

# Training Needs for Homestead Agricultural Water Use

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# 1. Introduction

This document reports on the “**training needs of households/home gardeners in relation to the most promising opportunities**” identified in previous phases of this research project.

## 1.1 “Most promising opportunities”

The team found that the “most promising opportunities” relate in the first instance to an understanding of an appropriate starting point for poor households, and in the second place to those production and water management methods which respond to this “appropriate starting point”, namely:

- The first and foremost role of homestead agriculture, is the opportunity it offers poor households to attain good nutrition through intensive home food production. Therefore, the “**first-round**” training developed in this project, focuses on addressing the most pressing dietary shortfalls in the household. Many households who consider themselves food secure, may still benefit from the nutritional insights gained from “first-round” training, which helps them towards a diet which is not only adequate in quantity, but also balanced nutritionally<sup>1</sup>.
- “**Further rounds**” of training are then derived in response to specific needs households identify from implementing the knowledge they had gained from the “first round” training, or to pursue further opportunities they may identify. Economic opportunities often become relevant once households are “free from worry over where the next meal will come from,” which is indeed a powerful definition of food security. “Further round” opportunities are often identified outside the agricultural field (e.g. English literacy, computer training).

There is much confirmation for this “viewpoint in ancient and current literature, experience and even statistics, and it echoes the International Peasant Movement’s push for “food first” – at household, village, and national levels.

From personal bitter experience and as confirmed in his work with many poor rural households across South Africa, Johann Adendorff often quotes an old Chinese proverb, namely: “A hungry man sees only one problem...” MaTshepo Khumbane (who has also been the victim of food insecurity and has spent a lifetime helping others fight their way out of it), calls homestead production for food security “the first brick” of development. She urges developers not to prematurely stress business development for hungry households, which may indebt and destabilise them even further.

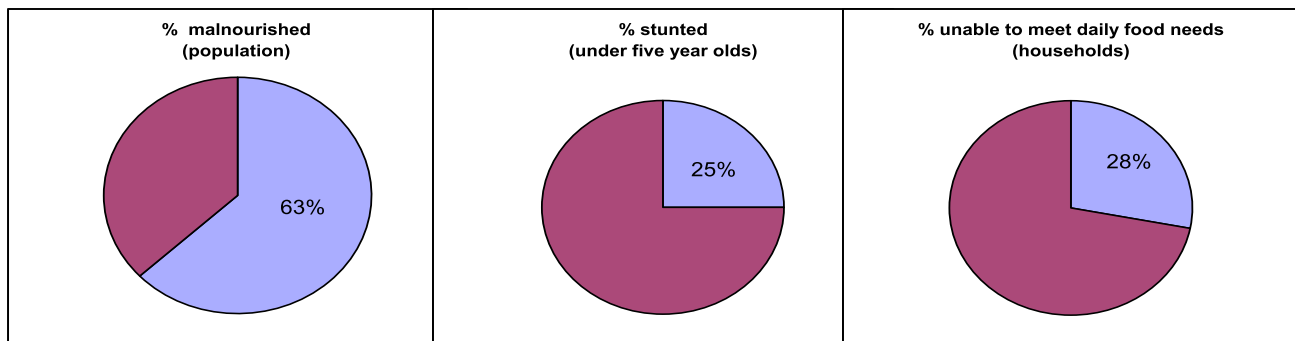
A drive to improve food security through intensive home food production is very relevant in South Africa, when the following facts and figures are considered:

- 1.3 million households in the rural areas in South Africa, and almost 1 million households in the urban areas, are still unable to meet their daily food needs (Business Report, July 2006).
- Stunting in pre-school children is a very serious problem in South Africa, affecting 25% of children under the age of five (UNICEF, 2006). Permanent physical and mental damage pushes the stunted pre-schooler into a low lifelong earning capacity. This creates a vicious inter-generational cycle of malnourishment-low income-malnourishment, as these low income earners are themselves more likely to have malnourished children with low income potential, and so on and on.
- In South Africa, permanent damage is more frequently caused through malnutrition, rather than undernutrition, and specifically through a lack of micro-nutrients (vegetables and fruit) and protein, rather than a lack of energy foods, like maize porridge.

From the statistics presented in the pie charts below, it is clear that lack of good food is a serious and ongoing problem for a large proportion of South Africa’s population, affecting the current and future prospects of the nation.

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<sup>1</sup> Research on household nutrition in two villages in Sekhukhune, Limpopo, found that the nutritional status was better in a remote lower-income village where food gardening was practiced, than in a village nearer to large towns with higher employment and better income, but where food gardening was rare. P Potgieter.



The diagram below provides an overview of current interventions aimed at the national/regional level (on the left-hand side of the diagram) and those aimed at household level (right-hand side of the diagram). It shows how support for homestead food gardening would provide an integrated response at household level to address all three aspects of food insecurity – namely availability, access and utilisation of food – in a very direct and immediate way.

This understanding of the “most promising opportunities” for homestead agriculture, based on a starting point of “food first”, followed by “economic opportunities”, informs the usefulness of specific production and water management methods as follows:

- Water management and food production methods for food security must respond to a food insecure household’s reality of cash-scarcity and low resilience to shocks like droughts, illness and any events that demand cash (weddings, funerals, school fees) or additional labour (repairing flood damage, etc). The relevance of low external input sustainable approaches (LEISA) is therefore acknowledged.
- LEISA remains relevant in the establishment of fledgling economic opportunities, helping to avoid the debt risks before a solid “fall-back position” has been established. Higher cost methods and equipment could become more relevant during the “business expansion” phases.

Public assistance, or non-dependency creating “smart subsidies” can be a great boost, right from the “food first” starting point. “Smart subsidies” typically involve once-off assistance for infrastructure components and equipment. Preference is given to equipment which places no on-going cash demands on the household, and other assistance which requires no on-going external inputs that could create household dependency.

The “most promising” methods and technologies share the common characteristic that they help people get “more for their effort” in a cash-scarce situation. These methods help people to **intensify** their production, thus getting better crop yields and quality, while using low cost methods. This means improved **efficiency** in the use of resources. For example:

- **LEISA:** With low external input production methods people can get good yields of high quality, e.g. by using organic waste for plant nutrition, thus avoiding the need to buy fertilizer;
- **Deep trenching:** With deep trenching (and other ‘permanent bed’ systems), nutrients and water are concentrated in the plant root zone;
- **Run-on:** By making ditches and laying out the garden with rainfall run-off in mind, the gardener can channel rainwater to the plants during rainstorms. Directing rainwater from external surfaces like roads, roofs and paved areas towards the garden is called ‘run-on’ and increases the total annual water flows to the garden;
- **Water storage:** Underground water storage tanks enable the gardener to collect and store rainwater running off vast surfaces around the house, yard and roads for use during dry periods;

- **Tower gardens:** By building tower gardens (especially next to the kitchen), the household creates a convenient permanent vegetable bed which uses grey water and continues to yield for a long time. The uptake of tower gardens is best where they can be made from local materials; and
- **Treadle pumps:** Where households have treadle pumps, they have a non-cash dependent way of pumping water for food gardening without being dependent on external power sources like petrol, diesel or electricity.

“First-round” training in the application of these methods and technologies aims to cover the essential aspects people “need to know” to experience successful production. An overload of information is avoided. As will be seen, the actual content may differ from group to group, depending on their prior experience, priorities, stated needs and the season the training is taking place in. Flexibility in the training programme or “learning agenda” is important to be able to provide input timeously on issues as they arise, e.g. dealing with a fruitfly problem quickly. Some content is only meaningful to cover if the problem occurs at all, e.g. bacterial wilt on tomatoes.

“Further round” training can go into more depth on specific aspects, and build on concepts covered in the first round. As an example, the “first round” may cover one type of brew as a generic pest remedy, while “further rounds” may get more specific about specific kinds of pests and remedies that target them more exclusively.

### ***Participatory ways to find training needs***

Early in the project, the decision was taken not to perform structured formal training needs analyses in all the project sites. This decision is linked to the original title and concept of this research project, namely “**participatory development** of training material...” Formal training needs assessments tend to be top-down and questionnaire-based and easily end up being a ‘shopping-list’ of training needs, with limited practical value.

Instead, the team has put together a **set of processes** (based on a typical cyclical action research approach), which enables a facilitator **to determine and work with the specific training and learning needs in any particular household learning group**.

The research team itself also used consultative and participatory processes to collate and verify the content of the proposed WRC Facilitator Learning Toolkit.

- *Drawing on existing experience and material within and outside the research team:*
  - i. The team used outputs from previous phases and existing experience (see box), to put together and verify “preliminary training content areas” for a training programme for intensive homestead production.
  - ii. Available training in these “content areas” was collated from various sources, and from this was identified the “first-round” content (what people need to know to first experience successful production).
  - iii. This was then tested for relevance and practical

#### **Box: Resources used to develop Preliminary Content Area**

Preliminary content areas were pre-determined and verified by drawing from the following resources and processes:

- Reports generated during earlier phases of this project, namely the “Situation Analysis Report for South Africa”, “Selected Areas Report”, “How to use or improve current/indigenous practices or systems” and “Economic Opportunities Report”;
- Experience gained in the selected areas, especially through work with the Potshini learning groups, but also from preceding experiences with several villages in the KwaZulu-Natal, Eastern Cape and Limpopo Provinces;
- A sample of other organisations’ and individuals’ experience with training needs assessments and learning content in food security and homestead agriculture; and
- Inputs made by participants in the First Stakeholder Workshop, held in Drakensville in March 2007.

application in Potshini, one of the selected areas. (Examples from the work with the Potshini Learning Groups are given throughout this document.)

➤ *Nutrition gap analysis with participating households:*

The team concluded that as **food insecurity** implies a the deviation from a balanced and sufficient diet, **food security** can be improved by identifying and addressing the specific nutritional gaps on a household-by-household basis.

A practical methodology was developed to enable households in a learning group to identify their food gaps and plan what to plant accordingly. Training content is then extracted from the WRC Facilitators' Learning Toolkit to support these implied household training needs.

➤ *Prior learning in food gardening:*

As good facilitation practice, a method is recommended to assess and work with prior learning in household learning groups. This provides a way to give recognition of prior learning (RPL) in a specific learning group, and shape their unique training content accordingly.

*Note: This method also creates awareness among learning group members of each other's know-how, which fosters mutual support and sharing of information. This engenders a culture of continued learning and sharing beyond the facilitator's presence.*

These methods are reported on in greater depth in Chapter 3.

## **Overview of this document**

As a basis for understanding homestead agriculture training needs, Chapter 1 introduces the two aspects of "most promising opportunities", namely "food first" as an appropriate starting point, and the selection of soil and water management technologies to match the household economic status and immediate objectives. It then introduces the research team's participatory approaches to both training needs determination and training content development.

Chapter 2 gives an overview of the elements of participatory training methodology which distinguishes it from more linear conventional approaches, and explains some of the practical implications of a shift in favour of adult learning methodologies. A major conclusion is that "training" is effective when it takes place as one of the components in a broader "learning" process, and needs to be complemented by experiential learning through experimentation, cross visits and other hands-on methods. Therefore, this document argues in favour of a shift in terminology from "training material" to "learning toolkit"<sup>2</sup>.

