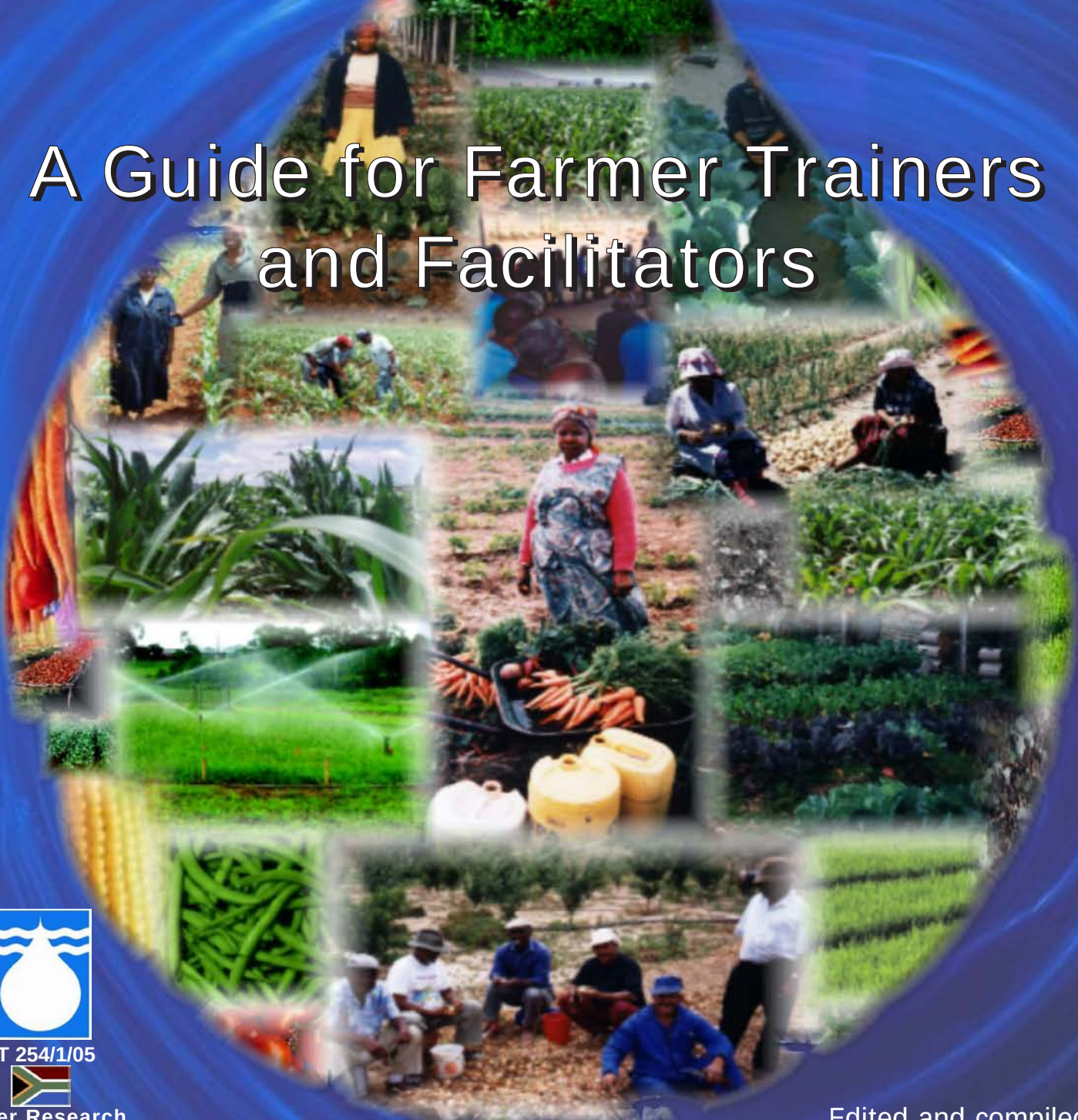
Revitalisation of Smallholder Rainfed and Irrigated Agriculture

A Guide for Farmer Trainers and Facilitators



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Water Research Commission

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Revitalisation of Smallholder Rainfed and Irrigated Agriculture in South Africa

A Guide for Trainers and Facilitators

Prepared for the
Water Research Commission
by:

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Dedicated to Johann Adendorff

In appreciation of his devoted sacrifice and service to Agricultural Development, to uplift, to empower and to better the lives of smallholder farmers in South Africa.

"Nobody made a greater mistake
than he who did nothing
because he could only do a little".

- Edmund Burke

"Learning
is finding out
what you already know.
Doing is demonstrating that you know it.
Teaching is reminding others
that they know just as well as you.

You are all learners,
doers, teachers".

- *Richard Bach, Illusions*

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Executive Summary

Background to this Water Research Commission research project

The Limpopo Province government has identified agriculture, tourism and mining as the priority areas for developing the province's economy. Following major investment in the past few years in mining and tourism, there is a new focus now on agriculture because of its potential for job creation among the poorest sectors of society, many of whom already have access to agricultural resources.

The province has well developed but currently under-utilised smallholder irrigation infrastructure, which could play a central role in the revitalisation of the local economy in the rural areas of the province. Limpopo Province is one of the poorest areas in South Africa and one of the priority nodes earmarked for investment through the Integrated Sustainable Rural Development (ISRD) programme. Irrigation potential has been identified in eleven of the first thirteen nodes earmarked countrywide for implementation of the ISRD.

The National Guidelines on Agricultural Water Use describes government policy to transfer the management of smallholder irrigation schemes to farmers and to broaden opportunities for multiple uses of agricultural water to rural communities. The Limpopo Department of Agriculture (LDA) has taken the lead in implementation of this policy by launching a major programme for the Revitalisation of Smallholder Irrigation Schemes (RESIS). This is a provincial and national flagship programme to combat poverty and joblessness in the rural areas. LDA was concerned that they have insufficient capacity to expand from eight pilot schemes to approximately 126 irrigation schemes in Limpopo Province and a large sector of small-scale irrigation production on community and home food gardens currently without access to this type of training and capacity building.

In view of this, LDA requested the International Water Management Institute (IWMI) to develop a proposal for a project to broaden smallholder irrigation farmers' access to this training and capacity building which have been ongoing in the province for the past few years and is now expanded throughout the province within the current RESIS programme.

The Water Research Commission Guidelines and this research project

The WRC Guidelines "Developing Sustainable Small-Scale Farmer Irrigation in Poor Rural Communities: Guidelines and Checklists for Trainers and Development Facilitators" (WRC Report No. 774/1/00) is directly relevant to the implementation of the ISRD and the RESIS programme in Limpopo Province and forms the basis of this WRC research project.

Through this research, the WRC Guidelines were tested and expanded as a means to increase the accessibility of meaningful training and capacity building where small-scale irrigation forms part of integrated sustainable rural development initiatives. The research included the development of training material and training of Farmer Trainers. Further, it was tested how training can be provided through the Agricultural Colleges in the Province. This process is viewed as a pilot exercise for national expansion and aligns to the development of the National Strategy for Education and Training for Agriculture and Rural Development.

Research implementation

The Limpopo Farmer Training Task Team was established to provide guidance and direction to this joint LDA/WRC initiative. This was an action research project, aimed at transferring

practical skills to previously disadvantaged individuals, institutions and communities. Resource poor farmers, youth and women's groups are the primary target groups for enhanced skills in agricultural production, water use and management, business and entrepreneurial skills.

Smallholder farmers currently have limited access to training. Furthermore, formally available training is focused almost exclusively on scaled-down versions of high-cost, high-risk commercial production practices, which are especially inappropriate to food insecure households. Much of the current training also requires trainees to be away from their homes for periods ranging between three weeks and several months. This is impossible for many - especially so for the women responsible for food insecure households. Most of the farmer training in the Limpopo RESIS programme is offered on-farm.

The approach of "development through needs-based training", as developed by Johann Adendorff (further referred to as the Adendorff Approach), was first applied successfully in the training of approximately 7 000 poverty-stricken dry land maize farmers in Phokoane in the Nebo district of the Limpopo Province over a period of five years. Through appropriate training, organisation and improved self-confidence, farmers considerably improved their yields from an average of 3,5 bags per typical 1,2 hectare holding, to a new average of 40 bags. The "development through needs-based training" approach has since been used in several dry land areas in South Africa and is currently being used in poor rural communities with access to irrigation schemes. In particular, the Limpopo RESIS programme provided a valuable opportunity to implement and test Adendorff's training and the WRC Guidelines.

Simultaneously, the information and data gathered in this WRC project on Adendorff's and other training used in the RESIS programme is being used to develop further training courses and training modules. These curricula are now being institutionalised at the two Agricultural Colleges in the Limpopo Province, Tompi Seleka (Marble Hall) and Madzivhandila (Thohoyandou). The training material has to be registered with the Primary and Secondary Agriculture Sector Education and Training Authority (AgriSETA).

Step 1: Unit Standard Gap Analysis

AgriSETA supplied the project team with copies of all the existing registered Unit Standards within the AgriSETA. From this information, gaps could be identified of unit standards that were needed but not yet developed.

Step 2: Development of new Unit Standards

A Unit Standards Writing Team (WRC-OBE Development Team, now called the "Limpopo Farmer Training Team") was formed to develop the Specific Outcomes and Assessment Criteria on which the Unit Standards would be based. This team was comprised of a wide representation of people including representatives of the Limpopo Province's two Agricultural Colleges, Madzivhandila and Tompi Seleka, Extension Officers of various districts in the Province and leading Smallholder Farmers.

The Specific Outcomes and Assessment Criteria developed by the team will be given to the Standards Generating Body, who will now be responsible for completion of the Unit Standards.

Step 3: Development of the Facilitators' Guide

In addition to developing Specific Outcomes and Assessment Criteria, the Limpopo Farmer Training Team compiled a Facilitators' Guide, which is being used as training manual for

trainers of crop production methods to emerging farmers, in the Limpopo Province. The Facilitators' Guide forms part of this report.

