If the medicine you are taking causes nausea try to take it at a time when it will not affect meals.
- ❖ Eat small amounts of food often throughout the day. Even if you eat a small amount of food it might help to settle your stomach.
- Try eating cold food.



- Some people find fried foods, fatty food and cheese difficult to digest. Try cutting out one food at a time and seeing if it makes a difference.
- Don't eat beans. Eat only small amounts of onions, green peppers, broccoli, and cauliflower.
- Only use a small amount of margarine or oil when you are cooking.
- Try dry foods like toast, biscuits or dry cereals.
- Avoid food that has a strong smell. Sometimes the smell of food can make you feel sick.

Good food to help with nausea and vomiting

Nausea:

Lemon juice in hot water or soda water Rooibos tea with sugar and lemon

Puddings and custards

Rice or pasta

Boiled eggs

Diluted fruit juice

Bananas

Boiled chicken

Baked or mashed

potatoes

Toast

Well cooked vegetables

Vomiting:

Water

Soups

Soft foods like bananas, pumpkin and avocado





Mouth problems

Sometimes we don't eat well because of sores in our mouths, or because food tastes different or strange. You might not enjoy your meals as much as you used to, or find it too painful to eat. If this happens you don't eat enough to give you energy and to help fight infection.

What can I do about it?

Taste change



Cinnamon Tea

Make a tea with ¼ teaspoon of powdered (ground) cinnamon in a cup of boiling water.

Garlic Tea

Make a tea with 2 chopped cloves of garlic in a cup of boiling water. Use this to rinse your mouth.

Lemon Tea

Add the juice of a lemon to ½ cup of boiling water. You can add sugar, and try to drink it when it is very hot.

- ❖ Try rinsing your mouth with ½ tsp bicarbonate of soda dissolved in a cup of warm water before you eat, or with lemon added to water.
- Food should be warm, not too hot or too cold.
- ❖ Eat foods that you like. Experiment with new foods and spices until you find foods that you like.
- ❖ If red meat tastes bitter, try chicken, fish and eggs.



Dry mouth

- Rinse your mouth with salted warm water, or lemon water.
- Drink lots of water between meals to keep your mouth moist.
- Don't eat dry, rough and crumbly foods. Eat soft, mashed, moist foods like avocados, pumpkin, bananas, soups, minced food or food with sauces and gravies.
- Don't eat sugar. It will make your mouth drier.

Mouth sores

- Eat soft, mashed, moist foods like avocados, pumpkin, bananas, soups, minced food or food with sauces and gravies.
- Use a straw to drink liquids, and a cup to drink porridge and soups.
- Drink soups, vegetable and fruit juice.



Good food for sore mouths

- Try soft, smooth foods like soup and mashed potatoes.
- Minced meat
- Pasta dishes like macaroni and cheese
- Soups
- Custard



Foods to avoid

- Spicy food like chillies and curries.
- Sour food like tomatoes, oranges and pineapple
- Food and drinks that is too hot or too cold
- Foods that need to be chewed a lot like raw vegetables, or food that sticks like peanut butter.
- If you have thrush cut down on sweet food, sugar and bread.

Eating well to gain weight

Why do we lose weight?

There are many reasons why someone can lose weight. If you do not eat enough food you will lose weight. Sometimes people don't really feel like eating. We say that they have a poor appetite. This can happen if you are very tired or you feel depressed or sick. It can also happen if eating is difficult because of things like nausea or sores in the mouth.



You might also lose weight because you are sick with infections, diarrhoea, nausea or vomiting. When you are sick your body does not take in the goodness that it needs from food very well. At the same time, it needs more of this goodness to get well again.

Tips for gaining weight and increasing appetite

- Try to eat 5 or 6 small meals every day even if you don't feel like eating.
- Try lots of different foods until you find those that you like.
- Exercise will improve your appetite. Try to have a short walk before a meal.
- Don't eat lots of fried food or fatty meats.
- Add flavour to food to make it look and taste interesting. Try things like lemon juice, and sweet spices like cinnamon. Or add herbs like parsley, thyme, oregano and sweet basil.
- Try rinsing your mouth out with bicarbonate of soda or lemon juice in water before you eat to help the food taste better.

Examples of good foods for weight gain

- Eat more samp, rice, brown bread, oats, potatoes and bananas.
- Eat chicken, fish, eggs, meat, beans and soya as often as possible.
- Eat snacks like fruit, carrots, maas and peanut butter or jam sandwiches between meals.



The most important ways to gain weight are:

- Stop diarrhoea
- Treat any infections you might have
- Make sure that you are eating enough of the right things

How to improve what we eat at home

Here are some ideas to add 'weight gain food' to things you eat at home.

- Add sugar or jam to your porridge
- Put a teaspoon of margarine into your porridge.
- Cook beans and mix in with rice. Add a teaspoon of margarine as well.
- Add margarine or oil to potatoes.
- Add meat or chicken whenever you can. Even a small amount in soups and gravies is good.
- Eat beans with pap, sorghum and samp.
- Add a teaspoon of dry milk powder to any porridge, soup or stew.

Living well by growing your own food

One of the ways to make sure you always have plenty of cheap, fresh food available at home is to grow your own vegetables.





What can I grow?

You can grow nearly all kinds of vegetables and herbs.

These vegetables and herbs are all good for you and are easy to grow:

carrots thyme
cabbage sweet basil
spinach fennel
onions coriander
garlic beetroot
potatoes cauliflower

tomatoes kale broccoli rape

pumpkin mustard greens

mealies turnips beans leaks parsley peas



Remember that you should be eating some of these foods every day. It is easier to make sure you do this if you can pick the vegetables from your garden, rather than buy them from the shops!

If you have enough space you can also plant some fruit trees.

2. The Ten Food based Dietary Guidelines

1. Enjoy a variety of foods

- Eat different foods from different food groups
- Give attention to methods of preparation
- Address low micronutrient and low energy intake
- Address chronic diseases of lifestyle.

Eat 20 - 30 different foods in a week

2. Be active

❖ Do 30 minutes of moderate to vigorous activity on most days. This protects against chronic diseases such as hypertension, diabetes, heart disease and cancer.

Do 30 minutes of exercise on most days

3. Make starchy foods the basis of most meals

- Consume cereals and root vegetables in unprocessed or minimally processed form (high in fibre). This will also contain some micro-nutrients, fat and protein.
- Amounts of around 260gram/day are recommended for adult women and 325 gram/day for adult men. This should be at least 55% of one's total energy intake.