Next, methodologies for determining training needs are discussed in Chapter 3, and the more participatory approach used by the research team is explained. A process is recommended by which facilitators can come to agreement with household learner groups on a "learning and action agenda" for homestead agricultural training, based on those households' current learning needs and prior learning.

In Chapter 4, an overview is provided of the training content areas and baskets of options for **household learning** decided through the processes described in Chapter 3. An example is then given of how these content areas were used in Potshini to design and implement a learning programme.

Next, the training needs of **facilitators** is discussed in Chapter 5. It lists the eight learning units designed for facilitators, using similar content areas as those tested in the Potshini community. The

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<sup>2</sup> One of the main recommendations at the First Stakeholder Workshop for this WRC project, held at Drakensville in March 2007, was also that the research team should rather produce a "learning toolkit" as opposed to "training material".

detail for these content areas is being compiled into a Facilitators' Learning Toolkit, which will be the main product of this WRC project. A facilitator could use any combination of extracts from these eight units to put together a suitable "learning and action agenda" according to the needs of a particular household learner group.

Thus, in content, facilitator training is based on the training content areas derived for households, but covers these more comprehensively than the content initially shared with households. However, in process, the principles of adult education are as relevant to facilitators as they are to households.

In Chapter 6, some ideas are shared with regard to the skills requirements of **trainers-of-trainers** who would be responsible for the preparation of facilitators.

Chapter 7 discusses some the challenges involved in getting new training provision programmes established within organisations. Emphasis is placed on the need for management to understand and provide the physical and moral support needed by facilitators. Progress is reported on two processes initiated by the WRC research team to institutionalise facilitator training for intensive homestead production – at UKZN and UNISA respectively.

Throughout the document, case studies and examples are given, sometimes to underpin recommendations made by the research team, and sometimes to better explain a specific approach used or recommended.

## 2. Participatory methodology

For the design and facilitation of development interventions it is important to distinguish between paradigms, methodologies, tools and techniques<sup>3</sup>. For this WRC research project, our development intervention is the participatory development of training materials.

### ***What is our paradigm?***

A paradigm is an overarching framework of beliefs, assumptions and approaches that shape how individuals, organisations or societies behave and respond to problems or opportunities. Paradigms establish the moral and intellectual rationale for the design and use of particular methodologies.

Paradigm followed here:



The paradigm is accompanied by values and principles:  
Here these would be principles of community development work.

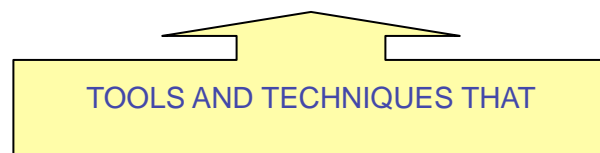
### ***2.2 And our methodology?***

A methodology is a coherent and logical approach or process for undertaking particular types of tasks or solving particular problems. A methodology is made up of a package of specific tools and techniques used in a logical order

The methodology suggested here:



The specific ways of completing the tasks that add up to a methodology, are the tools and techniques used



We need to select tools and techniques that are in line with the methodology and that allow people from different socio-economic, cultural-ethnic and educational backgrounds to express, share and learn with and from each other. Below are some examples of methods/tools used for assessment and analysis of the present situation in a community.

## **FOUR CLASSES OF PARTICIPATORY METHODS/TOOLS, with examples of each**

<sup>3</sup> Source: Sustainable Regional Development SRD Kit

(2000) John Dore, Colma Keating, Jim Woodhill and Katie Ellis. Greening Australia

<ul style="list-style-type: none"> <li>* Brainstorming</li> <li>* Focus Groups</li> <li>* Experimentation</li> <li>* Team contracts</li> <li>* Look and learn</li> </ul> <p><b>GROUP AND TEAM DYNAMICS</b></p>	<ul style="list-style-type: none"> <li>* Transect walks and direct observation</li> <li>* Wealth ranking and social maps</li> </ul> <p><b>SAMPLING</b></p>
<p><b>SENSITIVE INTERVIEWING AND DIALOGUE</b></p> <ul style="list-style-type: none"> <li>* Semi-structured interviews</li> <li>* Types, sequencing and chains of interviews</li> </ul>	<p><b>DIAGRAMMING AND VISUAL CONSTRUCTION</b></p> <ul style="list-style-type: none"> <li>* Participatory mapping and modelling</li> <li>* Seasonal calendars and activity profiles <ul style="list-style-type: none"> <li>* Time lines and local histories</li> <li>* Venn and network diagrams</li> </ul> </li> <li>* Matrix scoring and pair-wise ranking</li> </ul>

## 2.3 Our process methodology

A methodology firstly **to work on community level** :

- To assess the present situation
- To analyse with community members what the system is, as well as issues, learning and opportunities within this system
- To analyse what appropriate interventions for improvement would be, including the information and skills needs of such an intervention.

A methodology secondly **of a learning approach** that best suits the needs and circumstances of the particular target group.

### 2.3.1 Community Involvement Methodology

In terms of community involvement we need participatory tools for diagnosis and analysis of the present situation, planning and evaluation. Examples of tools used within this research process follow:

#### **Community/ group level: (SLA, PRA, SMILE))**

- Surveys (with questionnaires), SLA (Sustainable Livelihoods Analysis)
- PRA (Participatory Rural Appraisal)
- Focus group discussions
- SMILE (Typology of farmers and simulation of economic scenarios relevant to them)
- Systems (low external input agriculture, farming systems)

#### **Individual homestead level: (Water for Food Movement methods mainly)**

- Present household situation; drawings and descriptions
- Mind mobilization (principles, values, charter, candle ceremony)
- Visioning (Helicopter plan)
- Activity charts (gender differentiated)

### 2.3.2 Learning Process: Farmer-to-Farmer

#### **Lessons from Agricultural Extension**

## INNOVATION

Innovation is a creative act. But innovation does not just happen. Innovation as a solution or a reaction to change, asks much of both the individual and the community as a whole. It is a pre-requisite for continuity and survival.

This applies to commercial concerns, to small farmers and to the human race as a whole. In a time of continual and rapid change, innovation is necessary in order to survive.

## TRANSFER OF KNOWLEDGE: Old but sprightly

Western industrial society is based on the belief in progress. Science is seen as the vital source of innovation. In this respect, technology is the quintessence of innovation. Extension transfers innovation to the “users”. Once an innovation has been introduced into a community, it is believed to propagate itself freely by a process which we call diffusion of innovations.

HOWEVER, THIS HAS PROVED TO BE **WRONG!!!!!!**

Yet, extension science has been based upon this philosophy for years.

Diffusion and adoption processes do in fact play an important role in social change, but some of the shortcomings of the diffusion adoption model are as follows:

- It concentrates on the acceptance of ideas which come from outside. This is still actively employed in marketing.
- The tendency to consider those that do not accept the innovation as “laggards”, while they may have sound reasons for not adopting.
- One can only see retrospectively whether an innovation has been adopted.

These shortcomings are clearly demonstrated in the TRANSFER OF TECHNOLOGY model. In this linear model, research develops an innovation, and extension transfers the innovation to farmers who simply adopt the innovation. Events mostly do not conform to these linear predictions.

Despite criticisms, this old linear model is still being used as the basis for much of the thinking about extension and innovation.

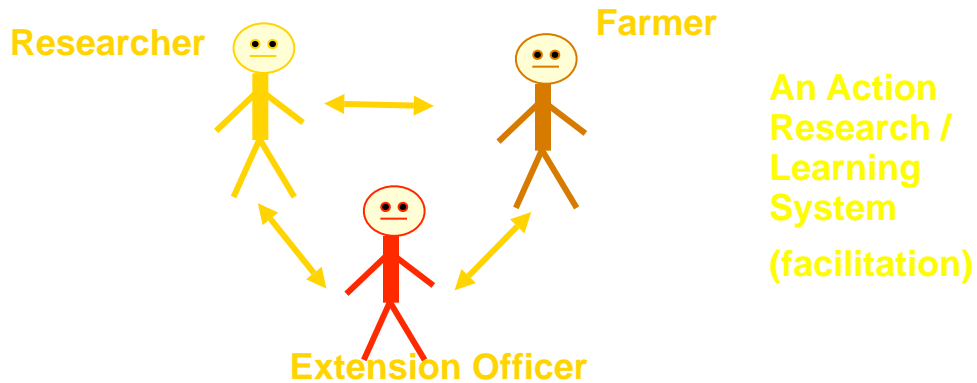
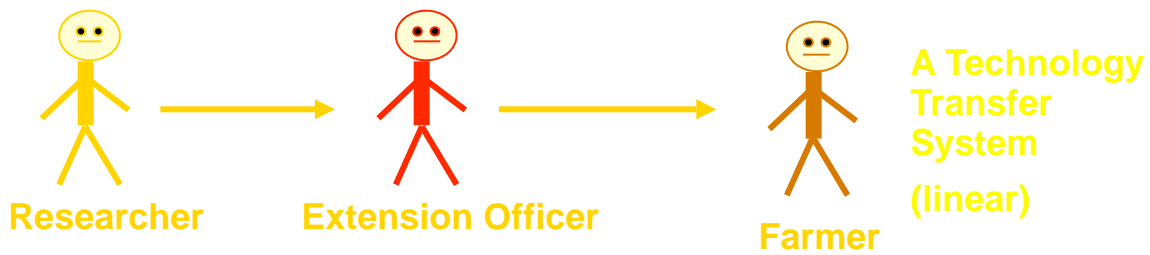
## OTHER PERSPECTIVES

The ineffectiveness of the linear models for different categories of small farmers, has led to the adoption of approaches oriented towards the participation of small farmers in their own mobilization, organization and training, so that they can improve their own position. FARMING SYSTEMS RESEARCH AND EXTENSION is based on the idea that new technologies must be geared towards and fit in with local smallholders' farming systems. PARTICIPATORY TECHNOLOGY DEVELOPMENT (PTD) takes the process a step further, recognizing local knowledge development processes. This stimulates the farmers to initiate their own thinking and research processes. Formal research then complements this process. PARTICIPATORY INNOVATION DEVELOPMENT is still within this continuum, now recognizing that technologies fit within cultural and social arrangements that also need recognizing, and that people learn and change in different ways.

FARMER to FARMER is an extension methodology based on PTD, where exchange of knowledge is emphasized (rather than transfer), and farmers themselves become the extension agents of research and experimentation carried out by themselves.