The Adendorff training material on Maize Production was thus incorporated into the Facilitators' Guide on Farmer Training, as well as Cotton Production training material, Basic Scheme Management training material and Water Management training material. Further Outcomes Based training modules being developed by the Limpopo Farmer Training Team will over time also be incorporated into the Facilitator's Guide, which is the main product of this WRC research project.

Step 4: Training of Farmer Trainers whilst training Farmers

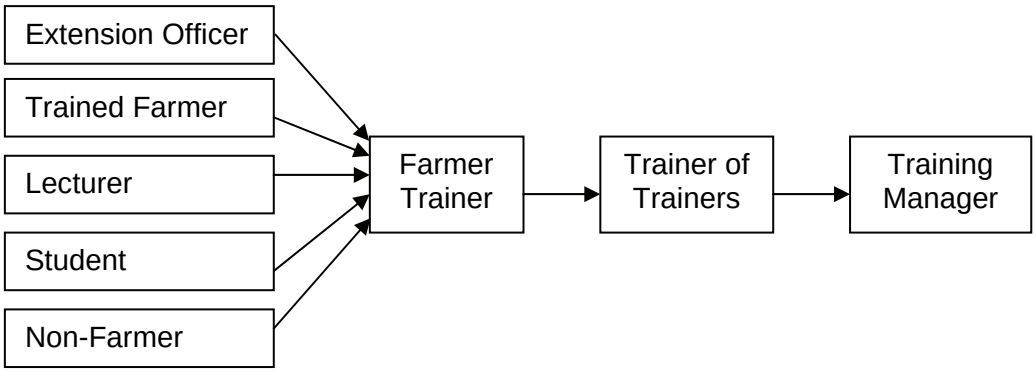
After developing the Unit Standards, the Limpopo Farmer Training Team presented the training to farmers in Limpopo over a six-month period, under the guidance and supervision of Johann Adendorff. Thus, a methodology for training-of-farmer-trainers was developed and tested. This team of farmer trainers is now known as the Limpopo Farmer Training Team and is fully deployed to offer the training in the expanded RESIS programme.

The people who were capacitated during this project (which was in essence a capacity building project) are:

•Lufuno Muthaphuli	**Madzivhandila College**
•Ndivhaleni Phillip Rammela	**Madzivhandila College**
•Philiseni Charles Khorommbi	**Madzivhandila College**
•Kenneth Eli Moabelo	**Tompi Seleka College**
•Mafise Amos Montjane	**Tompi Seleka College**
•Matsoba Sandile Jethro Nowatha	**Bohlabela District**
•Tshifularo (TJ) Kutama	**Capesthorn Irrigation Scheme**
•David Ngobeni	**New Forest Irrigation Scheme**
•Kenny Mukwevhu	**Nzhelele District**
•Robert Ndlovu	**Bohlabela District**

The following sources of potential Farmer trainers and a possible career path was identified:

Diagram 1: Potential Farmer Trainers and Career Path



Farmer Training on crop production the RESIS Programme was previously conducted primarily by Johann Adendorff and more recently also by two Extension Officers, one from Vhembe and one from Bohlabela, who have had remarkable results. Through the Farmer Training Initiative as supported by the WRC project, the number of Farmer Trainers has now increased to ten, namely two lecturers from Tompi Seleka, three lecturers from Madzivhandila, two Extension Officers, two leading irrigation farmers and Johann Adendorff. This Limpopo Farmer Training Team, based at the Agricultural Colleges, are playing a key role in the implementation of the RESIS programme, and are using and expanding the

Facilitators Guide. Additional staff will be trained as Farmer Trainers throughout the implementation of the RESIS programme.
In the process described above, in-house capacity was created in the Limpopo Department of Agriculture to populate the Smallholder Agricultural Training Needs Matrix developed during this WRC research project (see Table 1.2 below).

Table 1.2: Spectrum of smallholder agriculture – categories of training needs

		Increasing input costs and risk			
		Homestead yards	**Grazing / livestock watering**	**Dry land fields**	**Irrigated fields**
Number of households (hh) in former homelands with current access to agricultural resources		*2 400 000 hh (100%)*	*1 700 000 hh (70%)*	*1 700 000 hh (70%)*	*56 000 hh (2.5%)*
Total hectares currently under control of these households		*200 000 ha*	*12 000 000 h a*	*2 000 000 ha*	*100 000 ha*
Development path	**C**	Define training needs	Define training needs	Define training needs	Define training needs
	B	Define training needs	Define training needs	Define training needs	Define training needs
	A	Define training needs	Define training needs	Define training needs	Define training needs

This table gives a useful perspective on the range of farmer training needs for which training material needs to be developed. In practice, each training programme should be preceded by a thorough training needs assessment to confirm and prioritise the specific needs of that target group. The 'pre-development survey' at the start of each new project in the RESIS Programme serves this purpose.

Educational and Skills Profile of Rural Dwellers in the Limpopo Province

In a sample group of 518 farmers studied by the Provincial Representative Officers Mmbengeni and Mokoka (2002) of the National Strategy for Education and Training for Agriculture and Rural Development it was found that 47% of the Farmers were older than 50 years and the majority of farmers (53%) were female. It was indicated that this percentage will be even higher for all persons active in the agricultural sector and could be between 60% and 70 %.

The participating group was quite diverse in terms of their level of schooling. 16% of the sample group have received no schooling at all. The latter group will thus require specific inputs of an ABET nature before enrolment for higher levels of learning. It further implies that learning for this group should preferably be of a practical nature. Written theoretical material should be kept to an absolute minimum.

1. No formal schooling =16%
2. Grade 0 – Grade 5 =46%
3. Grade 6 – Grade 10 =20%
4. Grade 11 – Grade 12 =15%
5. Tertiary level =3%

} 82% = below Further Education and Training (FET) level.

Regarding developmental areas (areas perceived as having good potential and thus warranting specific developmental programmes) the following were highlighted as priorities:

- Animal production
- Poultry production
- Crop production
- Horticulture
- Dress making (to supplement income)

Regarding training needs and requirements the following were highlighted as priorities:

- Production training
- Animal husbandry courses
- Crop production courses
- Horticultural production courses
- Management and Business training
- Business and entrepreneurial skills
- Farm management skills

From the above it was evident that farmers are well aware of their shortcomings in terms of agricultural production. They also understand the need for economic viability and sustainable farming operations. Some participants indicated that during the dry season, agricultural activities are almost impossible. They therefore expressed a need for skills training related to dress making and other income generating projects to enable them to survive during those periods.

The mere fact that farmers are aware of these shortfalls is perceived as extremely positive since it reflects an understanding that farming should be undertaken as a business venture and that technical, management and economic issues are of critical importance to ensure sustainable farming initiatives.

Agricultural Training Needs of Rural Dwellers in the Limpopo Province

To identify appropriate training needs, it is necessary to understand the farmers' objectives, and hence, that training needs differ between the food insecure household, subsistence and emerging farmers, and commercial, profitable small-scale farmers. The changing objectives and corresponding training needs are summarised in Table 2.1.

Table 2.1: Changing objectives of learners along the development path

Position on Growth Path	*Learner Objective*	**Learning Outcome**
A – Food-insecure household	***Food security***	Food security through own production
B – Subsistence- & emerging farmer	***Income generation and self- development***	Profitable small-scale farmer
C – Profitable commercial small-scale farmer	***Improved profit, Simplified management and economic growth***	Efficient and knowledgeable commercial farmer

In pursuit of the most reliable results from the training needs assessment, the WRC team believed that a training needs assessment would be best conducted by training specialists (NCWSTI), and agriculturists as content experts. Meetings were held with irrigation scheme farmers and homestead/dryland farmers at both Mphaila and Kutama communities. The identified training needs correlated well with the findings of Mbengeni and Mokoka (2002).

Table 2.2: Categorisation of identified training needs

Homestead yards			Dryland fields	Irrigated fields
B	**Subsistence and emerging farmers**	Soil preparation Seed selection Fertilization Weed control Winter cropping Marketing Use of chemicals	Soil preparation Seed selection Weed control Intercropping Crop diversification Soil sampling Storage of farm produce Applicability of indigenous knowledge Use of chemicals/fertilizers Water harvesting and management	Production plan Canal construction Soil conservation Irrigation scheduling Using pesticides and herbicides Fertilization Erecting/repairing fence Water management Weed control Marketing Irrigation pipes repair& maintenance Farm produce grading
A	**Food insecure households**	Crop production Soil preparation Harvesting Storage Marketing Water harvesting Broiler production Entrepreneurship (how to start community projects)	Maize production Water harvesting and management Soil conservation Fence making and Erecting fence Fertilization	Basic management Crop production canal construction Erecting fence Water management Marketing

Unit Standards required for Maize Production, Cotton Production, Scheme Management and Water Management Training under the RESIS Programme:

Within the Maize Production training modules, the following six (6) Unit Standards were identified as “gaps” or Unit Standards to be submitted to the SGB (Standards Generating Body) for development and subsequent registration thereof with the Primary Agriculture Sector Education and Training Authority (AgriSETA):

- Demonstrate an understanding of establishing a maize crop for small scale farmers
- Demonstrate an understanding of the control of witch weed or striga hermonthica in a maize crop
- Demonstrate an understanding of soil pH and its control measures in maize crops
- Demonstrate an understanding of the utilisation of natural resources
- Demonstrate an understanding of project management structures
- Demonstrate an understanding of the pre-development survey

Policy on Farmer Training in the Limpopo Province

The Agricultural Colleges in the Limpopo Province has taken a basic decision to provide training at the Further Education and Training (FET – Grade 9-12) level, rather than the Higher Education (HE) level (the level at which the Technikons and Universities provide services). Further, the Agricultural Colleges have decided to shift their focus towards the training of smallholder farmers, whereas before, they trained extension staff only. One of the

challenges associated with offering farmer training is to further develop the Agricultural Colleges' capacity (skills and physical resources) to offer on-farm training.