Eat at least 50 gram/adult/day of starch

4. Eat plenty of vegetables and fruit every day

- ❖ Eat citrus, onions, garlic, carrots and tomatoes (high in vitamin C and A) and crucifers (cabbage, kale, broccoli, cauliflower).
- Consume dark green and orange vegetables.
- ❖ A minimum of 5 portions or 400gram/adult/day is recommended

Eat 2 fruits and 5 vegetables every day

5. More legumes for better overall health

- Eat dry beans, peas, lentils and soy regularly
- Grain legumes are beans, lentils, cowpeas, chickpeas, peas etc.
- Oil seeds are soya and peanuts for example.
- This provides good quality protein, carbohydrates, fibre, vitamins and minerals.

Eat 100-200 gram of legumes /adult/day. This is 0.5 to 1 cup.

6. Food from animals can be eaten every day

- This includes meat, fish, chicken, milk and eggs.
- Besides protein this contributes towards intake of calcium, iron, zinc and omega-3 fatty acids.
- Eat low fat meats and use fats sparingly in preparation.
- Add small amounts to a plant based diet.

Take 400-500ml of dairy/day (milk, yogurt, maas, cheese...)

Eat 4 eggs/week

Eat 2-3 servings of fish per week

Do not have more than 560 grams or meat (chicken and red meat) per week

7. Eat fats sparingly

Lower the fat intake from meat and non dairy creamers.

8. Eat salt sparingly

High salt intake can lead to hypertension. For hypertension eating a diet high in vegetables and fruits, with low fat dairy products for 8 weeks will significantly reduce blood pressure.

Sprinkle, don't shake

9. Water, the neglected nutrient

Drink at least 2 litres of water per day

10. If you drink alcohol, drink sensibly.

Resource Material for Homestead Food Gardeners

Handout 3

Chapter 3

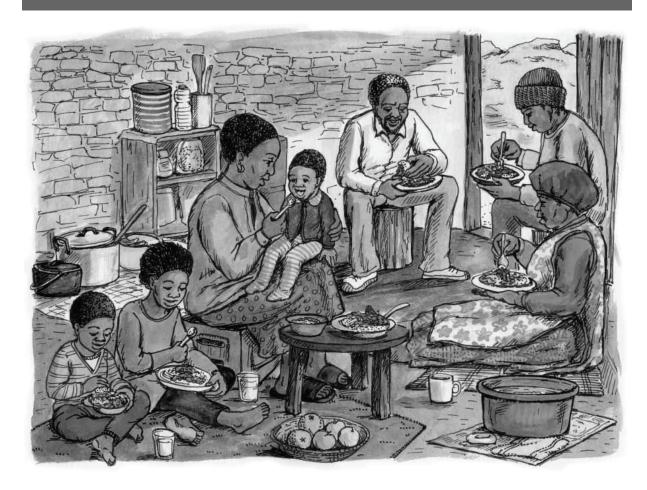
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Resource Material for Homestead Food Gardeners

Chapter 3: Handouts (seSotho)

Handout 1 Phepo e Nepahetseng (Living and eating well)

1. Phepo e Nepahetseng



Phepo e nepahetseng ke eng?

Phepo e nepahetseng ke tokiso e nepahetseng ea lijo, ho lipheha ka tsela e nepahetseng le ho lija ka litekanyo tse nepahetseng. Hona ho kenyeletsa nako e nepahetseng ea ho lipheha ka litekanyetso tse nepahetseng ho motho ka mong ho ipapisitsoe le ts'ebetso le lilemo tsa hae.

Phepo ea mokhachane

O lokela ho ja lijo tse nang le matsoai le matsoaeana ohle a hlokoang ke 'mele joalo ka; lithibela mafu



Lesea le fumana litlhoko tsa lona ho tsoa lebeseng la 'ma lona. Haele ba seng ba holile bona ba lokela ho fumantšoa litholoana le meroho hore ba lule ba sireletsehile mafung. Ntle le mono ba lokela ho fuoa liaha-'mele tse kang mahe, chisi, botoro, linaoa, 'lensisi' le linaoa tsa 'soya'. U lokela ho fepa bathonyana bana makhetlonyana a maloa ka letsatsi, bonyane makhetlo a mahlano. Le uena 'moho le thaka tsa hau le tlamehile ho fumana lijo tse nang le lihlopha tsohle hore le tsebe ho pheta mesebetsi ea letsatsi le letsatsi. Ntle le mono Bakuli 'moho le Baimane ba lokela ho ja ka mokhoa o khothaletsoang.

(meroho le litholoana); liaha 'mele (mahe, tlhapi, linaoa le nama) le limatlafatsi (papa, setampo, bohobe). Matsoaieana ke; ts'epe e fumanoang sebeteng, spiniching, nameng e khubelu joalo-joalo); calcium e fumanoa ho 'moko, lebese le chisi; iodine e fumanoa letsoaing le ntlafalitsoeng le tlhapi; folic acid e fumanoa merohong e metala 'me le thusa hore mokhachane a seke a senyeheloa nakong ea bokhachane.

Phepo ea lesea

Lesea ha le hlaha ho fihlela likhoeling tsa pele tse ts' eletseng le fumana lijo (lebese) ho tsoa ho 'ma feela. Le se fuoe le ha e se ele metsi feela. Ho tloha likhoeling tse ts' eletseng le fuoa lijo tlatsetso ebile le ntse le tsoela-pele ho anya. Lijo tsena ekaba litapole tse khotliloeng, lesheleshele le ntlafalitsoeng, mokopu o khotliloeng, kholu ea

linaoa kapa ea meroho esita le lero la litholoana.



Phepo ea bana (Lilemo tse 1-5)

Bana le bona ho tloha lilemong tse peli ho isa tse 18 ba hloka phepo e nepahetseng.



Phepo ea batho ba baholo

Batho ba baholo le bona ba lokela hoja lihlopha tsohle tsa lijo, ho ipapisitsoe le mosebetsi oa motho ka mong. Mohlala Seahi le mosebeletsi oa sechaba kantorong ba keke ba ja ka ho lekana, ka hona batla boeletsi ho 'Maphepo motseng.



Phepo ea maqheku le maqhekoana

Maqheku le maqhekoana le ona ka mokhoa o ts'oanang ba lokela hoja lihlopha tsa lijo empa le ha ho le joalo ba lokeloa ke matsoaeana akang calcium bakeng sa ho matlafatsa masapo le letsoai la vitamin A ho matlafatsa pono.

Phepo ea mokuli

Mokuli le eena o ts'oanela ho hlokomeloa haholo ka phepo e nepahetseng hore a tsebe ho hlaphoheloa ka pele. Hona ho thusa litlhare ho sebetsa hantle 'meleng.

Eja mefuta e fapakaneng ea lijo molemong oa bophelo bo botle

Re lokela ho ja mefuta e fapakaneng ea lijo e fanang ke **litlhoko** tsohle tsa 'mele. Ho phethahatsa hona ha u hloke hore u reke lijo tse theko e holimo haholo. Ka khetho e nepahetseng uena le ba lelapa la hau le ka phela bophelo bo botle bo amohelehang bo senang litšenyehelo tse holimo.