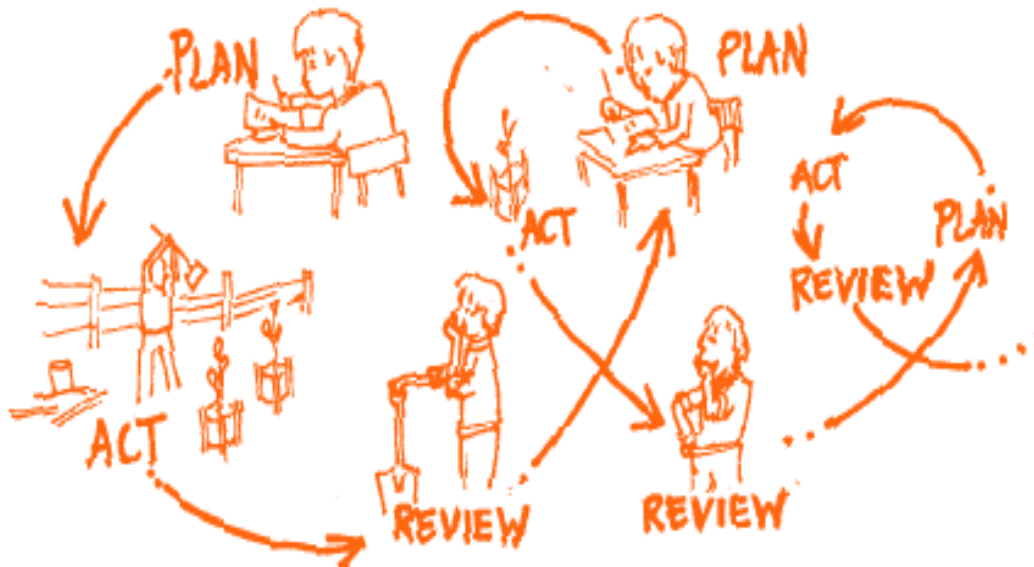
*From: Roling, J. Proost, C. Dangbegnon. 1992. The Setting: Background on Agricultural Innovation.*

The diagrams below illustrate the basic shift in research and extension towards participation, exchange and learning:



from : Hendrik Smit. "Development and implementation of sustainable land management practices in the Bergville District of the KwaZulu-Natal Province. ARC 2003-2005.

### **Experiential (action) learning**



From: Hendrik Smit: "Development and implementation of sustainable land management practices in the Bergville District of the KwaZulu-Natal Province. ARC 2003-2005.

## **2.4 Our methods and tools**

### **2.4.1 Community Process: Look, Learn, Do**

<b>PROCESS</b>	<b>ACTIVITIES</b>	<b>METHODS/TOOL</b>	<b>Examples</b>
<b>Assessment</b>	<b>OBSERVATION</b>	Layout drawings Focus group discussions Sustainable Livelihoods Participatory Rural Appraisal	
<b>Analysis</b>	<b>LEARNING</b>	Adult Education Farmer-to-Farmer Learning groups <i>In situ</i> analysis of gardens	
<b>Experimentation</b> - for problem solving	<b>ACTION</b>	Farmer experimentation Activity charts Demonstrations	
<b>Empowerment</b> -for own choices to change	<b>PLANNING</b>	Mind Mobilization Visioning Individual record-keeping	

**What do we need to know or do to support the above community process?**

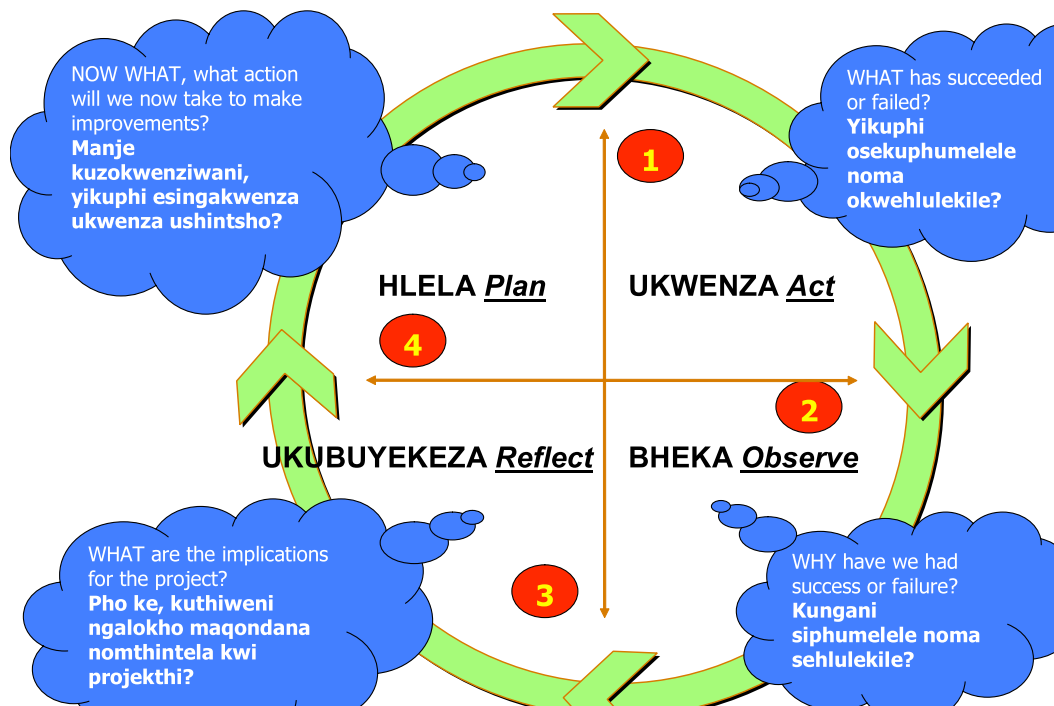
- We need to understand thoroughly the present situation and it's constraints and opportunities
- Have relevant examples and new ideas
- Be able to support observation, reflection and action

**How do we support the community process?**

- Help the individuals or groups to assess their present situation through participatory methodologies
- Provide a context for analysis through
  - Examples
  - The broader picture (placing their situation within a system)
- Support experimentation
  - Things to try
  - Framework of analysis

## Overall methodology: Action Learning for Farmer Groups

### ACTION LEARNING FOR FARMER GROUPS



### Why group learning?

Learning in groups:

- ♦ Allows for social development in the groups
- ♦ Give each group member an opportunity to come with an answer, which allows for evaluation and consensus in group relations
- ♦ Is more competitive
- ♦ Allows learners to support each other, through which learning can happen quickly
- ♦ Saves time; as members can exchange ideas while learning from one another
- ♦ Allows for sharing of creative ideas.

*From: A curriculum desing for Adult education and Training Programmes, Curmo-Designs cc. ACAT, 1995.*

### 2.5 Elements of training methodology that need to be considered

The elements of training methodology presented below in summary, were dealt with in detail at the onset as part of the “setting the scene” for our participatory process. The TRAINING TRIANGLES presented then, have now been visualized more as continuums along a trajectory moving from a basically linear to more cyclical and iterative processes. The latter are inherently more aligned with adult education principles. These continuums are presented below:

<b>Elements of training methodology</b>		<b>Continuum of possible process: Linear structural ----- Cyclical experiential</b>		
<b>DESIGN PROCESS</b>	<b>PROCESS OF DESIGNING TRAINING CONTENT</b>	Designed by specialists; including trainer or trainers curriculums	Designed by facilitators or trainers themselves	Designed by facilitators and farmers in formal or less formal ways; Becomes very difficult to assign boundaries and structure
	<b>Continuum from training through social education to experiential learning (using adult education principles)</b>			
<b>TRAINING PROCESSES</b>	<b>TYPE OF CONTENT</b>	Standard or pre-designed curriculum or courses; can conduct RPL here and use NQF framework	Mix and match training inputs from a basket of options; can conduct RPL and use NQF with greater difficulty – Unit standards are used as complete units; they can not be split up.	Project specific or needs based training
	<b>Continuum from formal to informal education( using adult education principles)</b>			
	<b>NATURE OF LEARNING MATERIALS</b>	Written materials with pictures, eg manuals for trainers or farmers	Pictures, posters or other visualization techniques to generate discussion	Stories, oral presentation and practical demonstrations
	<b>Continuum of literacy to illiteracy and appropriate learning materials (using adult education principles)</b>			
	<b>INDUCING IMPLEMENTATION</b>	Assumed automatic after training	Follow-up advice given and sometimes other support	Experimentation; experiential learning
	<b>Continuum of learning styles</b>			
	<b>THE PEOPLE</b>	Groups of funded trainees	Learning or functional groups	Individual trainees/ learners/ innovators; including household visits
	<b>Continuum of taking into account individual learning needs</b>			
	<b>TRAINING VENUES</b>	Short residential courses; including courses spread over a period of time (also distance education models)	Short courses in the community	Ongoing training sessions in the community over a period of time
	<b>Continuum of spatial bias</b>			

### 3. Determining training needs for Intensive Homestead Agriculture

#### 3.1 Conventional Training Needs Assessments

Training needs for rural populations are generally determined using a combination of the following formal and mostly highly structured approaches:

- ♦ A situation analysis for the region, area, ward or village; and/or
- ♦ Surveys within the villages that include questions on income and expenditure, infrastructure, development, levels of education, literacy, general educational needs, skills development needs and present skills; and/or
- ♦ Community skills audits and asset based assessments.

Once the information is compiled and summarised, a generalised assessment of training needs is derived. Sometimes it is attempted to narrow the training needs down per target group. Then usually these generalised needs are compared to available training to decide on a training programme.

#### Some limitations of conventional assessments

- Training needs mentioned by community members are invariably expressed in **general and even generic** terms, providing training planners with little specific understanding of areas of content required.

For example, people would typically say they need training in “crop production”, “poultry”, or “grazing management”, without specifying what they may need to know about it. For instance, people may ask for training in ‘grazing management’, while actually conjuring images of fat cows, and not realizing that ‘grazing management’ may entail the complete rearrangement of the management of their natural resources.

To further illustrate this phenomenon, examples are given in the table below of the overlap in training needs expressed in various training needs assessments, conducted recently by various organisations in different villages:

Training needs assessments for various communities: Agricultural Focus						
KamaFurrow EC <sup>1</sup>	Umzimvubu EC <sup>1</sup>	Wolf River EC <sup>1</sup>	Tamboekiesvlei EC <sup>1</sup>	ACAT <sup>2</sup> KZN,EC	SRCD, KZN <sup>3</sup>	Ethekwini Municipality Rural Agriculture projects KZN <sup>4</sup>
Crop production (maize, beans, potatoes),7/7	Crop production, 4/5	Crop production, 3/6, 3/3, 5/5	crop production and rotation, 2/20	crop production	general agricultural skills such as animal and crop production	<b>Ximba; Ubhobhonono;</b> Application of fertilizer, pesticides, general crop management
Vegetable production, 4/5	vegetable production (succession, rotation, pest and disease), 3/5	Vegetable production, 3/6	vegetable production, 2/20	Values; a scientific approach, positive attitude toward agriculture, love of plants and animals, managerial skills		<b>Mkhizwana, Lindelani project;</b> planting times, production of seedlings, planting vegetables, applying chemicals
		Soil fertility including alternatives to fertilizers, 2/5		Soil		<b>Adams Mission;</b> Adding organic matter to soil, local marketing, irrigation techniques
dairy, 2/7	dairy, 3/5	Pest and disease management, 3/6, 1/3	Pest and disease control, 4/20	climate		
livestock management, 3/5	New crops; barley pastures, sugar cane, 2/5	Cattle management, 3/5	Disease management in cattle, 6/20	animal production	market management	<b>Ntshongweni, Zakhweni garden;</b> poultry, sewing, marketing
Poultry, eggs, 2/5	Poultry,3/5	Marketing, 1/6	Marketing and pricing, 5/20			
Financial Management, 1/5	Financial management, 3/5		grazing management, 2/20	farm management		
	Fruit trees and processing, 3/5		bees, 3/20	farming technology	Sustainable development; a range of production and job skills; literacy and numeracy	
	Tourism, 5/5		Cooking, 1/20	traditional relevance.	urban contact and development brokerage	



Notes on Table:

<sup>1</sup>Eastern Cape Resource Poor Farmers Irrigation Scheme Feasibility Study. (7 Schemes). DWAF, November 2004. Arcuss-Gibb(Pty)Ltd. East London; information gathered through household questionnaires mainly, but also focus group discussions

<sup>2</sup>A Curriculum Design for Adult Education Programmes according to identified needs and wants in kwaZulu- Natal, Eastern Cape and Swaziland. Curmo-designscc, 1995, for ACAT (African Co-operative Trust) Information gathered through household questionnaires only

<sup>3</sup> SRCD Certificate Research and Development project. Phase 1. evaluation and Audit, June 1999. Centre for Adult education, University of KwaZulu- Natal. Information gathered through interviews and discussions with role players - indirect

<sup>4</sup>Ethekwini (Durban) Scoping for 7 Agricultural Projects, Rural Area based Management Programme, 2006. Lima Rural Development Foundation, Pietermaritzburg. Information gathered through group interviews with members, focused on immediate needs, rather than general training.