The following mechanisms have been proposed by the Limpopo Farmer Training Task Team to improve smallholders' access to agricultural training in the Limpopo Province:

- Establishment of *provincial policy and strategies* on farmer training in Limpopo;
- Development of an *inventory and register* of agricultural training providers in Limpopo (as suggested in the LDA Farmer Training Policy, and with support from AgriSETA (Primary and Secondary Agriculture Education and Training Authority);
- Development of nationally recognised *Farmer Trainer* and *Farmer* qualifications, and appropriate training and learning material for trainers and farmers, in collaboration with AgriSETA (for Farmer qualifications) and (for Farmer Trainer qualifications) ETDA (Education Training and Development Practices Education and Training Authority);
- Institutionalisation of farmer training in *Agricultural Colleges*; and
- Support of *existing* and establishment of *potential new* training providers in Limpopo, as appropriate.

Capacity of Colleges to conduct Farmer Training

The two agricultural colleges are on track with the new developments of the training and education system in South Africa. Where they are lacking i.e. OBE methods of training, participatory methods and correct use of equipment, they have expressed wishes to address such issues. Further capacitating these colleges in areas that have been declared wanting will strengthen these entities and ensure that they can best implement future community training projects independently.

The role of the Outreach units at both colleges should grow rapidly in response to the new college mandate of practical, accessible training and support for smallholder farmers.

Identified gaps for improving the training capacity of the Madzivhandila College of Agriculture:

The following areas have been identified for improvement:

- Use of videos and laptop computers
- Use of teaching aids
- Biometry
- Participatory methodologies and tools
- Use of various implements, such as bailing machines, tractors, etc.
- Irrigation scheduling
- Processing of agricultural products
- Capacity and logistical resources for on-farm training

Identified gaps for improving the training capacity of the Tompi Seleka Agricultural College:

The following areas have been identified for improvement:

- Training on OBE for the untrained trainers
- Establishing the irrigation system
- Mobile training kits
- Hydroponics production unit
- Upgrading the pig farming unit

- Capacity and logistical resources to conduct on-farm training in the villages.
- Training of lecturers on the approach and content of the Facilitators Guide.

Resource Needs at Colleges with respect to effective Farmer Training

The needs of the training institutions were revisited after the trainers from both the institutions commenced with community training programmes. Since they were already offering training, the trainers were able to identify the gaps that they experienced and that could limit their efficiency. It was noted that the colleges are traditional lecturing institutions; giving training at community level requires a different approach as well as facilities in order for it to be successful. The following are the identified needs that are required for the colleges to effectively present training at community level:

- Small tractor with implements: mouldboard and disk ploughs, furrow opener and planter
- Transport for trainers for on-site training
- Small packs of seeds (SR 52, PAN 473, SNK 2147, and ZM 521)
- Small bags of fertilizers (2:3:2, 3:2:1, and LAN (KAN))
- Measuring tapes
- Knives
- Sets of protective clothing (work suits, nose masks, hand gloves, face shields, goggles and water boots)
- Hand hoe
- TV and video
- Flip charts and markers
- A dedicated training unit for managing and delivering the training
- The training material as Facilitator's Guide in a compact, mobile format, which would be user friendly no only in terms of the layout of the training content, but also the packaging.

Training Package

Attention was given to the development of a Training Package that can be given to prospective trainers or facilitators to use in the field when presenting training. The package needs to include information such as the expected outcomes and training content material, as well as notes to trainers regarding important issues to consider throughout the training. Appropriate procedures for introductions should also be considered. The package should include information on any potential equipment requirements, such as flip charts, paper, pens or other visual aids that may be required for presentation of specific training modules, as well as the actual technical training content. This "Training Package" consists of four (4) parts namely:

Facilitators' Guide on Farmer Training
The Facilitator's Guide, or actual technical training material.

Training Tools
Visual material (transparancies), to be used by trainer / facilitator during the presentation of training, specifically the modules contained in Chapter 3 of the Facilitator's Guide.

Assessment Tools
The "memoranda" to be used for the assessment of training / learners' progress. (Contained in the Facilitator's Guide).

Audio-visual reference material
The training in the field by Mr. Adendorff and several new Farmer trainers, on video for reference purposes.

Foreword

In the Provincial Growth and Development Strategy document (PGDS) of the Limpopo Provincial Government, agricultural sector is identified as one of the three major pillars of the provincial economy along with mining and tourism. The recent sectoral performance and impact review of various economic sectors in the province (conducted as part of the revision process of PGDS), revealed that the agricultural sector has by far comparative advantage to other sectors in terms of job creation and employment opportunities. These impact on food security, health and livelihood status of people - especially in rural areas where an overwhelming majority of the provincial population resides and close to 70% of whom are facing hunger and poverty.

The dualistic nature of the agricultural community in the province coupled with highly diversified and varying agro climatic conditions create rather a challenging, if not an impossible, task for agricultural support services to be rendered by the Limpopo Department of Agriculture in terms of their core strategic functions.

Revitalization of over 126 existing small holder irrigation schemes in terms of participating farmers' empowerment to take over the operation and management of these schemes on a sustainable basis, was the adopted strategic direction of the Limpopo Department of Agriculture since 1998, when the pilot rehabilitation program of the three smallholder irrigation schemes in Thabina, Morgan and Boscкloof was initiated. This initiative then expanded to almost 12 other schemes funded by the WaterCare component of the LandCare Program of the National Department of Agriculture. The guiding principles of this initiative and its present accelerated fully fledged resulting initiative, called "Resis", were emanated from the outputs of seven grass root and consultative workshops conducted in the then six Districts of Limpopo Province in 1997 at the time of the National Water Policy Review process.

In the year 2000, the Limpopo Provincial Government accepted and funded the Business Plan of her Department of Agriculture on Revitalization of Small Holder Irrigation Schemes (Resis) in the province. The six years' multimillion funding cycle of this program encompasses planning and implementation of a variety of activities in an integrated fashion, aiming at transformation of rural society through raised incomes of households on irrigation schemes and in surrounding villages. It is important to note that the manifestation of Provincial Government vision in funding agricultural, irrigation infrastructure, and its associated activities under the Resis Program did take place far before adoption of such Strategies and funding commitments by SADC and Sub-Saharan countries in Africa and many other parts of the world.

One of the prominent components of the set activities under the Resis program is Training and Capacity building of the benefiting farmers, and their institutional structuring into a legally based entity enabling them to face their techno-managerial, operational, economical and marketing challenges within the sector.

A review of the Socio Economic Profile of the smallholder irrigation community in Limpopo Province, as captured under Resis and its prior programs, reveals that:
The majority of this community are female;
More than 70% of these are virtually illiterate, and;
Aged 60 - 70.
All of these factors make the training process (not necessarily the capacity building part of it), more difficult, rather challenging!

During the Pilot stage of the Revitalization program and later on, under the WaterCare phase of it, the services of Mr. Johann Adendorff and his farmer training approach: “Development through Needs-Based Training”, was used with great success.

However, during the Resis business Planning stage, it was the sentiment of all involved that such a training approach has to be firstly well documented and then be supplemented by appropriately designed training modules and a supporting training guide. It was also envisioned that this approach later on be institutionalised at the two Agricultural Colleges of Limpopo, namely Madzivhandila and Tompi Seleka, to offer such training courses to smallholder farmers on their farms. Accreditation of such an anticipated expanded training program under Resis, was also found to be essential - or rather, *necessary* - to maintain and up keep its standards.

The International Water Management Institute (IWMI) was approached to assist in this process and they in turn, in collaboration with the Limpopo Department of Agriculture, submitted a research proposal to that effect for funding by Water Research Commission (WRC). After discussions between various role players, the ARC- Institute for Agricultural Engineering (ARC-ILI) was requested by the WRC to undertake the Project Management of the proposed project. The contract was then signed between WRC and ARC-ILI with Mr. Felix Reinders as the Project Coordinator, Ms. Marna de Lange as Project Leader and Mr. Marius Botha as Project Researcher, who brought this project to a successful completion.

The present report, which was guided by the WRC Report No. 774/1/00, is a unique artwork in the history of the South African emerging farming community, which can easily be adopted by many such communities all over the world. Its simple but in-depth approach to imparting knowledge and information, coupled with all-inclusive subject matter within each topic, makes it also applicable for all strata of farming community in this country and beyond its borders.

The Water Research Commission, especially the Chairman of the Reference Group, Dr. Gerhard Backeberg and his team members should be congratulated for their guidance and support to this unique research project. The professional project management of ARC-ILI, especially the techno - managerial inputs of Mr. Felix Reinders is greatly appreciated. IWMI’s supportive and facilitating attitude is much appreciated and acknowledged.

The sterling job done by Ms. Marna de Lange, Mr. Marius Botha, and the Limpopo Farmer Training Team (comprised of some member staff of Madzivhandila and Tompi Seleka Colleges), some extension officers and some farmers, has made a turning point in the history of the smallholder farming community in South Africa, and all should be commended for their achievement.

The tremendous support and visionary guidance to the Resis program, provided by the former MEC for Agriculture in Limpopo, Dr. A Motsoaledi, which created the opportunity for this initiative, is heartily remembered and acknowledged.

It is hoped that this initiative could be expanded to cover a wider variety of training modules in a flexible and dynamic fashion as originally intended, and its impact reach our future generations. May its authors be remembered for their due diligence.

Dr. Massoud Shaker, Pr Eng, CP Eng **October 2005**
(Former General Manager of the Chief Directorate, Projects and Infrastructure, Limpopo Department of Agriculture, and Champion of the Resis Program).