Lijo li arotsoe lihlopha tse tharo tsa mantlha, 'me tsona ke: **limatlafatsi, liaha-'mele le lithibela mafu**. U khothaletsoa hore khetlo le leng le le leng ha u ja sejaneng sa hau ho be le mofuta o mong le o mong o boletsoeng kaholimo. U lokela ho noa metsi a mangata, onyane mabekere a robeli letsatsi le leng le le leng.

Limatlafatsi:

'Lipatata'
Litapole (ho sa
tsotellehe hore
li pheuoe joang)
'Rice' e tšoeu
kapa e sootho.
Mabele
'Macaroni'
Bohobe
'Oats'
Lijo thollo
Libanana





Lihaha-'mele

Ke mofuta oa lijo kholong ea mele bakeng la kholo e ntle ea mesifa le likarolo tse ling. Li bohlokoa ho batho bohle, ho akareletsa bakhachane le bakuli, ba lokelang ho li fumana nako eohle eo ba jang.



Lethathamo le latelang ke la lijo tseo u ka li sebelisang ele mehloli ea liaha-'mele:

linaoa lierekisi

linaoa tsa 'soya'

makotomane

nama ea khoho

le mefuta e meng ea nama

tlhapi

mahe

chisi

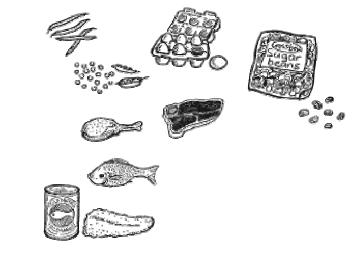
mafi

botoro

makotomane

peo ea moora-tsatsi

(sonoblomo)





Mahe a bohlokwa hoholo-holo bakeng la bana le bomme ba mmeleng jwalo kaha ana le proteins, vitamins, fats and calcium.

Bana ba loketse hape hoja dinawa kappa dierekisi kamehla. Ho bohlokwa hore bana baje dijo tse nepahetseng tse lekaneng kgafetsa.



Reisi e sootho le dinawa di nonne ho feta nama. Reisi e sootho e tshwana feela le e tshweu, ntle fela hobane e sootho ha eya tloswa makgapetla. Hona ho bolela hore reisi e sootho ena le protein, minerals and vitamins tse ngata, ho feta ena e tshweu.

Lithibela mafu

Sehlopha sena sa lijo se fana ka lithibela mafu. Ke sehlopha se nang le makhabane a mangata ka hona u khothaletsoa ho ja mefuta eohle e oelang tlas'a sehlopha sena.



Lethathamo lena ke la meroho le litholoana tse fanang ka lithibela mafu:

lamuni morara

peneapole

granadilla'

liperekisi tse tšehla

liperekisi tse tšehla

mabolilane

apole

pere

'lemons'

libanana

sepinache

tamati

litapole

'broccoli"

lihaba

lihoete

linaoa tsa lehoetla

lirekisi tsa lehoetla

betiruti





Hlatsoa litholoana le meroho hantle ka metsi a hloekileng pele u ka li sebelisa.



Meroho e metala le litholoana ka mebala e fapakaneng li bohlokoa 'meleng.

Ka hona bana le bakhachane ba lokela ho li fumantšoa kamehla.



Leka hore u je moroho kapa litholoana nako eohle ha u ja lijo tsa letsatsi. Ntle le tsona u ntse u ka ja tlhapi,, linaoa, le nama ka mefuta ea eona.



Mefuta ea lijo-tse ka fumanehang lapeng

Malebela a ho hlokomela lijo

Tlama leqeba kapa seso pele u tšoara lijo. Kamehla hlapa matsoho ka metsi a sesepa le pele u tšoara lijo. U khothaletsoa hobala ho tloha ho 'ngoe ho ea ho leshome le metso e mehlano nakong eo u ntseng u hlapa matsoho. Ona ke mokhoa oa ho netefatsa hore u ipha nako e lekaneng ea ho hlapa matsoho.



Malebela

U khothaletsoa ho sebelisa nama hang ha u qeta ho e reka kapa u e boloke ka sehatsetsing. Haeba u ka e boloka nako e telele ho feta matsatsi a mabeli u lokela ho e boloka ka moo ho batang haholo. E phehe nako e telele ka mocheso o sa phahamang ho fihlela e lokile. Qoba ho ja nama e sa butsoang hantle kapa ho pheha mahe ao likhaketlana li peperaneng.





Litekanyo tsa lijo tsa letsatsi le letsatsi'

❖ Limatlafatsi – E le 'ngoe kapa kaofela hoa tse latelang:

Bohobe; Halofo ea lebekere le tšetseng 'macaroni', 'rice' e sootho, litapole, poone, kapa; Lebekere le tletseng 'oats', lesheleshele kapa phofo ea poone.

Liaha-'mele – Khetha tse tharo lethathamong lena:

Lebekere la linaoa kapa lierekisi, 'moho le oli ea moora-tsatsi e bongata bo lekanang le halofo ea khabana ea tee; Mahe a mabeli; Leqa le leholo la tlhapi, khoho kapa mefuta e meng ea nama; Khaba e tletseng ea oli ea moora-tsatsi, makotomane; Lebekere le tletseng lebese le motsilili kapa mafi; selae sa chisi.

Lithibela mafu

Litholoana tse tharo tse feletseng; Lebekere le halofo tsa meroho. Eketsa bongata ba mooratsatsi haeba u sa atlehe ho hoja litholoana.

Lijo tsa sesotho

nyekoe	mokopu, linaoa le mabele tse phehuoeng 'moho
likhetso	mokopu o sa eboloang oa phehelloa' moho le lithotse
lepu	mabolotsane a kopantsoeng le lihaba
lesheleshele	motsoako o belisitsoeng oa phofo ea poone kapa ea mabele le metsi
leqebekoana	bohobe ba koro bo phehuoeng ka metsi
motoho	motsoako o belisitsoeng oa phofo ea poone kapa mabele, tomoso le metsi
likhobe	e kaba tsa poone, koro kapa motsoako oa poone le linaoa/lierekisi tse phehuoeng
setampo	poone e haitsoeng
lipolokoe	bohobe ba mabele a macha

Khetho le tokiso ea lijo

Etsa bonnete ba hore u boloka makhabane a matle a litholoana le meroho

Litholoana le meroho tse sa tsoa khuoa serapeng li na le matsoai a mangata ho lekana. Ho qoba hore matsoai ana a lahlehe ka lebaka la tšoaro e mpe le mokhoa o mobe oa ho pheha u khothaletsoa ho etsa tse latelang:

- Ja meroho le litholoana li ntse li le tala.
- ❖ Kaha boholo ba matsoai bo fumaneha letlalong u se ke ua li ebola.
- Khothaletso ke hore meroho le litholoana li lengoe malapeng.
- Ha u lokisetsa ho pheha qoba ho li khabela hasesanyane kaha li lahleheloa ke matsoai ka bongata ho feta tse khabetsoeng ka botenya.
- Pheha moroho nako e khutsòanyane ka mocheso o seng bohale haholo ho fihlela li lokile. U sebelise oli e tlhotliloeng limeleng ha u pheha lijo tse ling.
- Ja lijo hang ha u qeta ho li tšola.