- Training needs mentioned by community members generally focus on **immediate problems** that they are encountering. These change over time.

The following differentiations between advice, training and information may assist in an understanding of the inadequacy of using “training needs” as a definition for “learning needs” more broadly:

Learning is central in development processes, as change is implied or expressed. Learning is seen a vehicle for change in knowledge, skills and attitudes that are considered desirable for improvement.

For the production of learning materials in this environment (the field of intervention in betterment/ improvement of peoples' livelihoods), the main aim is to solve problems. If they are current problems, we talk of **extension/advice** and if they are future problems, we talk of **training**. If it is solely an information deficit, joint work on the problem is not undertaken, but rather provision of sufficient **information** at the right time in the right place. We therefore have technical communication that includes learning materials for;

- more widespread impact;
- more effective training;
- extension and information provision; and
- awareness raising and persuasion. <sup>Mark</sup>

<sup>Mark</sup> M. Whiteside. 1998. *Living Farms. Encouraging sustainable smallholders in Southern Africa.* Earthscan Publications Ltd, London.

- No two individuals usually mention the **same combination** of training needs.
- Training needs mentioned for **facilitators or extension officers** are generally extensive, broad ranging and in a way “**all encompassing**”; trying to ensure that these facilitators can be “all things to all people at all times”.

To illustrate this, an example is presented below of an evaluation and audit instituted in 1999 by the School for Rural Community Development (SRCD) at the University of KwaZulu Natal (UKZN) of their Certificate in Rural Community Development. As part of this process, approximately 35 stakeholders in rural development and training brainstormed their profile of a rural development facilitator.

As can be seen from the box below, they found that the requirements are “all encompassing” and indeed hard to find in any single individual:

## Ideal profile of a rural development facilitator

They need to be able to:

- ♦ Facilitate community participation and build community capacity to organise itself
- ♦ Develop manage and evaluate projects
- ♦ Access and understand the economy, entrepreneurship and micro-enterprise and
- ♦ Build capacity in community based organisations so that they can play a role in training and development delivery

In order to carry out these tasks facilitators need to **demonstrate the following competencies:**

### Knowledge

- ♦ A general knowledge of the rural development context and issues
- ♦ A specific knowledge of the targeted community, community needs and desires and available resources (human, natural and physical)

### Skills

- ♦ Communication skills eg conflict resolution and report writing
- ♦ Management skills eg financial management, project management and management of meetings, committees and workshops
- ♦ Training skills eg facilitation
- ♦ Research skills eg. problem identification, needs assessment, critical thinking, participatory methodologies
- ♦ Human relation skills eg listening
- ♦ Computer skills
- ♦ Fundraising skills eg proposal writing

### Attitudes

- ♦ Respect, patience, diligence and commitment, integrity, accountability and people-centredness.

- Another characteristic of conventional methods to determine the actual content of the training courses or interventions, is that these are usually **defined by the service providers** according to their own knowledge, biases and assumptions, abilities and resources, and may or may not be appropriate to learners, even if the level of education is appropriate.
- Further, it is often assumed that for any particular theme or content area, there is already an **existing body of authoritative knowledge** from which to draw. This is often an erroneous assumption.

## 3.3 An alternative approach to working with training needs

### 3.3.1 Recommended processes to work with training needs

In this study, a considerable departure was made from the more standardised approaches to determine training needs. Instead, the WRC research the team has put together a **set of processes** (based on a typical cyclical action research approach), which enables a facilitator **to determine and work with the specific training and learning needs in any particular household learning group.**

The recommended processes for working with training needs for homestead agriculture have three components which move from the generic to the specific, namely:

- to use the WRC Facilitators' Learning Toolkit as a tested and fairly comprehensive source of learning material for homestead agriculture training;
- to limit the scope of a local situation assessment to “need to know” aspects; and
- to use iterative participatory methods to refine and agree a “learning and action agenda” with household learning groups.

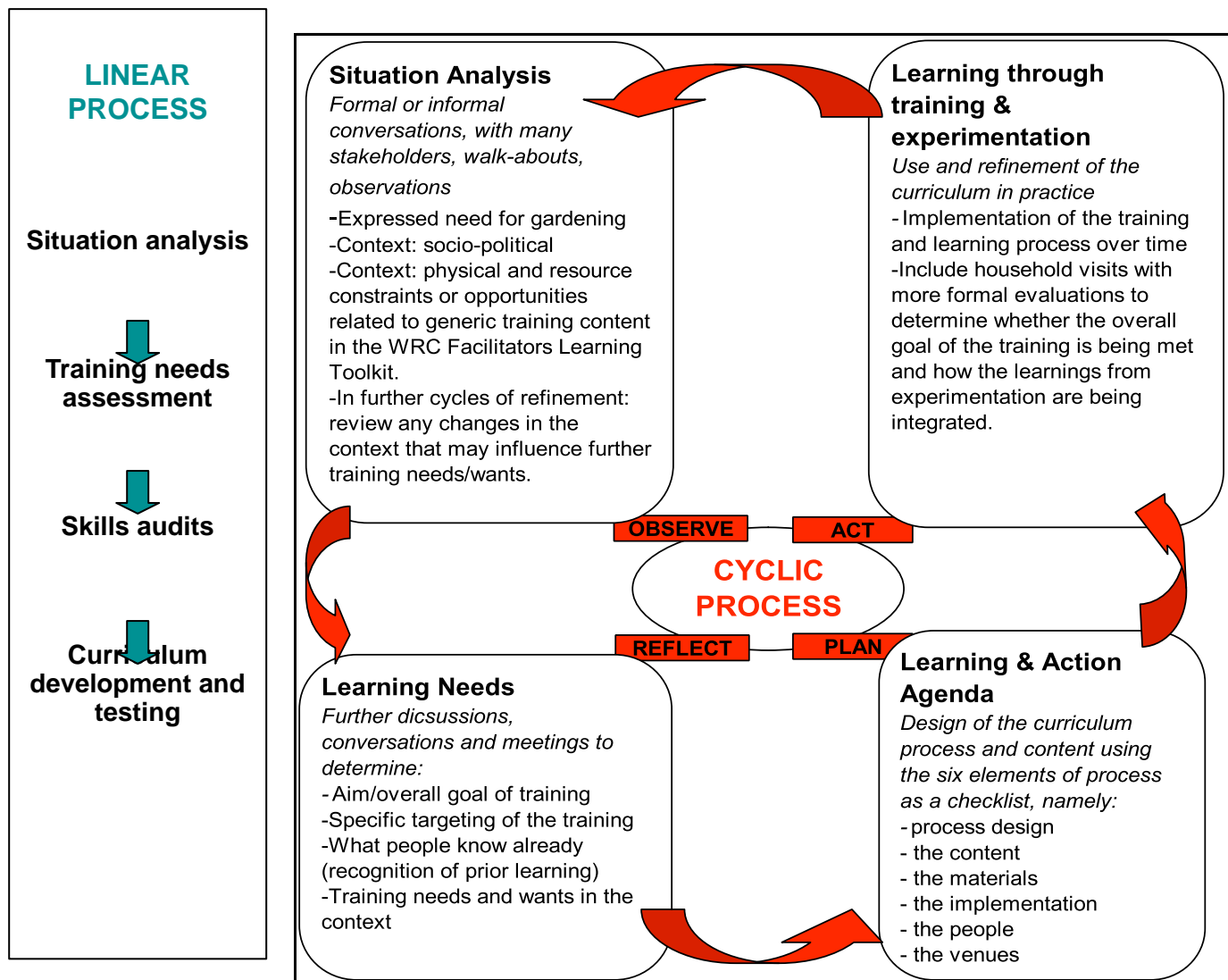
These recommended processes are discussed in more detail in the table below:

## Recommended processes to work with training needs in homestead agriculture

<p><b>Generic:</b></p> <p><b>LEARNING CONTENT AREAS</b></p>	<p>The WRC Facilitators' Learning Toolkit (under development) 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.</p> <p>The WRC Research team collated this Kit through wide consultation and in-field testing. Facilitators can further augment this from other sources should peculiar needs arise in a particular learning group.</p>
<p><b>Situation analysis:</b></p> <p><b>REVIEW BROAD CONTEXT</b></p>	<p>It is NOT necessary to perform a detailed training needs assessment at the village or regional level</p> <p>Establish whether there is an <b>expressed need</b> for household gardening, and specifically for <u>training</u> in household gardening</p> <p>Look at <b>physical factors</b> 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.</p> <p>Find out what <b>related processes</b> have already taken place in the area. Are people gardening? How well are they doing? Have they had training before? What type of learning processes are preferred? Who is the specific <b>target group</b> for further training interventions?</p> <p>Establish whether there are any <b>socio-political issues</b> which may help or hamper the implementation of a training programme in homestead agriculture</p>
<p><b>Specific training needs of household learning group:</b></p> <p><b>"LEARNING AND ACTION AGENDA"</b></p>	<p>Confirm that the members of the household learning group are clear about what they want and can expect from participation in the homestead agriculture training programme; <b>their expressed training need/agenda</b></p> <p>Facilitate a group process through which members can express their know-how in gardening. This provides a way to <b>recognise prior learning (RPL)</b> in the group.</p> <p>Facilitate a "<b>nutrition gap analysis</b>" with the learning group. The households' shortfalls in the "Go, Grow and Glow" food categories is then used to plan their garden production and their "learning and action agenda" for the current season.</p> <p>Pick the actual training content from the WRC Facilitators' Learning Toolkit to suit their <b>learning agenda</b></p> <p>Incorporate own <b>experimentation</b> throughout the learning plan</p> <p>Throughout <b>the training programme</b>, ask households about whether any specific problems are arising and where appropriate and possible, adapt the learning agenda to cover such issues.</p>

## Consultative processes used to develop the WRC Facilitators' Learning Toolkit

A more cyclic versus the traditionally more linear approach was also used by the WRC research team to develop the training content areas reflected in the WRC Facilitators' Learning Toolkit. This corresponds to the action research cycles discussed in Chapter 2.