Water Research Commission

Revitalisation of Smallholder Rainfed and Irrigated Agriculture in South Africa

A Guide for Trainers and Facilitators

Final Report on the WRC-Project 1357: "Implementing and Testing the WRC Guidelines on Developing Sustainable Small-scale Farmer Irrigation in Poor Rural Communities"

Table of Contents

Chapter 1

Introduction

1.1 Background to the WRC research project

The Limpopo Province government has identified agriculture, tourism and mining as the priority areas for developing the province's economy. Following major investment in the past few years in mining and tourism, there is a new focus now on agriculture because of its potential for job creation among the poorest sectors of society, many of whom already have access to agricultural resources. The province has well developed but currently under-utilised smallholder irrigation infrastructure, which could play a central role in the revitalisation of the local economy in the rural areas of the province. Limpopo Province is one of the poorest areas in South Africa and one of the priority nodes earmarked for investment through the Integrated Sustainable Rural Development (ISRD) programme. Irrigation potential has been identified in eleven of the first thirteen nodes earmarked countrywide for implementation of the ISRD.

The WRC Guidelines "Developing Sustainable Small-Scale Farmer Irrigation in Poor Rural Communities: Guidelines and Checklists for Trainers and Development Facilitators" (WRC Report No. 774/1/00) is directly relevant to the implementation of the ISRD and the RESIS programme in Limpopo Province.

Through this WRC research project, the WRC Guidelines were tested as a means to increase the accessibility of meaningful training and capacity building where small-scale irrigation forms part of integrated sustainable rural development initiatives.

The research included the development of training material and training of Farmer Trainers. Further it was tested how training can be provided through the Agricultural Colleges in the Province. The Limpopo Province Department of Agriculture (LDA) now has several years' experience with the revitalisation and rehabilitation of smallholder irrigation schemes. The LDA's assessment of the impact of their actions to date has convinced them of the value their training and capacity building activities have had on improving livelihoods. However, farmers requested that the training needs must be broadened from a basic agricultural production focus, to also cover business and marketing skills and water management training to improve fair sharing of water amongst users. The LDA was also concerned that they have insufficient capacity to expand from eight pilot schemes to approximately 126 irrigation schemes in Limpopo Province and a large sector of small-scale irrigation production on community and home food gardens currently without access to this type of training and capacity building.

In view of this LDA requested the International Water Management Institute (IWMI) to develop a proposal for a project to broaden smallholder irrigation farmers' access to this training and capacity building which have been ongoing in the province for the past few years and is now expanded throughout the province within the current expanded programme for Revitalisation of Smallholder Irrigation Schemes (RESIS).

1.1.1 Institutionalisation of Farmer Training in Limpopo Province

Thus, in order to broaden smallholder farmers' access to relevant training, the Limpopo Department of Agriculture (LDA) embarked on this process to build farmer training into the curricula offered by the Agricultural Colleges in the Province. The Water Research Commission (WRC) backed up this initiative with research support through this research

project and the Development Bank of South Africa (DBSA) generously contributed much appreciated funding for certain aspects of the research. This process is viewed as a pilot exercise for national expansion and aligns to the development of the National Strategy for Education and Training for Agriculture and Rural Development. The Limpopo Farmer Training Task Team was established to provide guidance and direction to this joint LDA/WRC initiative.

This was an action research project, aimed at transferring practical skills to previously disadvantaged individuals, institutions and communities. Resource poor farmers, youth and women's groups are the primary target groups for enhanced skills in agricultural production, water use and management, business and entrepreneurial skills.

The lessons learnt from this action research project could assist in the implementation of similar programmes, particularly in support of initiatives under the Integrated Sustainable Rural Development Programme.

Smallholder farmers currently have limited access to training. Furthermore, formally available training is focused almost exclusively on scaled-down versions of high-cost, high-risk commercial production practices, which are especially inappropriate to food insecure households. Much of the current training also requires trainees to be away from their homes for periods ranging between three weeks and several months. This is impossible for many - especially so for the women responsible for food insecure households. Most of the farmer training in the Limpopo RESIS programme is offered on-farm.

The Agricultural Colleges in the Limpopo Province has taken a basic decision to provide training at the Further Education and Training (FET – Grade 9-12) level, rather than the Higher Education (HE) level (the level at which the Technikons and Universities provide services). Further, the Agricultural Colleges have decided to shift their focus towards the training of smallholder farmers, whereas before they trained extension staff only. One of the challenges associated with offering farmer training is to further develop the Agricultural Colleges' capacity (skills and physical resources) to offer on-farm training.

The following mechanisms have been proposed by the Limpopo Farmer Training Task Team to improve smallholders' access to agricultural training in the Limpopo Province:

- Establishment of *provincial policy and strategies* on farmer training in Limpopo;
- Development of an *inventory and register* of agricultural training providers in Limpopo (as suggested in the LDA Farmer Training Policy, and with support from AgriSETA (Primary Agriculture Education and Training Authority);
- Development of nationally recognised *Farmer Trainer* and *Farmer* qualifications, and appropriate training and learning material for trainers and farmers, in collaboration with AgriSETA (for Farmer qualifications) and (for Farmer Trainer qualifications) ETDA (Education Training and Development Practices Education and Training Authority));
- Institutionalisation of farmer training in *Agricultural Colleges*; and
- Support of *existing* and establishment of *potential new* training providers in Limpopo, as appropriate.

This WRC research project is contributing to several of these mechanisms.

The Limpopo Farmer Training has proven to be highly successful and effective and forms the basis of two new Qualifications to be developed and institutionalised through proper curricula within the Agricultural Colleges namely: Farmer and Farmer Trainer.

Water Research Commission Guidelines

The "Water Research Commission Guidelines on Developing Sustainable Small-scale Farmer Irrigation in Poor Rural Communities" forms the basis of this WRC project, which aims to implement and test these guidelines. The WRC Guidelines and the training offered through the RESIS Programme builds on the work of Mr Johann Adendorff, who, due to ill health, has limited opportunity to provide the training indefinitely. It was therefore critical that not only the training content, but also the approach followed by Mr Adendorff, be studied and properly recorded in a scientifically verifiable way.

The approach of "development through needs-based training", as developed by Johann Adendorff (further referred to as the Adendorff Approach), was first applied successfully in the training of approximately 7 000 poverty-stricken dry land maize farmers in Phokoane in the Nebo district of the Limpopo Province over a period of five years. Through appropriate training, organisation and improved self-confidence, farmers considerably improved their yields from an average of 3,5 bags per typical 1,2 hectare holding, to a new average of 40 bags. This intervention improved the general standard of living in the Phokoane area from a typical household situation of one meal in three days, to surplus production of 11 000 tonnes from the area. The "development through needs-based training" approach has since been used in several dry land areas in South Africa and is currently being used in poor rural communities with access to irrigation schemes. In particular, the Limpopo RESIS programme provided a valuable opportunity to implement and test the Adendorff training approach and the WRC Guidelines.

Simultaneously, the information and data gathered in this WRC project on Adendorff's and other training used in the RESIS programme is being used to develop further training courses and training modules. These curricula are now being institutionalised at the two Agricultural Colleges in the Limpopo Province, Tompi Seleka (Marble Hall) and Madzivhandila (Thohoyandou). It is envisioned that, after successful institutionalisation of the curricula at these two colleges, the process could be duplicated at other Agricultural Colleges in the country.

1.1.3 SAQA requirements and the National Qualifications Framework (NQF)

This Water Research Commission (WRC) project aimed to support the institutionalisation of the training offered through the RESIS programme in the Limpopo Agricultural Colleges.

Therefore the material has to be registered with the Agriculture Sector Education and Training Authority (AgriSETA).

In order to have the training courses, modules and curricula recognised by and accredited with the South African Qualifications Authority (SAQA), the training content had to be developed in a specific format required by SAQA, called Unit Standards. Unit Standards form the basis for Outcomes Based Education and focuses on training and education that is aimed at achieving specific outcomes or results. Unit Standards are composed of several 'Specific Outcomes'[1], each with several 'Learning Units/Outcomes'[2], for each separate aspect, which has to be covered in the training. These smaller parts, which make up a Standard, are called Credits *(See diagram, page 8 of this report)*. Each credit is equal to an average of about ten notional hours. People can earn their credits without going to a course if they can show that they already have the skills and knowledge required in the standards and

[1] *Specific outcome: The specific outcome describes the eventual skill or ability that the unit standard aims to achieve.*
[2] *Learning unit: The learning unit breaks up the specific outcome into detailed learning goals, which has to be attained by the learner within the specific outcome.*

qualifications. This Recognition of Prior Learning (RPL) means that peoples' skills must be recognised even if they have learnt it simply through doing rather than through a formal course or qualification. When Unit Standards are put together, they form Qualifications, which are then registered on the National Qualifications Framework (NQF).
The NQF is like a single, but wide, ladder, which covers all the many possible learning and career paths. The learning paths include all forms of education and training. The "ladder" is designed to make it easy for people to move sideways as well as upwards, for example, when they want to move from one type of learning to another, or from one career to another. From these levels within the NQF, it is clear how far a person is from the bottom or top and what the next step is. All types of learning and career paths have the same steps or levels, so that progress can be recognised wherever a person is. The NQF is made up of eight levels of learning and pathways for learning specialisations *(See Table 1.1, page 7 of this report)*. Different qualifications fit into the framework according to their focus and how difficult they are. The level of a qualification is based on the exit level – on what a person will know and be able to do when he/she finishes his/her qualification. This new way of recognising learners' achievements applies to all qualifications, giving education and training the same status. It measures what a person knows and can do, rather than where, what and how the person learnt. The Farmer Training primarily subscribes to the ABET (Adult Basic Education Training) Level on the NQF, while the 'Train the Trainer', the Technician and the College Lecturer Training may subscribe to any and all of the levels on the NQF (Levels ABET 1-4, NQF 1-8, ABET 4 and NQF 1 overlaps).

The first step, was to identify the gaps and determine the new unit standards that needed to be developed for ABET Level 1. The second step was to develop unit standards, which are needs based - the *needs* being those of the actual learners, in this case the farmers. This highlights the importance of the participatory needs analysis, which formed part of this project.