Litlama tse ka sebelisoang e le linoko

Limela tse sebelisoang ele linoko joalo ka 'cinnamon' li ka sebelisoa ho eketsa tatso lijong.



- 'Parsley' e nkhisa lehano hamonate ha u eja haholo kamor'a lijo.
- ❖ 'Ginger' e ntle bakeng la ho phekola ho nyekeloa ke pelo hape le serame.
- 'Garlic' e ntle bakeng la ho loantsa mafu. U ka e phehella le lijo tse ling kapa ua e ritela ka metsing a chesang.
- ❖ 'Thyme' e matlafatsa tšilo ea lijo. U kopanya makhasi a eona le lijo tse ling.
- ❖ Tse ling tseo u ka li sebelisang lijong tsa hau ebile u ka itemela tsona ke: 'coriander', 'oregano', 'sweet basil' le 'fennel'.

Phepo ea mokuli

Hangata ho u ena le maloetse u ka lebala ho ja, empa ele ntho ea bohlokoa aholo nakong ena ea ha u kula. Ho ja hantle ka nepo nakong eona ena ho na le melemo e latelang:

- 'Mele oa hau o tla matlafala.
- 'Mele o tla atleha ho loantsa mafu.
- U tla atleha ho ja matsoai le lithibela mafu.



Ha u hloloa ho fepa 'mele oa hau ha u kula u tla lieha ho fola.

Ho etsahalang 'meleng ha u kula?

Nakong eo 'mele oa hau o loantšang likokoana hloko o hloka bongata ba mefuta ea lijo e oelang tlas'a lihlopha tse tharo tsa lijo, e leng limatlafatsi, liaha-'mele le lithibela mafu.

Nakong eo u kulang ho ka nna hoa etsahala hore:

- ❖ U ikutloe u khathetse hoo u leng botsoa ho lokisa lijo.
- Moriana oo u o noang o etse hore lijo li latsoehe ka mokhoa o sa tloaelehang, 'me li be bohla.
- U be le letšollo, lehlatso kapa ho nyekeloa ke pelo ho ka 'nang hoa etsa hore u lahleheloe ke takatso ea lijo.
- U be liso ka hanong hoo u hloloang ho hlafuna.

Leha ho le thata, u iqobelle ho ja lijo. U ka ntlafatsa mokhoa oa hau oa ho ja ha u kula ka ho:

- ❖ Jaha meroho le litholoana tse phehoang ka bongata.
- Etsa bonnete ba hore u fumana limatlafatsi.

Mocheso o holimo le ho fufuleloa ha u robetse

Ho phahama hoa mocheso oa 'mele ke tsela eo 'mele o loantsang likokoana hloko ka teng. Leha ho le joalo u lokela ho ela hloko hore mocheso o seke oa phahama ho feta moeli. Ka hona u tlameha ho lula u ntse u noa metsi a mangata le ho ja liaha-'mele 'moho le lithibela mafu.

Bothata ba ka maleng

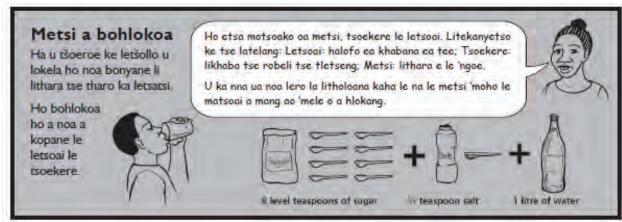
Bothata bo ikhethang ke letšollo, e leng tahleho ea metsi le matsoai 'meleng. Letšollo le kotsi haholo ho masea, bana ba ntseng ba hola le bakuli ka kakaretso.

Letšollo le bakoa ke eng?

- Ho noa metsi a sa hloekang
- Ho se hlape matsoho kamor'a tšebeliso ea ntloana, eba u tšoara lijo ka ona a ntse a le joalo
- Ho sebelisa thepa ea ho pheha e sa hlatsuoa hantle, kapa ho ja litholoana u sa li hlatsoa.
- Meriana e meng
- Tšoaetso ka maleng
- Khatello ea maikutlo
- Lijo tse bolileng
- Lijo tseo 'mele u sa li tloaelang.

Hobaneng ho le bohlokoa ho ja hantle ha u tšoeroe ke letšollo?

Ka lebaka la letšollo 'mele o lahleheloa ke metsi le matsoai a mangata, 'me o qetelle o fokola. U lokela ho noa metsi a mangata 'moho le lero la litholoana. Kamor'a lekhetlo le leng le leng la letšollo u lokela ho ja u be u noe metsi. Bana ba tšoeroeng ke letšollo ba lokela ho fuoa motsoako le lijo khafetsa.





Lijo tse khothaletsoang bakeng sa ho loantša letšollo

- Lijo tse bonolo joalok' a lesheleshele, sechu sa meroho le litholoana.
- Meroho le litholoana tse phehiloeng li ebotsoe.
- Lijo tse futhumetseng.
- Lijo tse fokolang ka bongata khafetsa ka letsatsi.
- Lero la litholoana le hlapollotsoe ka metsi
- ❖ Sopho
- Libanana tse sa butsoang hantle
- Litapole, mokopu, tamati, lihoete
- ♦ 'Rice' e tsoeu
- Papa
- Bohobe bo bosoeu
- Mak'haroni

Mefuta e meng ea lijo e ka mpefatsa boeme ba letšollo, ka hona u olkela ho qoba ho li sebelisa. Tsona ke: moroho o tala, litholoana le meroho e meng tse sa ebolang, poone, lijo tse nang le linoko, mangangajane, tee kapa kofi, 'berries'. U ka fokotsa bongata ba lebese (le le mokeli-keli kapa phofo) leo u le jang.