LINEAR PROCESS	CYCLIC PROCESS
Tidy, linear, chronological	Iterative, messy, non-chronological
More generic; difficult to relate to specific areas of focus	Can be specifically focused from the start
Primary aim is to develop an authoritative body of content	Primary aim is to develop a process within which different content can be used effectively
Lends itself towards structural processes such as the NQF (National Qualifications Framework)	Lends itself towards more experientially and experimentally based processes.

Thus it can be said that, in line with the WRC research team's recommendation to follow more consultative and cyclic processes, a considerable departure was made from the more standardised approach in developing the learning content areas, as follows:

Targeted communities and groups were asked about their training needs as part of an initial situational analysis and no further surveys were conducted.

Content areas were pre-designed by the research team, drawing on the existing body of knowledge, but also taking into account:

our own experience and that of other stakeholders in these content areas; and adult education principles and experiential and group learning processes.

Training processes using these content areas or baskets of options within content areas, were then designed and facilitated both with household learning groups and at facilitator level.

From these processes it was possible to further refine training needs, content and training processes that work in the particular contexts.

The idea, basically, was to come up with a more standardised process within which particular bits of content could be fed into, rather than designing content per se.

### **3.3.3 Case study: Working with Training Needs in Potshini**

The Potshini learning groups are farmer-to-farmer learning groups active in intensive homestead food production.

#### **Introduction to the Potshini Case Study**

##### ***Summary***

The content areas developed for the WRC Facilitators' Learning Toolkit was used in a farmer learning group process for intensive homestead food production was implemented in Potshini, Emmaus, KZN. The Potshini process was based on Farmer-to-Farmer principles and followed a process of input, demonstration and experimentation in individual homesteads.

The focus was on the production of food, and more specifically on:

- increased diversity in the gardens; and
- intensification of soil and water management for optimal year round production.

A participatory nutrition gap analysis with participating households provided a point of departure for their homestead production planning, and consequently for the group's learning agenda. A focus on nutrition and local traditional production and food habits was maintained throughout the process, as was a focus on rainwater harvesting and ecological farming processes.

##### ***Related Processes***

Potshini is a rural area in lower Drakensberg, in the greater Emmaus area of KZN. Two farmer learner groups had been set up previously in the area through the relationship with the ARC minimum tillage programme and more recently the Smallholder Systems Innovation (SSI) programme of UKZN.

Prior to the WRC intensive homestead agriculture training, these learning groups had received a short, three day training in organic gardening, but which was mainly theoretical. Some members of the learning groups had also been on a cross visit to Matshepo Khumbane's home in Cullinan (Gauteng) where she had worked with them around their personal mobilization in food production for their families. She had covered a diverse range of topics, including nutrition, use of trench beds and rainwater harvesting, family activity charts and planning their production process.

## ***Expressed Needs***

Members of the learning groups mentioned that they had liked the Farmer-to-Farmer approach previously used by the ARC, through which the farmers had set up demonstrations and small experiments at their homes and had learned mostly through and with each other.

The WRC learning process was aimed at building on and concretizing what the learning group members had already been exposed to, therefore the Farmer-to-Farmer approach was adopted.

## ***Physical and socio-political factors***

In reviewing the broad context (local situation analysis), the WRC team learned that most people in Potshini had not had homestead gardens and had been doing dry land cropping, mainly in their fields. The learning process is part of a community process to introduce intensive home gardens in the community. The availability of water and fencing have been seen as major physical constraints.

## ***Target Group***

Learning group members were drawn from all sectors within the community, including one of the few formal groups present, the youth group, that was also involved in a wetland rehabilitation land care project. The community health workers were involved and new members who were keen and active were accepted into the learning group on a more ongoing basis. Care was taken to include the poorest and more desperate families in the community that showed an interest in food production.

**There were 64 members.**

## ***Recognition of Prior Learning***

Learning Group members reviewed their learning prior to the WRC training processes. They made a list of ***what they knew already***:

- They are primarily maize growers and some are still trying the no-till method introduced by the ARC. Some are not convinced.
- Most of the people who had been involved in the SSI programme from the beginning already had small gardens (in anticipation of receiving underground storage tanks) and were using some knowledge gained from training they had had by then.

## ***Learning agenda***

They came up with a learning agenda for the workshops. It is summarized below:

- Water management; roof water harvesting underground tanks, drip irrigation, brimming system (MaTshepo) and trenches with hand watering
- Livestock; chickens, goats and cattle; health and grazing management
- Water storage and water conservation
- Fruit production
- More vegetable production knowledge and garden layout
- Crop health management; homestead gardens and community garden
- Health and nutrition: HIV and AIDS
- Fencing/making fence
- Computer literacy

***Support needed*** was summarized as:

- Support and mentoring
- Guidance on experimentation
- Cross visits
- Help with writing proposals

## ***The learning programme***

Following the processes described above, a more hands-on, interactive learning process was

### ***Conclusion on recommended process for training needs***

The recommended processes for a more ongoing and iterative process of training needs assessment was implemented in Potshini. Evaluative comment has been obtained from members of the learning group and other stakeholders involved. Generally, appreciation has been expressed for the homestead-based practicality of the process.

The impact of the process is clearly visible through an increase in the presence of homestead food gardens from around 7% in 2004 (prior to any of these interventions and training), to around 70% after the learning group training process.

## 4. Training content and processes at household level

### 4.1 Introduction

**Content** for household training was based on a number of processes and documents in the field of water management and food security, as well as the actual implementation, analysis and assessment of new technologies by the householders and the WRC research team.

- One of the processes underpinning the training content and process is that used by Matshepo Khumbane from the Water for Food Movement;
- Another is the LIRAPA manual: “How to get the best from your garden”, which was designed for householders in Lesotho in a participatory manner, and in partnership with CARE International and the Livelihoods Recovery through Agriculture Programme (2005); and
- Another important departure point is the inclusion and focus on family nutrition within the learning process.

Homestead **soil and water technologies** introduced as part of the learning/training process, include the following:

- ♦ Underground rainwater storage tanks
- ♦ Deep trenching (to concentrate water and nutrients in the plant root zone)
- ♦ Run-on ditches for in-garden rainwater harvesting
- ♦ Tower gardens (labour saving, using grey water)
- ♦ Drip-kits (time saving and water management)
- ♦ Measurement of soil water for decision making in irrigation (FullStops were used)
- ♦ Diversified, low external input agricultural practices

### 4.2 The Household learning process

#### 4.2.1 The learning programme outline

The Potshini Learning Groups is again provided as a concrete example. This follows on from the Potshini case study introduced in Chapter 3 above.

- The **learning programme outline** was designed to take place over a period of six months, in the form of one-day workshops (approximately once a month) for the two learning groups. Each workshop was held at a different member’s homestead.
- A description is given below of how **family nutrition** was used **as the starting point** or “anchor” for the overall learning process.
- Learning group members were also encouraged and assisted throughout to do their **own experimentation**. This is seen as a cornerstone for true empowerment, as it engenders creativity and a culture of learning as a buffer against disaster. While this has always been important to households fighting poverty, it becomes even more essential in a world affected by climate change.

The CARE International LIRAPA manual: “How to get the best from your garden” was used as the basis for learning sessions. Specific sections were translated into

#### **LEARNING PROGRAMME OUTLINE**

One-day workshops over a six-month period.

#### **Outline of workshops (workshop dates in brackets)**

Family nutrition (22/06/2006)

Seedling production (14/07/2006)

Fertility (28/07/2006)

Demonstration of fruit tree planting + delivery of trees (25/08/2006)

Pest and disease control, including windbreaks (07/09/2006)

Garden layout; run-on and bed design (bed positioning and bed preparation).

Reflection on organic vs inorganic and till vs no-till options (11/10/2006)

Irrigation, including a demonstration of a foot pump (26/10/2006)

Processing, value adding and seed saving + Celebration !

*A more formal evaluation and planning session was conducted in February 2007.*

isiZulu for this purpose.

The WRC team also assisted members of the learning groups to purchase cheap fruit trees, that were ordered in bulk from the commercial nurseries in the Western Cape. Types of fruit purchased included: peaches, plums, apricots, pears, grapes, oranges, naartjies and lemons.

### ***Households' own experimentation***

A process for conducting individual household experiments was introduced early on in the process, to encourage creativity and problem-solving. Members of the learning groups each undertook specific experiments to conduct at their homes. At every workshop, participants reported back on their progress. The community facilitator (Mr T Madondo) conducted regular visits to members' homes to discuss their progress with them. He is a farmer experimenter himself, as well as an enthusiastic and knowledgeable farmer.

To further strengthen the farmer experimentation process, a post graduate research student from SSI is working with six volunteer households from the learning groups at their homesteads. She helps them to consolidate their experiments and together they monitor in depth the changes and impacts of various technologies and innovations tried by these volunteer households.

Scientific measurements of soil and water management, support the household's own observations. They keep records to track changes in their production as well as the social impacts in their homestead. This makes it possible to track the longer term implications of changes made by the households and will provide working examples of intensive homestead farming systems (with improved diversity, fertility and water management processes) for the larger community.

## **Family nutrition gap analysis**

The learning group process was started with a focus on **family nutrition**.

The intention was to ground the soil, water and diversity management needs in the gardens, in the food and nutrition needs of the learning group households.

Working as a group, we:

- analysed the food and eating habits of the members;
- identified gaps in nutrition and food types; and
- developed an outline for the introduction of new and different food types through the learning group process.

*We also explored traditional foods grown and consumed by people, as summarised in this box:*

We also looked into the specific nutrition needs of young children, as malnutrition is an issue in the community:

### **Food given to children < 5 years**

Mothers milk initially; then augmented with:

- Soft porridge; to which Rama margarine might be added when available
- *Amasi* (sour milk)
- Eggs (when available)
- Pumpkin, beans, potatoes
- “Juice” (Sweet Aid) and *Umdoko* (maize drink – not fermented)

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.”

Kwashiorkor is caused primarily by protein deficiency. Through the nutrition gap analysis, members discovered that indeed, their young children were not getting the necessary micronutrients (fruit and vegetables) and protein (available from meat and protein-rich crops like peanuts and legumes).

### **Foods to fill the nutrition gaps**

As a group, we made a list of potential crops to be planted to increase diversity, food availability and family nutrition.

It was interesting to note that quite a few traditional crops are no longer available in the area and these were requested.

*Please see the box for the list of potential crops identified by the households to fill their nutrition gaps:*

### **Diversity**

This topic was introduced as food diversity for family nutrition and health. Plants and crops not well known to participants were introduced. These plants were chosen to have multipurpose applications in the garden, in that they are natural pest and disease control plants and have both medicinal and food

## **4.2.2 Nutrition Workshop outline and process**

The workshop outline and process for the Nutrition Workshop is provided below, as a specific example of how the workshops were put together.

Note the participatory nature of virtually all the workshop elements, and how participants are lead on a journey of discovery. The closing stages of the workshop were designed to take people from heightened awareness straight into action.

The broad outline and evaluation of the rest of the workshops are thereafter discussed in section 4.2.3.