All of the abovementioned serve as the building blocks for a complete qualification, to be recognized by and registered with SAQA. From this qualification different unit standards and combinations thereof can then be used to form the modules of learning material on the different levels of the NQF.

Step 1: Unit Standard Gap Analysis

AgriSETA supplied the project team with copies of all the existing registered Unit Standards within the AgriSETA. However, although these Unit Standards are quite extensive in terms of quantity, they lack in terms of relevancy regarding the aims of this project as they basically only cover Unit Standards for NQF Level 1 and upwards. From this information, gaps could be identified of unit standards that were needed but not yet developed.

Step 2: Development of new Unit Standards

The development of Unit Standards involves a process of designing the following components:

- Specific Outcomes;
- Assessment Criteria;
- Learning Assumed to be in Place;
- Range Statements;
- Critical Cross Field Outcomes; and
- Essentially Embedded Knowledge (Course Content).

Standard procedures usually entail the development of Specific Outcomes and Assessment Criteria, on which Essentially Embedded Knowledge (content) is then based. In this case,

however, the content consists largely of material and methods used in the Adendorff Approach for which unit standards had to be developed.

A Unit Standards Writing Team (WRC-OBE Development Team, now called the "Limpopo Farmer Training Team") was formed to develop the Specific Outcomes and Assessment Criteria on which the Unit Standards would be based. This team was comprised of a wide representation of people including representatives of the Limpopo Province's two Agricultural Colleges, Madzivhandila and Tompi Seleka, Extension Officers of various districts in the Province and leading Smallholder Farmers. The Specific Outcomes and Assessment Criteria developed by the team will be given to the Unit Standards Generating Body, who will now be responsible for completion of the Unit Standards.

Step 3: Development of the Facilitators Guide

In addition to developing Specific Outcomes and Assessment Criteria, the Limpopo Farmer Training Team compiled a Facilitators' Guide, which is being used as training manual for trainers of crop production methods to emerging farmers, in the Limpopo Province. The Facilitators Guide forms part of this report.

Step 4: Training of Farmer Trainers whilst training Farmers

After developing the Unit Standards, the Limpopo Farmer Training Team presented the training to farmers in Limpopo over a six-month period, under the guidance and supervision of Johann Adendorff. Thus, a methodology for training-of-farmer-trainers was developed and tested. This team of farmer trainers are now known as the Limpopo Farmer Training Team and are fully deployed to offer the training in the expanded RESIS programme.

1.1.4 Original Aims of the Project and how they have changed

The original aims of the project were:

- To build the capacity of previously disadvantaged individuals, communities, training institutions and local and provincial government in the area below Arabie Dam.
- To test the role of the WRC guidelines in catalysing the economic revitalisation of rural areas with access to small-scale irrigation.
- To implement and test the WRC guidelines "Developing Sustainable Small-Scale Farmer Irrigation in Poor Rural Communities: Guidelines and Checklists for Trainers and Development Facilitators" in the rural area below Arabie Dam in Northern Province in support of the Presidential Program – Integrated Sustainable Rural Development.

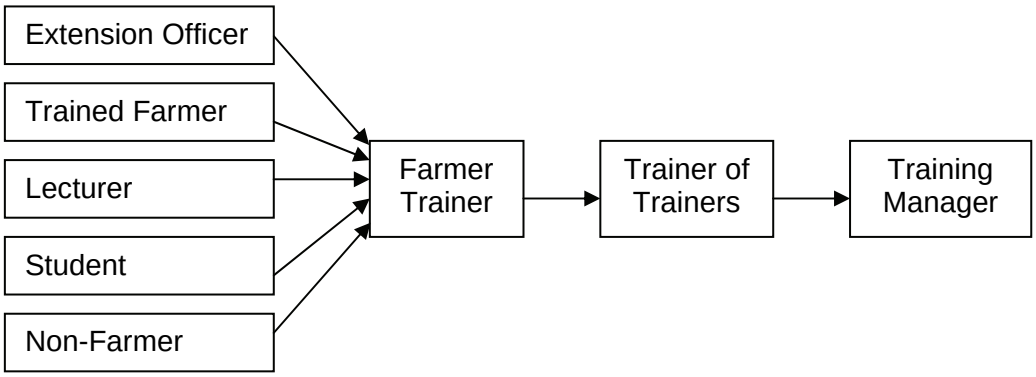
These aims had changed during the course of the project by being expanded to be more inclusive in terms of:

- The area of execution to include not only the area below Arabie Dam, but currently the whole of Limpopo Province and eventually the whole of South Africa;
- Not only impacting on the economic revitalisation of rural areas with access to small-scale irrigation, but also dry land areas and homestead farming areas.
- The development of training material in the form of a Facilitators' Guide for Farmer Training on ABET (Adult Basic Education Training)-levels 1 and 2, in Outcomes Based Education format with newly identified Unit Standards to be accredited with SAQA (South African Qualifications Authority) for inclusion on the NQF (National Qualifications Framework).

Table 1.1: The National Qualifications Framework (NQF)

NQF Level	BAND					
8 7 6 5	Higher education and training		Post-doctoral research degree Doctorates Masters degrees Professional qualifications Honours degrees Higher diplomas National diplomas National certificates		Universities Technikons Colleges	
FURTHER EDUCATION AND TRAINING CERTIFICATE						
4 3 2	FET	School/ College/ Trade certificates	Private schools Government schools	Technical community some police, some nursing, private colleges	RDP and labour market schemes, unions, workplaces etc.	
GENERAL EDUCATION AND TRAINING CERTIFICATE						
1	Std 7 / grade 9 (10 years)	ABET level 4	Formal schools Urban, rural, farm, special schools	Occupation, work-based training, RDP, labour market schemes, upliftment programmes, community programmes	NGO's, churches, night schools, private ABET programmes, unions, workplaces, etc.	
	Std 5/grade 7 (8 years)	ABET level 3				
	Std 3/ grade 5 (6 years)	ABET level 2				
	Std 1/ grade 3 (4 years)	ABET level 1				
	1 year reception					

Diagram 1: Potential Farmer Trainers and Career Path



BOX 1

Example of a Unit Standard: **(for the trainer course, studying 'Farmer Training' in order to become a farmer trainer)**

Upon completion of the training on "Institutional Development and Organisation" of the module "Demographic Surveying" of the course Farmer Training, the participant will be able to…

Specific outcome 1:

Facilitate the mobilisation of a rural community to establish a properly functioning farmers' group committee.

Learning unit:

Sensitise the community to the importance and role of respected structures and organisation within the community itself

Establish a community farmers' group

Formation of a farmers' group committee, established from within the group itself, by the group itself

Committee comprises of farmers representing all levels of the community, recognizing gender, youth, natural leadership and communication development within the community

The committee must be formed in a manner which supports mutual respect among all parties involved; i.e. respect for each other's role and function, between the farmers themselves, the committee members, the trainer or development facilitator, Department of Agriculture, etc.

Specific outcome 2:

…….

Learning unit:

…….

Specific outcome 3:

…….

Learning unit:

…….

Credit

Unit Standard: 'Demographic Surveying'

1.1.6 Development of Farmer Training Material in Limpopo Province

Members of the Limpopo Farmer Training Team are now capacitated to develop new Outcomes Based Training material from existing or newly developed training material as well as identify gaps in existing Unit Standards and propose new Unit Standards to be developed by the relevant SGB's for future training requirements. This means that in-house capacity was created in the Limpopo Department of Agriculture to populate the Smallholder Agricultural Training Needs Matrix developed during this WRC research project (see Table 1.2 below).

Table 1.2: Spectrum of smallholder agriculture – categories of training needs

		Increasing input costs and risk			
		Homestead yards	**Grazing / livestock watering**	**Dry land fields**	**Irrigated fields**
Number of households (hh) in former homelands with current access to agricultural resources		*2 400 000 hh (100%)*	*1 700 000 hh (70%)*	*1 700 000 hh (70%)*	*56 000 hh (2.5%)*
Total hectares currently under control of these households		*200 000 ha*	*12 000 000 h a*	*2 000 000 ha*	*100 000 ha*
Development path	**C**	Define training needs	Define training needs	Define training needs	Define training needs
	B	Define training needs	Define training needs	Define training needs	Define training needs
	A	Define training needs	Define training needs	Define training needs	Define training needs

This table gives a useful perspective on the range of farmer training needs for which training material needs to be developed. In practice, each training programme should be preceded by a thorough training needs assessment to confirm and prioritise the specific needs of that target group. The 'pre-development survey' at the start of each new project in the RESIS Programme serves this purpose.

The Adendorff training material on Maize Production was incorporated into the draft Facilitators' Guide on Farmer Training. Further Outcomes Based training modules, being developed by the Limpopo Farmer Training Team will over time also be incorporated into the Facilitator's Guide, which is one of the main products / outcomes of this WRC research project.

The Limpopo Farmer Training Team also visited MmaTshepo Khumbane for one day for an introduction to her approach on mobilizing people towards food security through 'mind mobilisation' and low-cost home food production through rainwater harvesting. Subsequently the team analysed video recordings of MmaTshepo's mind mobilisation workshops, identifying outcomes and possible gaps.

The process followed by the Limpopo Farmer Training Team is thorough, but time consuming. Members of the Limpopo Farmer Training Team are College Lecturers and Extension Officials, who have been working on this material in addition to their normal duties.

1.2 Limpopo Programme on Revitalisation of Smallholder Irrigation Schemes (RESIS)

The National Guidelines on Agricultural Water Use describes government policy to transfer the management of smallholder irrigation schemes to farmers and to broaden opportunities for multiple uses of agricultural water to rural communities. The Limpopo Department of Agriculture (LDA) has taken the lead in implementation of this policy by launching a major programme for the Revitalisation of Smallholder Irrigation Schemes (RESIS). This is a provincial and national flagship programme to combat poverty and joblessness in the rural areas.