Lehlatso le ho nyekeloa ke pelo

- Haeba u nyekeloa ke pelo kamor'a ho noa moriana u khothaletsoa ho o noa ka nako e ke keng ea ama ho ja lijo tsa hau.
- Itloaetse ho ja hangata ka letsatsi, feela u ja lijo tse fokolang lekhetlo le leng le leng.
- Ja lijo tse batang.
- Haeba u belaella lijo tse mafura joalo ka chisi kapa tse halikiloeng, u ka leka ho li tlohella ka bo'ngoe ho fihlela u beha boemo tlas'a taolo.
- U se ke ua ja linaoa. U je meroho ekang 'broccoli', 'pepper', 'cauliflower', le hanyanese.
- Sebelisa mafura a fokolang ka bongata.
- U ka sebelisa lijo tse ommeng joalo ka li 'biscuits', bohobe bo besitsoeng kapa lijo thollo.
- Qoba ho ja lijo tse nang le monko o ka 'nang oa mpefatsa maemo.

Lijo tseo u ka loantšang ho nyekeloa le lehlatso ka tsona

Ho nyekeloa ke pelo:

Metsing a chesang kapa 'soda water'
tse tsoakuoeng le lero la 'lemon
Tee ea maotoana e kopantsoe
le tsoekere 'moho le lero la 'lemon'
'Pudding' le 'custard'
'Rice' kapa 'macaroni'
Mahe a belisitsoeng
Lero la litholoana le
tsoakantsoeng le metsi
Libanana
Nama ea khoho e pheuoeng ka metsi
Litapole tse besitsoeng
Bohobe bo besitsoeng
Meroho e pheuoeng nako e lekaneng hantle

Lehlatso:

Metsi Sopho Litholoana tse bonolo joalo ka libanana, mokopu











Bothata ba lehano

U ka hloloa ho khotsofatsa litlhoko tsa 'mele ka lebaka la liso ka hanong kapa u sa thabele mofuta oa lijo o teng. Ka hona 'mele o tla fokolloa ke matla le mokhoa oa ho u sireletsa khahlanong le mafu ka mefuta-futa.

Seo u lokelang ho se etsa ha?

U lahleheloa ke tatso

- Tsukunya lehano ka motsoako oa 'bicarbonate of soda' le metsi a fofo pele u ja lijo. Tšela halofo ea khabana ea tee e tšetseng 'bicarbanate' ka metsing. U ka sebelisa metsi a kopaneng le lero la 'lemon'.
- Qoba ho ja lijo tse chesang haholo kapa tse batang haholo.
- U ka ithuta mefuta e meng ea lijo ho fihlela u ka etsa khetho ea tseo u li thabelang.
- ❖ Ha u hloloa ke tatso ea mofuta o itseng oa nama, mohlala khomo kapa nku, leka mefuta e meng joalo ka khoho, kolobe, tlhapi le ona mahe.

Lehano le omellang

- Itsukunye ka metsi a letsoai kapa a kopaneng le lero la 'lemon'.
- ❖ Noa metsi a mangata kamor'a lijo. Lehano le tla lula le le mongobo.



- Qoba ho ja lijo tse ommeng, tse nang le litlheferetsi li bile li hoasha ka hanong. Bonyane u ka ja tse bonolo, tse khotluoeng kapa litholoana tse bonolo joalo ka, mokopu, banana, sopho, nama e khabetsoeng ha sesanyane kapa u tšele lintho tse nolofatsang lijo joalo ka tamati 'sauce' le sopho.
- Qoba ho ja tsoekere hoba e tla mpefatsa maemo.

Lehano le liso

- Ja lijo tse bonojoana joalo ka mokopu, banana, sopho, nama e khabetsoeng ha sesanyane kapa u tšele sopho lijong.
- Noaha lesheleshele kapa sopho ka lebekere haele bakeng sa linoamapholi u sebelisa lelana (straw).
- Noaha sopho, lero la litholoana le la meroho.





Lijo tseo u lokelang ho li ja ha u le liso ka hanong

- Lijo tse bonolo tse kang litapole tse khotliloeng kapa sopho.
- Nama e khabetsoeng ha sesanyane
- 'Macaroni' le chisi
- Sopho
- 'Custard'



Tseo u lokelang ho li qoba

- Lijo tse linoko li bohale joalo ka chilisi le 'curries'.
- Lijo tse bolila joalo ka tamati, peniapole le mefuta ea lilamune.
- Lijo tse batang kapa tse chesang haholo.
- Lijo tse khoramelang joalok'a ka botoro kapa tseo u tlamehang ho li hlafuna nako e telele pele u li koenya joalo ka moroho o tala.
- Fokotsa bongata ba lijo tse tsoekere haholo 'moho le bohobe haeba u ena le makhopo.

Tee ea 'cinnamon'

Tšela phofshoana ea 'cinnamon' ka ntlha (1/4) ea khabana ea tee ka metsing a chesang a tletseng lebekere la tee.

Tee ea 'garlic'

Tšela likotoloana tse peli tsa 'garlic' ka lebekereng le tletseng metsi a chesang. U ka itsukunya ka eona.

Tee ea 'lemon'



Tšela lero la 'lemon' ka lebekereng la tee le tšetseng halofo ea metsi a chesang. U ka tšela tsoekere e be u enoa e ntse e chesa.

Ja hantle u tsebe ho atleha 'meleng

Hobaneng u ka theoha 'meleng?

U ka fokotseha 'meleng tlas'a mabaka a maloa a kenyeletsang ho seje hantle hobane u sena takatso ea

lijo, u nyekeloa ke pelo kapa u ena le liso ka hanong. Tlhokahalo ea takatso ea lijo e ka bakoa ke mokhathala o mongata, khatello ea maikutlo kapa ho

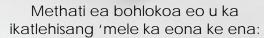
ferekana.



Lebaka le leng e kaba hore ua kula, ua hlatsa kapa u na le letšollo. Tlas'a boemong bona 'mele ha u thabele lijo tseo o hlileng o li hlokang hore o tsebe ho fola.

Malebela a ho ntlafatsa 'mele le takatso ea lijo

- ❖ Ja lijo makhetlo a 'maloa, makhetlo a mahlano ho isa ho a tšeletseng, ka letsatsi. Etsa joalo le ha u sa lapa.
- Leka ho fumana mefuta ea lijo eo u ka e thabelang ka ho latsoa mefuta e fapakaneng.
- ❖ Boikoetliso pele ho lijo bo eketsa takatso ea lijo.
- U se ke ua ja lijo tse halikiloeng le nama e mafura haholo.
- U ka sebelisa mefuta e mengata ea litlama tse eketsang tatso ea lijo. Tsona ke 'cinnamon', 'parsley', 'thyme', 'oregano' le 'sweet basil'. Ntle le mono u ka sebelisa lero la 'lemon'.
- Itsukunye ka metsi a kopantsoeng le lero la 'lemon' kapa 'bicarbonate of soda'.



- Qoba tahlehelo ea metsi le matsoai ho tsoa 'meleng ka mokhoa oa letšollo.
 - Phekola mafu ohle
- Ja tsohle tseo u lokelang ho li ja ka bongata bo khothaletsoang.