## **Workshop 1: Introduction to Family Nutrition**

### **Getting started**

*Each participant named something interesting that they know, use or do regarding nutrition. Each person offered a different comment that was recorded on newsprint.*

### **Group discussions on “what we eat”**

*Participants were divided into groups of 7-10 members. They discussed and recorded for report back in plenary the following topics:*

- *What we eat every week*
- *What we rarely eat*
- *What we would like to eat but do not have access to and*
- *What we feed the young children (ages 1-5yrs)*

### **Input from facilitators on food groups**

*Using the LIRAPA manual, facilitators went through the **go** foods, **grow** foods and **glow** foods. The go, grow and glow food groups (carbohydrates, protein and micro-nutrients) were briefly introduced, then participants selected food items they had mentioned in their “what we eat” reportbacks, that fit into those categories.*

*In the Potshini family nutrition workshop, in response to information given by participants, categories were also created for diabetes, high blood pressure and weaning foods.*

*A discussion was held on traditional foods and their role and value in modern society.*

### **An analysis of gaps in nutrition and how these can be rectified**

*Participants analysed their selection of different food groups and looked at what they eat regularly. They then offered suggestions of where they may be missing food types that may provide them with a more balanced diet.*

*Next, a list was made of the food types people would like to try and grow to augment their present range of food types. Each individual put their name against the food type they would like to include in their homestead systems.*

### **Input on new things to try**

*Facilitators introduced a few vegetables, herbs and fruits that could add variety to the diet of the participants. This was done through discussions, and by sending around samples and/or photographs.*

*Participants were then each given a chance to choose a small sample of seed for each type that they wanted to try and grow at home. Their names were recorded and it was agreed that their progress in terms of production from these seeds, would be monitored.*

*A list for orders of fruit trees was put together. (These were delivered and planted during Workshop 4)*

### **Evaluation and future learning topics**

*The workshop was closed with a brief evaluation and asking for suggestions from participants for further learning around family nutrition.*

## **4.2.3 Training content and process for further workshops conducted in Potshini**

The family nutrition workshop (Workshop 1) 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.

Workshop theme	Content	Process comments	Notes
<p><u>Workshop 2:</u></p> <p><b>Seedling production</b></p> <p>(14/07/2006)</p>	<ol style="list-style-type: none"> <li>1. Discussion on soils using bottle tests</li> <li>2. Discussion on ways to prevent frost damage; including aspect, slope of garden, use of low stone walls to trap heat...</li> <li>3. Preparation of a trench bed</li> <li>4. Preparation of a seedbed tilth on the trench</li> <li>5. Planting of carrot and beetroot seed</li> <li>6. Distribution of small amounts of carrot and beetroot seed among group members</li> </ol>	<p>* 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</p> <p>* Trench and seedbed preparation went well</p> <p>* Interesting points were raised about frost control</p>	<p><i>Planting of beetroot seed in prepared seedbed</i></p> <p>Further training needs:</p> <ul style="list-style-type: none"> <li>- More on soils, types, characteristics, identification and management</li> </ul>
<p><u>Workshop 3:</u></p> <p><b>Fertility</b></p> <p>(28/07/2006)</p>	<ol style="list-style-type: none"> <li>1. Review of progress with seeds, seedbeds and a look at Sizakele's garden (she was the host member for this training session)</li> <li>2. Water splash, infiltration and organic matter demonstration</li> <li>3. Demonstration of production of liquid manure and provision of orange sacks and some manure to all members present</li> <li>4. Discussion on management of garden beds and kraal manure</li> <li>5. Input on farmer experimentation, and then each member designed their own garden experiments</li> </ol>	<p>* 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.</p> <p>* Liquid manure demonstration was also effective.</p> <p>* Experimentation handouts in isiZulu were provided – people generally found them hard to follow and a lot of explanation was required. They worked in small groups to design experiments</p>	<p><i>Demonstration of making of liquid manure</i></p> <p>Further training needs:</p> <ul style="list-style-type: none"> <li>- A tight follow-up on experimentation will be required</li> <li>- Re-emphasise importance of mulching</li> <li>- No requests from members</li> </ul>

<p><u>Workshop 5:</u></p> <p><b>Pest and disease management</b></p> <p>(28/09/2006)</p>	<p>1. Input on the use of fertilizers by Department of Agriculture extension officer</p> <p>2. Follow up on experimentation and progress</p> <p>3. Inputs (with handouts):</p> <ul style="list-style-type: none"> <li>- natural predators and garden friends</li> <li>- windbreaks</li> <li>- different home remedies for common pests</li> </ul> <p>4. Demonstration of chilli, garlic, soap mixtures for pest control.</p> <p>5. Demonstration of making fruit fly trap from 2l coke bottle and making up a fermented mixture with oranges and sugar.</p> <p>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.</p>	<p>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.</p> <p>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.</p> <p>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.</p>	<p><i>Picture of predators and garden friends used in the exercise.</i></p> <ul style="list-style-type: none"> <li>- It was found that the cuttings provided did not survive; should rather provide plants in future</li> </ul> <p>Napier has grown well in most gardens – but now must be propagated and planted as windbreaks</p> <ul style="list-style-type: none"> <li>- Fruit fly traps were forgotten by most by the time summer arrived; they should be discussed again in the right season</li> </ul> <p>Future training needs:</p> <ul style="list-style-type: none"> <li>- Still need to cover the aspect of diseases, have only dealt with pests</li> </ul>
<p><u>Workshop 6:</u></p> <p><b>Garden layout and design</b></p> <p>(11/10/2006)</p>	<p>1. Report back on experimentation</p> <p>2. Group exercise in water flow in the homestead (with handouts of Matshepo’s system)</p> <p>3. Measuring contours with A-frames and line levels</p> <p>4. Exercise for making ditches for water harvesting in the garden</p>	<p>The water flow exercise worked well as did using photos of Matshepo’s system; high school students had joined us for the day and added many insights</p> <p>Trying to measure contours in the garden were very confusing for all – (we muddled the concepts of straight and level) and was abandoned</p> <p>Getting people to dig ditches in the garden and the whole group to discuss, worked well</p>	<p><i>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)</i></p> <p>Future learning:</p> <ul style="list-style-type: none"> <li>- Need a different context and way to introduce contours and levels.</li> <li>- Also, digging ditches really needs to happen for each individual with advice and support... so home visits are essential.</li> </ul>

<p><u>Workshop</u> 7:</p> <p><b>Irrigation works hop</b></p> <p>(25/10/2006)</p>	<ol style="list-style-type: none"> <li>1. Review of progress to date</li> <li>2. Demonstrations of treadle pump and hand valve pump to extract of water from underground storage</li> <li>3. Demonstration of wetting circles in drip kit area; for discussion on where water goes under the soil</li> <li>4. Discussion and analysis of irrigation practices</li> <li>5. Demonstration of how to build a tower garden</li> </ol>	<ul style="list-style-type: none"> <li>- Large interest in treadle pumps; but people cannot afford to buy them</li> <li>- 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 means a big plant. This became a bit of a "lecture".</li> <li>- 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.</li> </ul>	<p><i>Practical "look-see" where water goes in Thabani Dladla's garden; looked at trenches vs normal planting, where there were ditches etc.</i></p> <p>Future training needs:</p> <ul style="list-style-type: none"> <li>- Need to refine how concepts of soil moisture are introduced</li> <li>- 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)</li> <li>- Can one introduce technologies that people cannot afford without working on ways to bring such technologies to the area?</li> </ul>
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<p><u>Workshop 9:</u></p> <p><b>Evaluation and planning</b></p> <p>(07/02/2007)</p>	<ol style="list-style-type: none"> <li>1. Evaluation: What went well and what did not</li> <li>2. Comments on the learning process</li> <li>3. What we still need to learn</li> <li>4. Planting calendar</li> <li>5. Planning for the future</li> <li>6. Household garden visits</li> <li>7. Learning quizz</li> </ol>	<p>This evaluation followed on an internal exercise the learning groups conducted to think through what they are going to do this year.</p> <p>It flowed nicely as a more in-depth analysis of their learning and what they still wanted to learn.</p> <p>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.</p> <p>They also repeatedly stated their wish for more cross visits to other places to learn from those people.</p> <p>Home visits to each learning group member would be appreciated. An initial list was compiled, to see those who facilitators have not yet visited.</p> <p>The quizz worked VERY well, was fun and gave us a very good idea of what people knew!!</p>	<p>Members appreciated the process of going to peoples' homes and doing practical training.</p> <p>Ditches and pitbeds, 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.</p> <p>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.</p> <p>Future learning needs from the group:</p> <ul style="list-style-type: none"> <li>➤ A comparison between organic and conventional methods</li> <li>➤ English literacy</li> <li>➤ Computer training</li> <li>➤ Keeping traditional chickens</li> <li>➤ Dealing with blight on tomatoes</li> <li>➤ How to write funding proposals</li> <li>➤ Use of fertilizers and pesticides in gardens</li> </ul> <p>Mostly members were now also wanting "things", mentioning items such as fencing, the underground tanks, tools, materials for tower gardens, seed and seedlings.</p>
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Homestead visits were conducted in-between the workshops and one day was devoted to the delivery of fruit trees and demonstration of fruit tree planting. Construction of a tower garden was also done on a separate day.

Further homestead visits will be conducted over a further 2-3 month period and a final report on uptake of innovations/technologies will be put together along with a finalised, reviewed curriculum for the training.

### **4.3 Overall learnings for the household training process and content**

The group learning events held at people's homesteads worked well, and is an integral component of a more people-centred learning approach.

The focus on practical demonstrations is essential.

Experimentation carried out by learning group members was a strong component of their learning and eventual uptake of the new ideas.

Members really appreciated cross visits to other areas and communities. These visits need to be well managed, to ensure that learning is incorporated into people's systems once they get home.

The provision of fruit trees for sale worked well, and was appreciated, as members were very keen to grow fruit trees, but have always battled with access to good quality, affordable trees.

The focus on provision of seed, and seed production by the members themselves, is an important element for longer term sustainability and continuity of gardening efforts.

The introduction of intensified techniques such as trenches and run-on ditches was appreciated and well accepted by those that have tried it out.

Although handouts in isiZulu were prepared for the first three workshops, it became evident that people were not using them, nor found them very useful, and thus the provision of handouts was discontinued.

Attention needs to be given to introducing ideas that people can use immediately, as they forget the details of an idea over time. Thus, pruning of fruit trees needs to be introduced in winter, while making of fruit fly traps needs to be done in mid-summer. This has serious implications for how training is set up.

Having local community facilitators in the area that can do home visits and generally gather people's conceptions, issues and learnings is very useful and helps to "cement" quite a lot of the learning for individuals.

A budget is required for the supply of materials for the practical demonstrations. As a general rule, whenever something new is introduced, the materials ought to be provided to learner members; rather than expecting them to take the risk. Thereafter they can be expected to supply their own. For instance, seed of a new type of plant is provided once.

In terms of seed though, a number of people did not manage to grow the seed out first time (especially granadilla, garlic chives and others that are slightly tricky to germinate and take a while to come up). Therefore, in follow-up home visits they could be supplied with a further small stock, or a seedling or two.

Facilitators of these types of processes need to have a solid understanding both of group process, individual learning and gardening or agricultural content.

## 5. Facilitator training needs and learning content

### 5.1 Introduction

These training needs were designed asking the question “What will facilitators need to know and need to be able to do to conduct the householder learning process for intensive homestead agriculture?” as outlined in Chapter 4 above.