RESIS strives at transformation of society by enabling rural households to exercise much more control over their daily lives and especially their economic activity. This is achieved by giving the farmers authority over management and expenditure on their irrigation scheme infrastructure and farming choices, supported by training, capacity building and mentoring. Simultaneously, the general lack of access to farming inputs and services is addressed, as well as the upgrading and redesign of infrastructure to enable management-by-the-farmers.

Further, RESIS strives to maximize benefits to the broader community by addressing community agricultural water needs, water for homestead gardening, animal watering and dipping tanks, and training and support for dryland crop production.

A key parallel objective of the RESIS programme is the 'transformation of government service', as reflected in the Integrated Provincial Support Programme (IPSP).

These objectives all have important implications for the choices in the implementation of the RESIS programme.

A key feature of the project structure for the implementation of the RESIS Programme is a Multi-Disciplinary Team consisting of government and private sector staff responsible for the provision and management of key specialist services to the Programme.

The Multi-Disciplinary Team is being established through:

Specific nominations from the Department for full-time assignment to the RESIS Multi-Disciplinary Team (MDT);
Part time participation by certain Departmental staff; and
Soliciting of private sector participation in the RESIS-MDT, through open tender for the positions on the MDT.

The RESIS rollout programme provides for the awarding of a range of contracts to service providers, as and when required in the rollout of the programme. This approach helps level the playing ground by enabling participation by a multitude of service providers and specifically creates opportunities for smaller and emerging service providers.

Each of the 126 irrigation schemes in the RESIS programme requires at least a full four-year period of intervention to complete the RESIS project cycle. All 126 schemes need to be completed within a six-year term. This implies that activities need to run in parallel on all schemes for a couple of years.

The overall goal of the RESIS programme is to raise and sustain incomes of farm families in Limpopo Province on irrigation schemes and in the villages surrounding them within the Programme period from 2004-2010. This goal will be achieved through the following activities:

- Deep and thorough consultation of farmers and their communities about their problems, needs, fears and aspirations, leading to an agreed Development Plan between the farmers, communities and the Department for each RESIS scheme.

- Establishment and/or strengthening of farmer Management Committees to manage the irrigation schemes.
- Farmer training in crop production, scheme management, entrepreneurship and water management, dovetailed with implementation activities.
- Implementation of crop production with relevant support services (market and transport arrangements, credit, access to inputs, stimulation of group activities, and institutional building).
- Infrastructure rehabilitation, and redesign where necessary to enable management-by-the-farmers.
- Follow-up advisory and mentoring services to farmers and their Management Committees.
- Monitoring and evaluation of all activities to provide data for refinement of approaches as the rollout moves to additional irrigation schemes.

The Limpopo Farmer Training Team, based at the Agricultural Colleges are playing a key role in the implementation of the RESIS programme, and are using, refining and expanding the Facilitators' Guide.

1.3 National and Provincial Agricultural Training Policy

The Limpopo Department of Agriculture has identified seven key programmes in their Strategic Plan to contribute to the economic growth and development of the Limpopo Province. These programmes are in line with the overall priorities as contained in the Growth and Development Strategy (GDS) of the Limpopo Provincial Government, which was adopted in 1999.

The identified areas are:

1. The Restructuring of State Assets to empower communities, workers and Black Economic Empowerment.

2. Land Reform to redistribute agricultural land and also to capacitate the beneficiaries.

3. Poverty Eradication to ensure food security for all.

4. Communal Farmer Support to capacitate communal farmers with basic agricultural skills.

5. Formation of co-operatives to ensure full participation and provide opportunities for emerging and small-scale farmers to stimulate local economic development and employment creation. This will also see increased support for business chambers and business development organisations, and the expansion of the business mentorship programme.

6. Animal production and health to improve livestock and control animal diseases.

7. Human Resource Development to increase knowledge, skills and competency of both farmers and officials.

With reference to point 7 of the above, which has direct impact on this WRC project and this report, the following excerpts are taken from the LDA strategic plan 2004/2005:

PROGRAMME 7: HUMAN RESOURCE DEVELOPMENT

PROGRAMME 7: STRUCTURED AGRICULTURAL TRAINING

STRATEGIC OBJECTIVES

The main objective is to provide training and create opportunities for practising and prospective farmers and to enhance Human Resource Development in Agriculture.

SITUATIONAL ANALYSIS

The main objective is to provide training and create opportunities for practising and prospective farmers and to enhance Human Resource Development in Agriculture. The Department also emphasizes the training and retraining of extension officers. As a cornerstone of economic prosperity in the Province, it is imperative that the Department pays attention to the continuous development of an important asset namely its Human Resources. The training will concentrate on short courses for both extension officials and farmers. Land restitution beneficiaries will be able to enrol and certain subsidies are being initiated.

ANALYSIS OF CONSTRAINTS

- Changing of the role and place of agricultural colleges within the education system;
- Changing customer needs and circumstances;
- Offering suitable and researched training programmes to satisfy sectoral needs; and
- Providing an adequate physical infrastructure to facilitate learning.

MECHANISMS TO OVERCOME CONSTRAINTS AND IMPROVEMENT PLANS

- All training programmes to be registered with South African Qualifications Authority;
- Develop short courses that meet National Qualification Framework standards;
- Work closely with AgriSETA to ensure quality assurance of training programmes; and
- Continuous improvements on existing training programmes through feedback from stakeholders.

1.4 Human resource development through the WRC research project

Farmer Training on crop production the RESIS Programme was previously conducted primarily by Johann Adendorff and more recently also by two Extension Officers, one from Vhembe and one from Bohlabela, who have had remarkable results.

Through the Farmer Training Initiative as supported by the WRC project, the number of Farmer Trainers has now increased to ten, namely two lecturers from Tompi Seleka, three lecturers from Madzivhandila, two Extension Officers, two leading irrigation farmers and Johann Adendorff. Additional staff will be trained as Farmer Trainers throughout the implementation of the RESIS programme.

The approach to the training of these Farmer Trainers has followed on from the process for developing the training material, as described above. The same Limpopo Farmer Training Team who developed the training material were next given the opportunity to present this training to farmers on four irrigation schemes in the Vhembe district. This was organized as part

of the implementation process of the RESIS Programme, with the result that the trainers had to respond to the programmed activities of the RESIS programme. This meant that lecturers from Tompi Seleka also conducted their 'maiden training' in Vhembe District, as there were no RESIS activities in the areas around Tompi Seleka at the time.

The Limpopo Farmer Training Team has completed their maiden training on all the maize training modules, except where local circumstances have necessitated postponement, such as a crocodile attack in one village the day before a scheduled training event.

The potential Farmer Trainers received the following training to prepare them for this task:

March/April 2003	Training on ABET principles and methodologies and participatory training methodologies, at NCWSTI, UNIN
19-23 Jan 2004	Orientation to farmer circumstances and introduction to the pre-development survey, at Tompi Seleka
Oct 2003 – April 2004	Hands-on experience through a structured two-weekly cycle over a six-month period, under the guidance of Johann Adendorff, namely: Module preparation; Training presentation in the villages; Self-evaluation (from video recordings); and Team discussions.
June-July 2004	Participation in Pre-Development Survey
August 2004	Planning of 2004/05 training programme in 42 irrigation schemes under RESIS.
September 2004	Commencement of cotton training and scheme management training.

<u>Way Forward on developing Farmer Trainers:</u>

The Limpopo Farmer Training Team has received thorough training and hands-on experience and has already seen farmers implementing their training successfully in practice.
This new capacity should be fully utilized as a valuable internal departmental resource. This is being achieved by releasing these officials from other duties so that they can dedicate their time to the training of farmers and the development of further farmer training material at ABET levels.

The Limpopo Farmer Training Team is being expanded:
- *Suitable candidates are being identified to be trained as Farmer Trainers.*
- *Some current Limpopo Farmer Training Team members may develop further to become 'Trainers-of-Farmer Trainers'. The team has recommended that any potential trainer-of-trainers should first prove him/herself as a successful Farmer Trainer, to ensure his/her hands-on understanding of the training approach, context and peculiarities.*
- *More lecturers from the colleges', extension staff and crop scientists from three Districts have participated in two one-week orientation courses in August and September 2004.*

Chapter 2

Agricultural Training Needs in Rural Communities in the Limpopo Province

2.1 Profile of Rural Dwellers in the Limpopo Province

2.1.1 Age Distribution of sample group of 518 farmers:

In a sample group of 518 farmers studied by the Provincial Representative Officers of the National Strategy for Education and Training for Agriculture and Rural Development it was found that 47% of the Farmers were older than 50 years.

Range (age)	Number of people	%
20-25	30	6.12
26-30	41	8.16
31-35	28	4.08
36-40	45	8.16
41-45	51	10.20
46-50	73	14.29
51-55	57	10.20
56-60	62	12.24
61 and older	131	25.28
Total	**518**	**100.00**

2.1.2 Gender Distribution of sample group of 518 farmers:

Of the 518 participants, the majority (53%) were female. It was indicated that this percentage will be even higher for all persons active in the agricultural sector and could be between 60% and 70 %. This follows the normal pattern in South Africa with the majority of persons involved in rural agriculture being female. As a rule women are mostly involved with community gardens, dry land and poultry production (which allows them to attend to other responsibilities such as the care of children, preparation of food and general maintenance of the household). Men, on the other hand, are mostly involved with larger projects such as large-scale animal husbandry and irrigation schemes.

2.1.3 Literacy Level of sample group of 518 farmers:

The participating group was quite diverse in terms of their level of schooling. 16% of a sample group of 518 farmers have received no schooling at all. The latter group will thus require specific inputs of an ABET nature before enrolment for higher levels of learning. It further implies that learning for this group should preferably be of a practical nature. Written theoretical material should be kept to an absolute minimum.

1. No formal schooling =16%
1. Grade 0 – Grade 5 =46%
2. Grade 6 – Grade 10 =20%

82% = below Further Education and Training (FET) level.