Mehlala ea lijo tseo u ka lijang hore u eketse 'mele

- U je setampo, 'rice', bohobe bo bosootho, 'oats', litapole le libanana ka bongata.
- ❖ U je lijo tse latelang khafetsa: nama ea khoho, tlhapi, mahe, mefuta e meng ea nama, linaoa ka mefuta ea tsona.
- ❖ Lipakeng tsa linako tsa lijo tse tloelehileng u je litholoana, lihoete, 'peanut butter' le lilae tsa bohobe tse tlotsitsoeng ka jeme kapa u noe mafi.



Mekhoa ea ho matlafatsa seo u sejang lapeng

- Tšela tsoekere kapa jeme leshelesheleng
- Fuluhella mafura leshelesheleng la hau.
- ❖ Jaha motsoako oa linaoa, 'rice' le mafura.
- Tšela mafura kapa oli litapoleng ha u li pheha.
- ❖ E ba le maga a nama ka sophong ea hau.
- Ja papa (ea poone kapa mabele) kapa setampo ka linaoa.
- ❖ Tšela lebese le phofo leshelesheleng, sechung kapa sophong.

Natefeloa ke bophelo ka ho itlhahisetsa lijalo tsa hau

Mokhoa o bobebe oo u ka netefatsang hore u na le mefuta e fapakaneng ea meroho le litholoana ke ho itlhahisetsa tsona serapeng sa hau, 'me ho bobebe ho etsa joalo.

Tse ka hlahisoang:

lihoete 'thyme' k'habeche 'sweet basil'

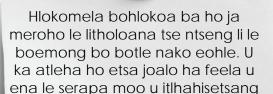
sepinache 'fennel' anyanese 'coriander' 'garlic' betiruti

litapole 'cauliflower'
tamati 'kale'
'broccoli' rapa
mokopu sepaile

poone rapa e putsoa

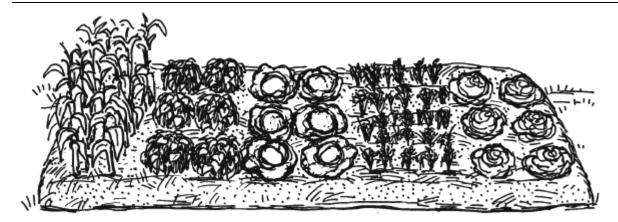
linaoa 'leek' 'parsley' lierekisi





tsona e seng u li reke.

Haeba serapa sa hau se le seholo ho lekana u ka itemela lifate tsa litholoana.



Ho tlaba le sehloho se seng seo u tlang ho ithuta ho itlhahisetsa lijalo.

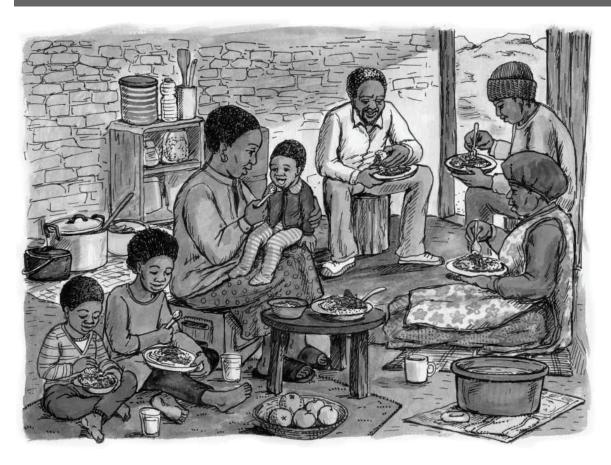
Resource Material for Homestead Food Gardeners

Chapter 3: Handouts

(isiZulu)

Handout I	ukupnila kanye nokudia ngendiela etanele (Living and eating well)
Handout 2	Izincomo ezilishumi zokudla ukudla okunomsoco(The 10 food-based dietary guidelines)
Handout 3	Ukugcina imininingwane yokudla okudliwa ekhaya nsuku zonke (What did we eat today?)
Handout 4	Engihlela ukukutshala kulelo nalelo sonto (Planting Plan)

1. Ukuphila kanye nokudla ngendlela efanele



KUYINI UKONDLEKA KAHLE?

Sonke siyakudinga ukudla. Imizimba yethu idinga ukudla ukuze ihlale iphilile, ibe nomfutho futhi ikhule ibuye ikwazi ukwelapheka uma igula. Ukudla esikudlayo kusetshenziswa imizimba yethu ngezindlela ezahlukene. Izingxenye ezahlukene zokudla esikudlayo zisetshenziselwa izingxenye ezahlukahlukene emizimbeni yethu njengokusinika amandla nokusisiza ezifeni ukuze sihlale siphilile.

Sidinga ukudla okuningi okunhlobonhlobo futhi okunempilo ukuze imizimba yethu izokuthola konke ekudingayo. Uma sidla kahle sisemathubeni angcono okuphila kahle futhi siphile impilo engcono.



Kunconyiwe ukuba umntwana ancele ubisi lukamama kuphela. Abantwana bathola konke abakudingayo obisini lukamama.

Izingane kudingeka ukuba zidle imifino nezithelo ukuze zihlale ziphilile. Kudingeka futhi ukuthi zidle ukudla okuzobasiza ukuba bakhule okunje namaqanda, ushizi, inyama, ibhotela lamantongomane, ubhontshisi, ama "lentils" kanye nobhontshisi okuthiwa yi Soya, Izingane ezincane kumele zihle kahlanu ngosuku.

Abantu abadala kudingeka ukuba badle ukudla okuningi okunhlobonhlobo ukuze imizimba yabo ihlale isebenza ngendlela ekahle. Kubalulekile kakhulu ukwenza lokhu ikakhulukazi uma ugula noma ukhulelelwe.

Singadla kanjani ngendlela efanele ukuze siphile kahle?

Ukudla ngendlela efanele kusho ukudla izinhlobo ezahlukene zokudla ukuze umzimba uthole konke okuhle okukudingayo. Lokhu akusho ukuthi kumele uthenge ukudla okubizayo. Ngokucabangisisa kahle ngalokho okudlayo, nalokho ozokulungisela umndeni wakho, kanye nokukhetha kahle ukudla ungakwazi ukudla ukudla okufanele nsuku zonke ngendlela engembi eqolo.

Kunezinhlobo ezintathu ezibalulekile zokudla:

- Okukunika amandla (Go Foods)
- Okukhulisa umzimba (Grow foods) kanye
- Nokusivikela ezifeni (Glow foods).

Kumele udle ukudla okunakho kokuthathu okungenhla nsuku zonke. Kufanele futhi uphuze izingilazi zamanzi ezingu 8 ngosuku nsukuzonke.