#### AREAS/FOCUS OF TRAINING

- Efficiency in water management: Including run-on RWH and storage tanks
- Efficiency in soil management: Intensive, organic methods and designs

Here we have taken into account generic facilitation and development skills as well as the specific skills and attitudes required for a focus on intensive homestead agriculture. It is assumed that articulation with formal training on NQF level 5 is desired, which would give facilitators formal training opportunities in an accredited environment.

Institutionalisation of this aspect of training would thus be essential. Also, more generic development related training already exists at a number of Universities (including UNISA and UKZN), meaning that this specific focus area could be incorporated or attached to those qualifications, rather than re-inventing the wheel.

### 5.2 Who are the facilitators?

<b>WRC FACILITATORS' LEARNING TOOLKIT (NQF levels 5-6) Community facilitators</b>			
<b>HEALTH</b>	<b>ABET</b>	<b>LOCAL GOV</b>	<b>AGRIC EXT</b>
Community Health Workers, Community Nutrition Workers, Home Based Carers	ABET Facilitators	Community Development Workers	Agric extension officers and assistants
<b>Any other facilitators working in this field employed by NGOs, research institutions, other government departments...</b>			

A joint consideration between various stakeholders at the universities and other organisations and the WRC research team, is that a generic toolkit of information and learning that could suit a range of development facilitators, would be appropriate. The WRC Facilitators' Learning Toolkit is meant to fulfill this role. Facilitators are employed by Government Departments, Local Government (Municipalities), non-profit organisations (including NGOs and CBOs) and research institutions.

Most facilitators working in a rural context may at some point be expected to work in the area of food production, be they in the health, water, sanitation, agriculture, environment or local economic development sectors.

### 5.3 Learning tools in the WRC Facilitators' Learning Toolkit

The WRC Facilitators' Learning Toolkit (the generic training package) includes information which is laid out and presented as a range of learning tools<sup>4</sup>:

#### **Learning tools in the WRC Facilitators' Learning Toolkit** (Resource Materials)

•Research findings, case studies, community quotes etc.



•Survey and information gathering techniques, workshopping processes for facilitators (community participation, facilitation)



•Information/content (how to, what to, when to)



•Materials/ learning aids for community members



•Self-study exercises for facilitators and self-assessment exercises of their skill



♦ Activities: for community members and facilitators

•Module descriptions and summaries of main points

<sup>4</sup> The SoulCity publication on water supply and sanitation practice, called "Breaking the Rules", has provided the WRC Research Team with useful ideas in this regard.

## 5.4 WRC Facilitators' Learning Toolkit: Contents

The learning areas for the WRC Facilitators' Learning Toolkit has been divided into eight units, which

- firstly, follows the same logic as with the household learning content areas; and
- secondly, provides sufficient structure to eventually allow for accreditation.

The units are as follows:

- Intensive Family Food Production - WRC Facilitators' Learning Toolkit Contents	
UNIT	STATUS
Unit 1: Introduction to water and food production management options	First draft
Unit 2: Participatory planning and design of water management in a household farming system	First draft
Unit 3: Nutrition & Health	To be developed
Unit 4: Fertility	First draft
Unit 5: Irrigation	First draft
Unit 6: Storage	To be developed
Unit 7: Diversified Production	To be developed
Unit 8: Economic incentives	To be developed
Experimentation and monitoring is woven into the material throughout units 1-8.	

For those units that have already been designed and put together in draft form, the contents pages are presented below.

For units still to be developed, an overview of potential content is shown.

Next, in section 5.5, an example is given of a 'crash course' for facilitators, run for the CINDI network.

**Unit 1: Introduction to water and food production management options**

Introduction  
Aims  
Learning Outcomes

**1. The Role of Water: A General Introduction**

Water Scarcity  
Policy Goals

**2. The Rural Context**

Introduction  
Where are the Homesteads?  
Rural Population  
Agriculture and Income

**3. Farming Systems**

Elements of sustainability  
Three Approaches to Farming  
LEISA Principles

**4. A Homestead as a Farming System**

Systems Thinking  
SWOT Analysis

**Unit 3: Health and Nutrition**

Introduction  
Aims  
Learning Outcomes

**1. Food habits and preferences**

The theory and practice of how to work with these in a participatory manner

**2. Food groups**

Basic understanding of nutrition, the present debates and useful food groups, to use in community discussion

**3. Food as medicine**

Introduction of how this concept can be used in community

**4. Food security**

The present debates and theoretical positions, interventions that make sense and food security through intensified production

**5. Diversification**

Diversification of production and of livelihoods to ensure social and environmental continuity and sustainability; concepts and examples

**Unit 2: Participatory planning and design of water management in a household farming system**

Introduction  
Aims  
Learning Outcomes

**1. Situation analysis**

Introduction  
The Sustainable Livelihoods Approach (SLA)  
Doing a situation analysis  
Some participatory techniques

**2. War on Hunger through mind mobilisation and water for food**

**2.1 Mind Mobilisation and Visioning**

Introduction  
Why Is Mind Mobilisation Necessary?  
How Does Mind Mobilisation Work?  
Overview of Community and Individual Facilitation Processes For Mind Mobilisation

**2.2 Village Level Facilitation Processes**

Introducing The Idea To The Community

**2.3 Individual Mind Mobilisation Processes**

Mind Mobilisation: Introduction  
Household Present Situation Analysis  
Visioning ('Helicopter Planning')  
Practical Demonstration: Deep Trenching  
Seed/Seedling Sharing

**2.4 Further Follow-Up Trainings**

Garden Layout Design  
Family Nutrition  
Planting Calendar  
Harvesting Calendar With Harvest Estimates  
Monitoring Tools

**2.5 Summary Of Principles For Mind Mobilisation**

**3. Physical Planning aspects**

Location and maps  
Natural resources  
Sketch plan of the immediate vicinity of the plot and the plot itself  
Measuring contours  
Garden layout: water flow, aspect, topography, soils, bed design, irrigation  
Estimating water requirements

#### **Unit 4: Fertility - optimising efficiency of use of soil and water resources**

Introduction  
Aims  
Learning Outcomes

##### **1. Understanding soils**

Introduction  
Soil Texture and Soil Components  
Soil Structure  
The Living Soil  
How To Tell Your Soil Type  
Soil Structure  
Farming Practises Affecting Soil Structure

##### **2. Soil fertility**

Soil Nutrients  
Nitrogen  
Phosphate  
Potassium  
Soil Acidity  
Experimentation  
Soil Biology  
Nutrient Fixing Plants

##### **3. Soil building techniques**

Mulch  
Composting and Liquid Manures  
Manure  
How to Make Compost  
Plant and Animal Liquid Manures  
Using Legumes and Cover Crops  
Introduction to Worm Farms

##### **4. Bed Design**

##### **5. Summary of Principles for Sustainable Soil Management**

#### **Unit 5: Irrigation**

Introduction  
Aims  
Learning Outcomes

##### **1. Obtaining Water from different Sources**

Rivers, Streams, Springs, Boreholes, Storm Water, Municipal Water, Greywater

##### **2. What is Irrigation?**

##### **3. When and how much to irrigate?**

How do you know how deep the water went?  
How do you know when to irrigate?

##### **4. Irrigation Techniques**

Short Furrow Irrigation, Basin Irrigation, Sprayers, Micro Sprayers, Drippers

##### **5. Livestock watering**

Sheep, Cattle, Goats

#### **Unit 6: Water Storage**

Introduction  
Aims  
Learning Outcomes

##### **1. Natural and Physical Resources Survey**

A transect of contours, sketched over a schematic diagram of the homestead, indicating the likely flow of water

##### **2. Placement of Rainwater Storage Tanks/ Structures**

Position and size; test pits and augers to find out what is under the soil surface

##### **3. Water In and Water Out: Supply and Utilization Options**

Consideration of slope, aspect, run-off sources and quantities, water flow, proposed use, siting of the garden in relation to the storage tank

##### **4. Participatory Negotiation with Householders**

##### **5. Design of Inlets, Outlets and Overflows**

Structural and water flow considerations

##### **6. Case Study**

A case study of Matshepo Khumbane's RWH and water management system, showing where and how water flows.

This explains the ideas behind the layout of furrows to channel run-on into the garden/field,

and the design (positioning and preparation) of garden beds to maximise water holding capacity

## Unit 7: Diversified production

Introduction  
Aims  
Learning Outcomes

### 1. Fertility management plans

Cropping calendars, cover crops, rotation and companion planting

### 2. Natural pest and disease control

Natural predators; sanitation and further companion planting; specific remedies for common pests and diseases

### 3. Wind and frost protection

Why it is important, ways to do this, multipurpose plants

### 4. Seed saving

Growing plants from seed; production of seed; the reasoning of why it is important and how to do it

### 5. Integration of fruit

How to plant fruit trees, different trees, grafting, pruning, growing your own from cuttings and seed

### 6. Small livestock integration

Including chickens, ducks, geese, rabbits and goats into your farming system, ways to look after them that complements your diverse system

### 7. Value adding

Drying, processing, storage at home level. Using solar energy for frying and cooking

## Unit 8: Economic incentives

Introduction  
Aims  
Learning Outcomes

### 1. Markets

Supply  
Demand  
Locality  
Pricing and Quality

### 2. Niches

Going to the market , or bringing the market to you  
Making the most of what you have

### 3. Budgets

Doing your sums...

## 5.5 Example of a “crash course” for facilitators (CINDI)

Below is an example of a short three-day training course run for the CINDI Network (Children in Distress). They requested a training and mentoring programme for their facilitators in sustainable food production. Twelve facilitators from a range of NGOs and CBOs attended.

The course was constructed using the brief by CINDI and the requests from participants (training needs), by mixing and matching bits of content and process from the WRC Facilitators’ Learning Toolkit to suit the specific interest and time constraints.

The general sequencing for any community process was again used:

- ♦ Discuss what we know and are good at already, together with what we still want to learn (RPL and training needs)
- ♦ Focus on household nutrition and what our role is, what can we grow, what can we promote (nutrition gap analysis)
- ♦ Look at options to diversify and integrate our household farming systems to include efficient, diverse soil and water management options.
- ♦ Then, get into content and detail of specific gardening and rainwater harvesting practises in a practical environment!

The facilitators’ course was thus structured as a one-day classroom based session and two days practical session on a working farm with many low external input farming (LEISA) and rainwater harvesting examples. Follow up visits to each project would be done.