3. Grade 11 – Grade 12 =15%
4. Tertiary level =3%

2.1.4 Knowledge and Skills Needs of sample group of 518 farmers:

Activity	Existing Knowledge/Skills	Skills Required	Preferred Training Method & Providers
Livestock farming (cattle, goat, sheep).	Indigenous experience in Livestock Management. Dehorning Branding Culling and Selection Feeding	Financial Management Business Plan development Record Keeping Bookkeeping Veld Management Farm Engineering Labour relations Animal Health Artificial insemination Animal breeding Feeding care Game farming Marketing skills Identification of diseases Silage making Conflict management	Formal training: Animal scientist Animal health technician Veterinary surgeon Informal training: Through visits Demonstrations Monitoring & aftercare: Providers as above
Poultry farming	Constructing a fowl run Feeding Vaccination	Vaccination Planning Poultry management Marketing Financial management Record keeping Pest & disease control Processing	Formal training: Animal scientist Animal health technician Veterinary surgeon Agricultural colleges Universities Informal training: Through visits Demonstrations Monitoring & evaluation: Providers as above
Piggery	Feeding	Marketing Pig production Financial management Record keeping Control of diseases	Formal training: Animal scientist Animal health technician Veterinary surgeon Informal training: Through visits Demonstrations Monitoring & aftercare: Providers as above
Vegetable production	Seedling production Transplanting Fertilisation Cultivars Irrigation methods Pest & disease control	Soil fertility / management / fertigation Safe use of chemicals Marketing Processing Soil preparation Crop maintenance Harvesting Crop rotation	Formal training: Extension officers Crop scientists Input suppliers NGO's Informal training: On-farm trials Demonstrations Monitoring & evaluation: Providers as above
Grain crops	Soil preparation Planting Weed control Harvesting Storage Pest & disease control	Crop post-harvest management Soil & water conservation Soil fertility Marketing Financial management Record keeping Pest & disease control Empowerment skills	Formal training: Extension officers Crop scientists Input suppliers NGO's Informal training: On-farm trials Demonstrations Monitoring & evaluation: Providers as above

2.1.5 Expressed Farmer Training Needs and Requirements

Regarding developmental areas (areas perceived as having good potential and thus warranting specific developmental programmes) the following were highlighted as priorities:

- Animal production
- Poultry production
- Crop production
- Horticulture
- Dress making (to supplement income)

Regarding training needs and requirements the following were highlighted as priorities:

- Production training
- Animal husbandry courses
- Crop production courses
- Horticultural production courses
- Management and Business training
- Marketing and entrepreneurial skills
- Farm management skills

From the above it was evident that farmers are well aware of their shortcomings in terms of agricultural production. They also understand the need for economic viability and sustainable farming operations. Some participants indicated that during the dry season, agricultural activities are almost impossible. They therefore expressed a need for skills training related to dress making and other income generating projects to enable them to survive during those periods.

The mere fact that farmers are aware of these shortfalls is perceived as extremely positive since it reflects an understanding that farming should be undertaken as a business venture and that technical, management and economic issues are of critical importance to ensure sustainable farming initiatives.

Agricultural Training Needs of Rural Dwellers in the Limpopo Province

To identify appropriate training needs, it is necessary to understand how those farmers' objectives, and hence their generic training needs, differ between the food insecure household, subsistence and emerging farmers, and commercial, profitable small-scale farmers. The changing objectives and corresponding learning outcomes are summarised in Table 2.1.

Table 2.1: Changing objectives of learners along the development path

Position on Growth Path	*Learner Objective*	**Learning Outcome**
A – Food-insecure household	***Food security***	Food security through own production
B – Subsistence- & emerging farmer	***Income generation and self-development***	Profitable small-scale farmer
C – Profitable commercial small-scale farmer	***Improved profit, simplified management and economic growth***	Efficient and knowledgeable commercial farmer

A case study of household food production in the homestead of Mrs Khumbane, during the winter of 2002, describes the importance of the homestead garden as source of food. What came out specifically was the different training needs experienced by households that rely on homestead gardens, where limited space must be used with maximum efficiency to produce a variety of crops to ensure balanced nutrition.

A training needs assessment was also conducted to pinpoint the training needs of smallholder farmers with the aim of developing and providing training relevant to the identified needs of the farmers. Using a systematic approach of needs assessment ensures that gaps in "performance" or competence are identified correctly, which can then be improved through correct training (Gupta, 1999).

The training needs assessment was linked with other surveys conducted in the Limpopo Province namely:

- "Pre-development Survey Reports" which are intensive community needs assessments conducted in various communities through the RESIS (and the earlier WaterCare programme) in the period July 2000 to Sept 2004.
- "Provincial report on education and training for agriculture and rural development in Limpopo Province" (Mmbengeni & Moroko: 2002).

This training needs assessment was aimed at verifying the identified training needs from these reports as well as identifying other training needs not identified in these studies.

The training needs assessment was conducted in the Kutama area (Capesthorn Irrigation Scheme) and at Mphaila (Mphaila and Luvhada Irrigation Schemes) where pre-development surveys were done previously.

Procedure

In pursuit of the most reliable results from the assessment, the WRC team believed that this process would be best conducted by training specialists (NCWSTI) and agriculturists, as content experts. The assessment was thus conducted together with participants from the OBE workshop (agricultural economists/scientists, extension officers and lecturers from two colleges of agriculture) who were trained on how to conduct a training needs assessment before the field visits. Questions drafted by the NCWSTI were tabled for discussion with the group, and finalized before the assessment. A questionnaire developed earlier for the pre-development survey was used as a probing mechanism for more information. The team used these identified questions to facilitate group discussions.

Meetings were held with irrigation scheme farmers and homestead/dryland farmers at both Mphaila and Kutama communities. The field workers divided themselves into three groups and conducted focus group discussions with eight farmers per group – each group had to be representative of both men and women and a combination of irrigation, homestead and dryland farmers. The idea was to encourage these farmers to share their different farming experiences and needs with each other as well as with the team. Qualitative and quantitative data, per category of farmer, namely, food insecure households, dryland farmers and irrigation farmers, were recorded during these group sessions. At the end of the assessment, the team gathered, presented and discussed their findings in order to generate the report.

Findings

The following have been identified as the main irrigation farming activities taking place in the two areas:

- Crop production (maize, ground nuts, vegetables)
- Irrigation
- Soil preparation
- Fertilization
- Pest and disease control
- Crop rotation

- Harvesting
- Marketing

From the data collected, it can also be concluded that farming in these areas is constrained by several common problems. These problems are:
- Plant pests and diseases;
- Water shortage;
- Lack of financial resources (to purchase agricultural lime, fertilizers, seeds, mechanisation services, etc);
- Soil pH (acidity);
- Lack of security (fencing);
- Lack of grading equipment;
- Marketing (lack of storage, over production and no markets); and
- Lack of technical services such as maintenance of pumps and pipes, reservoirs and irrigation equipment.

The training needs were established using both the questionnaires to conduct focus group discussions by the team. These results have been added to the table extracted from the document "Concept paper to improve smallholder farmers' access to agricultural training in Limpopo Province" July 2002. *(See Appendix A).*

Table 2.2 Categorisation of identified training needs

Homestead yards	**Dryland fields**	**Irrigated fields**
Soil preparation Seed selection Fertilization Weed control Winter cropping Marketing Use of chemicals	Soil preparation Seed selection Weed control Intercropping Crop diversification Soil sampling Storage of farm produce Applicability of indigenous knowledge Use of chemicals/fertilizers Water harvesting and management	Production plan Canal construction Soil conservation Irrigation scheduling Using pesticides and herbicides Fertilization Erecting/repairing fence Water management Weed control Marketing Irrigation pipes repair& maintenance Farm produce grading
Crop production Soil preparation Harvesting Storage Marketing Water harvesting Broiler production Entrepreneurship (how to start community projects)	Maize production Water harvesting and management Soil conservation Fence making and Erecting fence Fertilization	Basic management Crop production canal construction Erecting fence Water management Marketing

Results

It can be deduced that these training needs correlate well with the findings of Mmbengeni and Mokoka (2002). They identified the skills required for vegetable farming as follows:

- Soil fertility management/fertigation

- Safe use of chemicals
- Marketing
- Processing soil preparation
- Crop maintenance
- Harvesting
- Crop rotation

The majority of these needs were identified during the needs assessment conducted in Kutama area (Capesthorn Irrigation Scheme) and at Mphaila (Mphaila and Luvhada Irrigation Schemes). However, many other needs were also identified.

The pre-development survey report does not identify specific training needs. However, from the problems faced by the community under the heading “Agricultural Issues” (2002:5-10 and 7-39), training needs can be extracted. These include training on issues such as:

- Farming methods
- Irrigation
- Vegetable production
- Composting
- Fertilization
- Crop management
- Pesticides
- Planting methods

The training needs assessment conducted by the WRC Research Team has identified all these areas for training.

Concluding remarks

The irrigation scheme farmers in the two areas have shown satisfactory zest for the success of their scheme and farming activities. They perceive their farming as the source of food and income for their households. It is for this reason that irrespective of some constraining problems such as water shortage and lack of knowledge, they remain actively involved in farming. It is therefore safe to believe that with the correct infrastructure, services and training, the irrigation scheme farmers’ performance could be improved, thereby increasing their output.

The situation with the homestead and dryland farmers is a different scenario as compared to the irrigation farmers. Although the homestead and dryland farmers have shown an interest in improving their farming activities, they appear highly concerned about the lack of infrastructure, such as fencing. It appears that these kinds of problems result in farmers skipping seasons for planting. It can therefore be concluded that efforts to address infrastructure shortfalls should be considered a significant factor and should be addressed.