Ukudla okusinika amandla (Go Food):



Ukudla okusinika amandla (Good energy/Go Food



Ubhatata; Amazambane noma ngabe alungiswe ngayipl

llayisi elinsundu noma elimhlophe

Imacaroni noma ispagethi

Isinkwa

Ubhontshisi owomile noma uphizi

Ukudla okuyo "oats"; Amabele

Amacereal (ukudla kokwenza idokwe)

Ukwatapeya

Ubhanana



Ukudla okukhulisa umzimba nezicubu (Grow Food)



Lolu wuhlobo lokudla olunama "protein" amaningi. Loluhlobo lokudla lugcina umzimba wakheke kahle futhi lusiza umzimba ukuthi ube nezicubu ezomelele. Luyasiza futhi ekuvikeleni umzimba ekuhlaselweni yizifo. Kubalulekile ukuthi udle ukudla okukhulisa mzimba nsuku zonke ikakhulukazi uma ugula. Izingane zidinga ukudla okunamaprotein amaningi ngoba zisakhula. Nakanjalo nabesifazane abakhulelwe.



Amaganda mahle kakhulu ezinganeni nakwabesifazane abakhulelwe, njengoba enama "protein", amavithamini, amafutha, nesiginisamathambo (calcium).

Izingane zingadla nobhontshisi noma uphizi nsuku zonke.

Kuncomekile ukuthi izingane ziphakekelwe ukudla okuncane kodwa izikhathi eziningi ngosku.

Izinhlobo zokudla okwakha umzimba

Ubhontshisi Uphizi

Undumbanjane (Soyabeans)

Amantongomane

Inyama yenkukhu

Isibindi senkukhu

Inyama yenhlanzi

Inyama ebomvu

Amaganda Ushizi

Amasi

Ibhotela lamakinati (peanut butter)

Ama - nati akhiwa esihlahleni

Ujikanelanga noma ubhekilanga





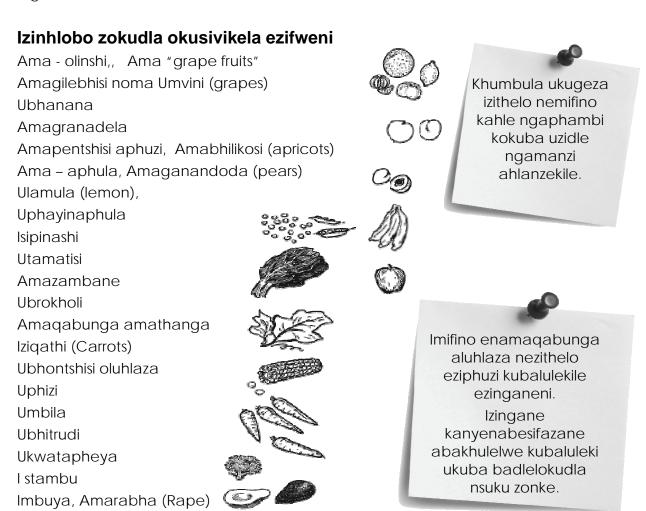


elinsundu nobhontshisi kunomsoco kakhulu kunenyama! llayisi elinsundu liyinto eyodwa nelayisi elimhlophe umahluko kuphela ukuthi elinsundu alingasuswanga isikhumba. Lokhu kusho ukuthi leli elinsundu linama protein, amaminerali kanye namavithamini amaningi kunaleli elimhlophe.

Ukudla okusivikela ezifeni (Glow Foods)



Loluhlobo lokudla ukudla okusiza ekulweni nezifo ezihlasela imizimba yethu. Lokhu ukudla okunamavithamini kanye namaminerali amaningi. Kumele udle izinhlobo eziningi ezahlukene zokudla okusivikela ezifweni ngoba zonke zinibuhle bazo ngokwehlukana kwazo.







Izaluleko zokuphepha ezibalulekile

Njalo kumele ugeze izandla zakho ngensipho nangamanzi ngaphambi kokuba uthinte ukudla nangemuva kokuya endlini yangasese. Geza izandla zakho nhlangothi zomabili uthathe isikhashana ngokubala ka uze ufike ku15 ngesikhathi ugeza.

Bopha izilonda noma wemboze lapho ulimele khona ngaso sonke isikhathi lapho upheka noma unikeza abantu ukudla.

Ukukhetha nokulungisa ukudla ozokuphekwa

Phuza amanzi kakhulu

Udinga okungenani amanzi angamaglazi ayisishiyagalombili ngosuku. Kumbe awuzukucabanga ukuthi udinga amanzi angaka. Kodwa ungazama uzibonele ngokwakho. Phuza amaglasi amanzi ayisishiyagalombili ngosuku izinsuku ezintathu zilandelana. Lokhu akuhlanganisi iukuphuza itiye noma ikhofi. Ngemuva kwalezonsuku ezintathu, uzizwa njani? Ngabe uzizwa unomdlandla noma uphile kahle?





Isixwayiso esiphephile sokudla.

Amanzi ompompi aphephile. Uma usebenzisa amanzi omfula noma ipitsi kumele uwabilise noma ufake I – tea spuni likajikhi emanzini angango 25litha ngaphambi kokuba uwaphuze. Gcina amazi akho esitsheni esihlanzekile.



2. Izincomo ezilishumi zokudla ukudla

okunomsoco

1. Thokozela ukudla okunhlobonhlobo

- Yidla ukudla okunhlobonhlobo okunezondlo ezinhlobonhlobo
- Qikelela indlela okupheka ngayo ukudla kwakho
- Kugweme ukudla ukudla ukunezondlo ezincane nalokho okungakuniki umdlandla owenele
- Kugweme ukuphila impilo engakuholela ezifeni ezingamahlalakhona (chronic disease).

Kufanele udle ukudla okuhlukahlukene okungu 20 kuya ku 30 esontweni ngalinye

2. Yina ngumuntu ojwayele ukunyakazisa umzimba

- Zijwayeze ukuthi uvamise ukuyakazisa umzimba nsuku zonke isikhathi esingaba yimizuzu engamashumi.
- Lokhu kuyakuvikela kumahlalakhona (chronic diseases, noma izifo ezikuphatha isikhathi eside, ogcina uphila nazo) anjenge "hayihayi", isifo sikashukela, isifo senhliziyo kanye nomdlavuza.