The training schedule consisted of the following sessions:

- Setting the scene
- Intensive food gardening techniques

### Setting the scene (2 November 2006)

Time	Activity	Resources
10:00- 11.00am	Introductions and Present situations: * Name and experience in gardening * Role in your organization * Critical issues	Newsprint and pens Individual exercise and report back
11.10-12.00pm	Johari’s window for determining training needs, which is a participatory method to discuss what local people know, what outsiders know, what both know and what neither knows.	Group work and plenary Newsprint and pens
12.00-1.30pm	Household nutrition focus. An introduction to organic production basics. Input on cultivation, nutrient availability, and cooking and preparation of traditional greens. A nutrition facilitation process that can be used with groups/families.	Group work PP presentation Manual Extra handouts
1.30 – 2.00pm	LUNCH	
2.00 – 3.15pm	Rainwater harvesting input and discussion of intensive gardening and water management techniques to try	Group work PP presentation
3.15-3.30pm	Evaluation, logistics and closure	

### Intensive food gardening techniques (9,10 November 2006)

A learning needs summary was prepared from information provided by the participants (listed in order of priority). From the listing below it is possible to see that for many of the participating facilitators their problems were more around immediate infrastructural and resource issues, than a felt need for learning. This is typical and needs to be worked with in a constructive manner throughout learning processes. Facilitators need to be prepared to offer assistance and advice around how participants may gain access to resources such as financing, fencing and water. The listing follows below, with the number of times an issue was mentioned shown in (brackets):

Soil fertility (4), lack of fencing (3), access to water (2), correct planting methods (2), crop rotation (2), insect damage (2), soil types/difficult soils (2), animal damage, lack of tools and seed, proper irrigation, costing of produce, lack of money (1)

The learning agenda and practicals for the two-day on-farm learning sessions covered a range of topics, including: soil types, characteristics and management; measuring contours; making fertility trenches; crop rotation; intercropping and companion planting; legumes and cover crops; planting calendars; pest repellent brews and liquid manures.

The following practical session on soil fertility was presented using learning material from the WRC Facilitators' Learning Toolkit:

## A FOCUS ON SOILS

Here we can use the two exercises of the Bottle test and the Sausage test to focus a discussion around

- Soil types – sand, silt and clay
- Characteristics of each type of soil
- And management options.

### **Facilitation Process**

1. We will usually carry out these exercises in a real situation, a garden or field where participants can also get an idea of what is happening there. They are asked to observe what is happening with the soil and crops in the garden. These common sense observations will be added to the information we get from the two soil tests used.

In this case we visited Ecabazini Zulu Homestead (Albert Falls Dam area outside Pietermaritzburg). During a tour of the garden each small group of participants collected a sample of soil that looked interesting to them. *(The participants are divided into groups of around 3-6 people to ensure good participation within their sub-groups)*

2. After looking at the gardens/ fields and collecting a sample, sub-groups will set up their bottle and sausage tests. They are given the hand outs and are asked to read through the information and do the tests. The facilitator assists where needed. The soil is poured into a clear bottle with about 1 liter of water, shaken and then put in a place where it can stand without being disturbed until the following day.

*Above; Lindani. Zanele and Joyce from Thandanani Children's Foundation are preparing their bottle tests.*

3. Once three bottles have been prepared the soil sausage tests are done for the same soils. These will give an immediate indication of the percentage of clay in the soil and the soil type.



## **6. Trainer-of-Trainer training needs**

### **6.1 Introduction**

Given that our focus is the community householder and that the aim is to improve homestead farming systems and water management through facilitated processes, there is by inference a need also to look at who would train the facilitators and what these “Trainers-of-Trainers” may need to know and be able to do.

Here the intention is not to set up a curriculum or training outline, but rather to point towards skills, attitudes and knowledge that Trainers-of-Trainers would need.

### **6.2 Who are the Trainers-of-Trainers?**

The set of skills, attitudes and knowledge required to prepare facilitators for this role, are not often found in a single individual. It is hard to find people who are both excellent facilitators and have personal experience and knowledge of gardening.

It is recommended that, in a similar process as for existing elective courses, a range of specialists are called on to help prepare facilitators for this role.

### **6.3 What Trainers-of-Trainers need to know**

Overall they need a strong understanding and experience in participatory processes as well as in sustainable farming techniques and practices.

### **6.4 Example of lessons learnt from a Trainer-of-Trainers’ viewpoint**

The box below presents a summary of learnings from the viewpoint of a Trainer of Trainers from the presentation of the fertility content to both farmer learning groups at Potshini and the facilitators in the course run for CINDI.

## Summary of learnings for Fertility section

### *Learnings with regard to using the developed materials (WM Unit 3; Fertility)*

#### Farmer Learning Groups

##### OUTLINE OF PROCESS:

- Discussion about their soils
  - Start the discussion with a walk about in the garden and surrounding area; dividing participants into groups of maximum 10 people. Ask each group to collect a sample of soil that looks interesting to them (about 2 –3 handfuls)
  - Give the handouts on the bottle test and set this up. Discuss what they was as a way of evaluating what they know
  - Then do the sausage test, and give the handout on that, so that they can visualise the sand, silt and clay content in their soil sample.
  - Discuss the characteristics according to the sausage test and the management implications for the soil.
  - Combine this with a discussion on organic matter; manure, compost and mulch.
  - Then do a demonstration on infiltration, splash and incorporation of organic matter
  - Follow this with an input on farmer experimentation and let each person undertake to do an experiment at their homes. They design their experiment at the workshop making clear statements about what they want to test and why. How they will test this and how they will observe and measure their results.
  - The experiments are followed up at the next workshop when individuals report back on what they have done and observed and also during home visits to individuals.

##### OUTCOMES:

In Potshini this exercise did not work very well, even though it was designed in this way as it has worked well previously. About 90% of the group had never considered or thought about their soil type. They did not know that there were different kinds of soil and even the few that did and could describe the colour and depth of their soils could not describe their soil in terms of sand, silt and clay. A few of the participants could not understand the difference between sand, silt and clay even after an explanation was given.

There are also three very different types of soil in the area, which confused some participants as the soil at the homestead where the workshop was held was quite different to theirs

In addition the bottle test takes time; as one needs to check after a few hours and then again after about 24 hrs. If one is running a one day workshop as in this case, it provides some logistical complications.

In terms of organic matter, participants were only really familiar with their traditional practise in the area; that being of hoeing to a depth of about 15 cm and then adding some manure in the planting holes of the vegetable seedlings only.

The infiltration, splash and organic matter demonstration was well accepted and managed to clearly bring across the points. The discussion on addition of straw or grass to kraals to increase the value of the manure was well received. Following this up with individuals designing experiments (around mulch, digging over, incorporation of manure/compost and adding straw to manure in kraals) worked well.

##### RECOMMENDATIONS FOR FURTHER TRAINING

- Take sample of all the major soil types in the area, not just the homestead where the workshop



## **7. Institutionalisation of facilitator training**

### **7.1 Introduction**

The participatory development of training materials for water management in homestead farming systems assumes a target group of community householders. As these people often have a low level of literacy and education and a low level of command of English, it is assumed also that their learning will be facilitated in some way. This facilitation may take place through community development facilitators employed through the Government or non profit sectors.

The target group for the training materials will therefore primarily be community development facilitators. As such, one avenue for the development of training materials is to embed the learning in a formal course or learning programme. NQF level 5 is considered an appropriate entrance level for such a learning programme. There is an opportunity at the University of KwaZulu-Natal to offer this learning as an elective module within an existing qualification known as the Certificate in Education (Participatory Development) (CEPD). This will have the advantage of providing a broader development context for this module, which at the same time provides access to Higher Education.

### **7.2 Introduction to the CEPD**

The CEPD is a two year part time mixed mode (contact and distance education) qualification offered by the Centre for Adult Education, within the School of Adult and Higher Education at the University of Kwa-Zulu Natal.

The programme targets adults experienced and currently involved in community development, who are motivated to learn and study further, and who have at least a matric certificate (STD 10 or Grade 12). Preference is given to applicants from rural and disadvantaged areas. (If applicable) Recognition of prior learning procedures are used for access to this programme. The access processes include a placement test to assess development experience, and English and numerical proficiency. This provides the basis for a coherent case to the University Senate for the admission of nonmatriculants.

The qualification (128 credits) is a foundation course and provides entry into the Diploma in Education and is an access qualification to Bachelor in Education, Bachelor in Social Science and Bachelor in Community Development. Modules offered for this qualification can be taken by students towards other qualifications in this and other higher education institutions provided that all the prerequisite requirements are met. Once the qualification has been upgraded to a Diploma, which is to happen in 2006, articulation options will increase and become easier.

The course consists of a first year curriculum that covers generic core skills in participatory development facilitation (Lifelong Learning, Introduction to Adult education, Introduction to Development and Introduction to Project Management). In the second year students choose from a range of electives that focus their development service area and also undergo a service learning component (Development in Practice). Presently they can choose from the following; Entrepreneurship, Adult Basic Education and training, Peace Education (Conflict Transformation), Leadership and Management of NGO's, Local government, Economic Literacy and Landcare.

Students presently attend class for 1 full day per week and complete self study and assignments at home. Week long blocks will be considered if there is a demand.

#### **7.2.1 An elective module in Water Management in Homestead Farming Systems**

The suggestion of offering a module in Water Management in Homestead Farming Systems as one of the electives of this course is being considered. It is interesting and potentially useful for a number of reasons including that:

It will provide a training opportunity for community development workers focussing on households and concentrating on water and agricultural related issues. As such it will be ideal for the Municipal Community Development Facilitators, the Community Health Workers and facilitators/ field workers from NPOs (Non Profit Organisations) and CBOs (Community Based Organisations)

It will provide an institutional focus for training materials developed through the Water Research Commission supported research initiative “ *Participatory Development of Training Material for Agricultural Water Use in Homestead Farming Systems for Improved Livelihoods*” and

It will provide a broader choice of current issue electives to CEPD participants.

It can provide an opportunity for **community level capacity building** for the implementation of the **DWAF pro-poor rainwater harvesting household subsidy**

### **7.3 Introduction to UNISA process**

A number of discussions with Mrs FM Ferreira (Coordinator of Discipline Human Ecology, Department of Agriculture, Animal Health and Human Ecology, School of

Agriculture and Life Sciences, UNISA) and her team were conducted. A collaborative process in the design of a generic package for facilitators was agreed upon.

This collaborative process provides the WRC team the opportunity to contribute towards general capacity building of postgraduate students as well as the more specific goals of providing opportunities for filling gaps in the research and curriculum development process as it stands. Specifically relevant here are issues around nutrition, food processing and value adding. This work can also contribute significant and relevant case studies to the materials being developed.

For UNISA this provides an opportunity to work in areas where the emphasis and interventions are at homestead level and focused on improved livelihoods through homestead farming and water management. The water management and water harvesting in particular will add value to their present research processes.

#### **7.3.1 Research Approach**

We are looking at providing an integrated set of themes that can be explored by a number of students in different communities. There are aspects that can be monitored by students in an ongoing way, jointly with community members. These will be set out so that they are not too technical and can be monitored by students with household members, or even by household members themselves with support from the students.

Monitoring aspects that could be included:

- Household decisions and availability and access to resources
- Water management for productive use
- Crop production in terms of quantity and consumption( kgs’ produced, kgs consumed, kgs sold/ given away/exchanged
- Crop production in terms of nutrient contribution
- Irrigation; practices and efficiency
- Food processing ; also related to use of water,...

Monitoring of all these aspects across different communities will be able to provide the research and curriculum development teams with qualitative data to provide comparative comment.

Below is a summary of research gaps and themes explored

## GAPS FOR RESEARCH

- To inform content and learning process of generic package
- To serve as case studies within the package

## POTENTIAL RESEARCH THEMES

- Mind Mobilization; as a social and extension process – strategies and diffusion
- Nutrition; food preference and socio-cultural aspects for different groupings, case studies, school nutrition processes
- Technical evaluation of “trench bed system” in terms of fertility and water management
- Choice of crops for diversification; indigenous crop mixes
- Fodder and nutrition for livestock
- Grey water
- .....