Nyakazisa umzisa izikhathi eziyimizuzu engamashumi amathathu cishe nsuku zonke

3. Akungenzeki kungabibikho ukudla okunesitashi ekudleni okudlayo

- Yidla ukudla okusanhlamvu (cereals) kanye namaveji ayizimpande (root vegetables) kunjengoba kuvela ensimini kungaphekiwe noma kuphekwe nje kancane. Lokhukudla kunomhadlahadliso (fibre) omningi. Kanti futhi lokhukudla kunawo futhi umsoco (micro nutrients), amafutha kanye namaprotein.
- Abesifazane abadala kufanele bathole lokhukudla okungu 260gram/ngosuku (ipuleti elijwayelekile), bese kuthi abesilisa banikezwe okungango 325gram/ngosuku (ipuleti eliqongile) ukuze bathole umfutho owenele.

Yilowo nalowo muntu omdala kufanele athole u 50 gram/wesitashi ngosuku (cishe okungangenkomishi)

4. Yidla amaveji amaningi kanye nezithelo eziningi ngosuku, nsukuzonke

- Yidla izithelo ezisa olintshi (citrus), u anyanisi, u-garlic, ukherothi noma izaqathi kanye notamatisi (ngoba kuno vitamin C no A omningi) kanye nokudla okusakhabishi (crucifers) okunjenge khabishi, kale, u-broccoli kanye no kholiflawa.
- Yidla ukudla ukudla okunamacembe aluhlaza ngokujulile kanye nanombala osa-olintshi.
- Kufanele umuntu omdala athole izinxenyana ezinhlanu noma u-400gram/ngosuku zalokhukudla

Yidla izithelo ezimbili kanye namaveji amahlanu ngosuku

5. Ukuze impilo ibe yinhle kakhulu, kumele kudliwe ukudla okusabhontshisi okuthe xaxa

- ❖ Yidla ubhontshisi owomile, uphizi, ama"lentils", kanye ne "soy" njalo nje
- Grain legumes are beans, lentils, cowpeas, chickpeas, peas, etc.
- Izimbewu ezinowoyela, njenge "soya" kanye namantongomane esinye isibonelo.
- Lokhu kwenza ukuthi umzimba uthole lezizondlo ezilandelayo: amaprotein, ama"carbohydrates" I "fibre" noma umhadlahadliso, amavitamini kanye nama "minerali".

Umuntu omdala kufanele adle amagram ayikhulu kuya emakhulwini amabili (100-200gram) okudla okusabhontshisi (legumes) ngosuku. Lokhu kusho inxenye yenkomishi.

6. Ukudla okuvela ezilwaneni kungadliwa nsuku zonke

- Lokhu kusho lokhu okulandelayo: inyama, inhlanzi, inyama yenkukhu, ubisi kanye namaqanda.
- Ngaphandle kokuthi lokhu kudla kunika amaprotein, kuphinde futhi kondle umzimba bge "calcium", "iron" noma insimbi, I "zinc", kanye ne "omega-3 nama "fatty acids".
- Yidla ukudla okungenawo amafutha kakhulu kanti futhi akumele ube ngumngane awo amafuthe.
- Thatha imbijana yalokhukudla okuvela ezilwaneni, ukufake esidlweni sakho esenziwe ngezitshalo.

Thatha isilinganiso esingu 400-500ml wokudla okwenziwe ngobisi/ngosuku (okunjengo bisii, iyogathi, amasi, ishizi...)

Yidla mamqanda amane ngesonto Yidla ukudla okunenhlanzi kabili noma kathathu ngesonto NOMA

Akufuneki ukuthi udle inyama ebomvu noma yenkukhu engaphezulu kuka 560 grams ngesonto

7. Akufuneki udle ukudla okunamafutha kakhulu

Awangabi maningi amafutha enyama owadlayo, kanjalo futhi nasobisi okungelona lwenkomo.

8. Ungabowudla usawoti omningi

Ukudla kakhulu usawoti kungaholela ekutheni uzithole usunehayihayi. Uma ungumuntu one "hayihayi" kufanele udle ukudla okunamaveji amaningi kanye nezithelo. Uma wenze lokho isikhathi esingangamasonto ayisishiyagalombili, umfutho wegazi emzimbeni odala I"hayihayi" uyehla.

Wufafaze usawoti, ungawuxukuzi

9. Amanzi, ngesinye isondlo somzimba esinganakekile

Phuza okungenani amalitha amabili ngosuku

10. Uma ungumuntu ophuza uphuzo oludakayo, phuza ngokuzicabangela.

Resource Material for Homestead Food Gardeners

Chapter 3 Handout 3

		Izinsuku		Umsombuluko		Ulwesibili			-	a nsuku zonke	Ulwesine		
		121113000	Abantu	Abagulayo nabagugile/ Abantu abadala	Izingane ezincane	Abantu	Abagulayo nabagugile/ Abantu abadala	Izingane ezincane	Abantu	Abagulayo nabagugile/ Abantu abadala	Abantu	Abagulayo nabagugile/ Abantu abadala	Izingane ezincan
EZA pods	ane,	Inkomishi eyodwa nohhafu kuya kwezimbili ngosuku											
A OKUNIK DLA (Go Fo rdla okune starch)	ummbila, amazambane, ubhatata, uphuthu												
UKUDLA OKUNIKEZA AMANDLA (Go Foods - ukudla okune - starch)	ummbila, ubhata												
	ida, kinati	Inkomishi eyodwa ngosuku											
KUDLA OKUKHULISA CUBU (Grow Foods ukudla okunamaprotein)	ii, amaqan na,inkhuku yphizi, amo												
UKUDLA OKUKHULISA IZICUBU (Grow Foods ukudla okunamaprotein)	Ubisi, amasi, amaqanda, umnyama,inkhuku, ubhonishisi, uphizi, amakinali												
-	ashi, ppa, uk	izinkomishi ezimbili											
Food	if A shatate b, ispine en pep upape	ngosuku											
Glow nelo)	vit C, vit A rrothi, ubha a, imitino, is lisis, ugreen oranges, up	00											
OKUVIKELA EZIFENI (Glov njengamaveji nezithelo)	vit C, vit A ikharathi, ubhatata, ilthanga, imilina, ispinashi, utamatisis,ugreen peppa, ama- oranges, upapaya,												
LA EZI aveji		zinkomishi ezintathu kuya kwezinhlanu ngosuku											
JVIKE	I minera i uhlob khabish khabish inisi, lettuc												
A OKI	vitamins and minerals Noma iluphi uhlobo Iwamaveji ukhabishi, uanyanisi, green beans, lettuce, beetroot	25											
UKUDLA OKUVIKELA EZIFENI (Glow Foods njengamaveji nezithelo)	Norr Iwan												
	mafutha no oyel ga, ibhotela, imajari												
	ezilwaneni	anye neSweetAid;										la constant	

Handout 4

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				ОКПИI (СО ГО ICh	MDLA		- spoo	OKUDIA OKUKHULISA UZICUBHU (Grow Foods UKUDIA OKUKHULISA				Njeugawayeji netifiela) Njengamayeji netifiela)									