This study has verified findings in the ‘Provincial Report on Education and Training for Agriculture and Rural Development in Limpopo Province’ and the Pre-development Surveys conducted in various villages since 2002. It appears that the lack of capacity of farmers is as serious a factor as unavailability of infrastructure, finances and accessible markets in creating an environment conducive for effective farming. It is important to note that farmers at community level are mainly illiterate as indicated in the above-mentioned report. This requires basic training programmes at appropriate levels to be developed and offered. Developing the required training programmes should also take into consideration whether the planned training is meant for initiating a career path or only equipping farmers with basic skills to manage their own farming activities. This would be influenced by several factors such as levels of literacy and training according to SAQA standards.

In irrigation schemes, farmers are sharing a water supply. This requires farmers to cooperate with each other on a daily basis, therefore they need to organise themselves into Water User Associations (WUA's). The formation of the WUA is facilitated through the RESIS Programme and is governed by the National Water Act (Act 36 of 1998).

In the RESIS programme a representative farmer committee is established before training and programme implementation starts. The committee is trained to plan the works programme for the scheme. The committee is also trained on the duties of the chairperson, secretary and treasurer. The committee and all farmers help in the formation of the WUA structure with all its portfolios and the development of its constitution. Currently most schemes have five portfolios namely services, human resources, natural resources, non-farming and technical. Each portfolio is trained on the duties of that portfolio.

Training needs of the WUA:

- The WUA Management Committee is trained on leadership skills, as they become the leaders of the group.
- The WUA needs to be trained on managerial skills, particularly on how to plan the WUA works programme and to hold regular (weekly) feedback meetings between portfolio holders and the chairperson.
- Training on financial management enables the farmers to run their WUA on their own, through their farmer representatives. This includes training in bookkeeping, opening and managing a bank account and keeping a cashbook.
- The WUA needs training on water management because one of their main tasks is to ensure equal sharing of water between the farmers. In addition, farmers need in-field training on correct utilization of water and conservation of soils from erosion.
- The WUA must also be trained in infrastructure rehabilitation, as they are becoming the managers of their own canals, pumps and pipelines. Training is needed on each of the components in their own system, such as canals, dams, fences, weirs, storm water crossings, valves, etc. WUAs are concerned about the problem of financing future repairs.

The RESIS leadership training has had tremendous impact, for instance at New Forest irrigation scheme. The extension officer/trainer has subsequently started an annual function for the WUA to reflect on what was done, and what wasn't done during the year, so that each year can be started afresh.

Chapter 3

Overview of Available Training in terms of Unit Standard Gap Analysis

3.1 Overview of available Unit Standards (Primary Agriculture)

The following Unit Standards have been registered with SAQA: (As at November 2005 – new Unit Standards are added constantly. To view the details of each Unit Standard, or see the most recent updated Unit Standards, visit the AgriSETA website at: www.agriseta.co.za, *Qualifications and Learning Material*, or, when viewing this document in electronic format, click on the links in the table below.

QUALIFICATIONS

Learning Subfield: Primary Agriculture

List of the Qualifications:

SAQA ID	Title	Level	Minimum Credits	Standards Generating Body (SGB)	National Standards Body	Qualification	Matrix
48970	National Certificate: Animal Production	1	120	SGB Primary Agriculture	NSB 01 - Agriculture and Nature Conservation	View	View
48971	National Certificate: Mixed Farming Systems	1	120	SGB Primary Agriculture	NSB 01 - Agriculture and Nature Conservation	View	View
48972	National Certificate: Plant Production	1	120	SGB Primary Agriculture	NSB 01 - Agriculture and Nature Conservation	View	View
20288	National Certificate: Farming	2	120	SGB Primary Agriculture	NSB 01 - Agriculture and Nature Conservation	View	View
48975	National Certificate: Plant Production	2	120	SGB Primary Agriculture	NSB 01 - Agriculture and Nature Conservation	View	View
48976	National Certificate: Animal Production	2	120	SGB Primary Agriculture	NSB 01 - Agriculture and Nature Conservation	View	View
48977	National Certificate: Mixed Farming Systems	2	120	SGB Primary Agriculture	NSB 01 - Agriculture and Nature Conservation	View	View
49048	National Certificate: Animal Production	3	120	SGB Primary Agriculture	NSB 01 - Agriculture and Nature Conservation	View	View
49052	National Certificate: Plant Production	3	120	SGB Primary Agriculture	NSB 01 - Agriculture and Nature Conservation	View	View
20290	National Certificate: Farming	4	131	SGB Primary Agriculture	NSB 01 - Agriculture and Nature Conservation	View	View
48979	National Certificate: Animal Production	4	140	SGB Primary Agriculture	NSB 01 - Agriculture and Nature Conservation	View	View
49009	National Certificate: Plant Production	4	142	SGB Primary Agriculture	NSB 01 - Agriculture and Nature Conservation	View	View
49010	National Diploma: Plant Production	5	240	SGB Primary Agriculture	NSB 01 - Agriculture and Nature Conservation	View	View
49011	National Diploma: Animal Production	5	240	SGB Primary Agriculture	NSB 01 - Agriculture and Nature Conservation	View	View
49626	National Certificate: Landcare Facilitation	5	125	SGB Primary Agriculture	NSB 01 - Agriculture and Nature Conservation	View	View

3.2 Maize Production Training under the RESIS Programme for which no Unit Standards were available

Within the Maize Production training modules, the following six (6) Unit Standards were identified as "gaps" or Unit Standards not yet registered with AgriSETA:

- Demonstrate an understanding of establishing a maize crop for small scale farmers
- Demonstrate an understanding of the control of witch weed or *striga hermonthica* in a maize crop
- Demonstrate an understanding of soil pH and its control measures in maize crops
- Demonstrate an understanding of the utilisation of natural resources
- Demonstrate an understanding of project management structures
- Demonstrate an understanding of the pre-development survey

3.3 Evaluation of Training conducted within the RESIS Programme

This report serves as an evaluation of the impact of farmer training conducted in the irrigation schemes targeted for revitalisation. Training is one of the most important components of the process of revitalisation of irrigation schemes, which is why the institutionalisation of farmer training in agricultural colleges was initiated.

The Limpopo Farmer Training Team conducted a field visit on the 4th and 5th February 2004 at Beaconsfield, Capesthorn and Homu. On the first two schemes, farmers were trained in 2001 and 2002 as part of the RESIS Programme implementation. On the third scheme, Homu, farmers were currently receiving training as part of the 'on-the-job' training of Farmer Trainers in the Limpopo Farmer Training Team. The following were the findings obtained from farmers in respective schemes:

- **CAPESTHORN (training under WaterCare, J Adendorff, 2000/2001)**

The plot sizes are 1.6 ha. Most of the farmers are women with few men rendering help when necessary. Johann Adendorff conducted farmer training at this scheme in 2000 as part of RESIS Programme. However, before farmers could implement the new knowledge, their dam was washed away during the 2000 floods. It is remarkable that they retained the knowledge until 2003, when their infrastructure was sufficiently repaired to enable planting. The majority of farmers are now implementing what they learned, with little variations due to availability of resources.

Farmer **Ramovha Dabudi** has been farming for more than 10 years. Her yields have increased since the training and she is storing surplus maize at NTK.

Farmer **Ana Mufumadi** used to harvest 3-4 bags per bed, but this increased to 15-20 bags per bed after training, not counting what is sold as green maize before harvest. She also stores surplus at NTK with a portion converted into maize meal as and when her family needs it.

Farmer **Maphari Muthasedi** has been farming for the past 25-30 years; after training her yield improved from five bags to 15-20 bags, which according to her is impressive. Bags are stored at NTK for maize meal.

Farmer **Mrs Netshurumbew** has been farming for more than 10 years. The estimated yield before training used to be 5-10 bags. Although she has not yet harvested for grain, she has already sold green cobs and her projected grain yield is 20-25 bags.

- **BEACONSFIELD (training under WaterCare, K Mokwevhu, 2001/2002)**

Farmers are allocated plots of 1.286 ha divided into beds of 0.107 ha. Farmers are mainly women with more than 20 years experience in farming.

Tshinakaho Havhi is approximately 65 years old and used to get 5-7 bags per bed before training. Through the Adendorff training, conducted in Beaconsfield by Kenneth Mokwevhu in 2001/02, she could improve her yield to 10-15 bags per bed. The farmer pointed out that at some stage she managed to sell green maize from just one bed for R800. She indicated that her secret lies in measuring the fertilizer application accurately using the cap of a 2-liter cold drink bottle, exactly according to the training. Further, she keeps her plot weed free at all times. The farmer did at some stage plant groundnuts, which was bought by the local people directly from the fields.

The farmer said with confidence that she can compete with men working in the firms, that out of the money earned she successfully paid tuition fee for the two sons of whom one went to the University of Venda, and now both are employed.

Farmer **Madzhe Tshnakaho** is approximately 65 years old with an experience of 20 years in farming. She practiced skills acquired from the training, which improved her yield from three bags to 10-12 bags per bed, not counting the portion sold from the field as green mealies. She has implemented all the practices learned through the training

- **HOMU (training by WRC trainee Farmer Trainer, Kenneth Moabelo, 2003/2004)**

Homu irrigation scheme is one of the schemes where the new Farmer Trainers started presenting training from October 2003. At the time of this evaluation, only three of the modules had been presented, but the output of training conducted was amazing. The Limpopo Farmer Training Team visited the plot of **Paul Nhlakathe,** the chairperson of the scheme, to observe production practices as learned from the training offered. Subsequent follow-up confirmed that the farmer was able to sell the bulk of 60 000 cobs per hectare as green maize at R1, 00 per cob.

3.4 Proposed new Unit Standards to be developed by the SGB (Standards Generating Body)

The following six (6) Unit Standards were identified through the “gap analysis” and are to be submitted to the SGB for development and subsequent registration thereof with AgriSETA:

- Demonstrate an understanding of establishing a maize crop for small scale farmers
- Demonstrate an understanding of the control of witch weed or *striga hermonthica* in a maize crop
- Demonstrate an understanding of soil pH and its control measures in maize crops
- Demonstrate an understanding of the utilisation of natural resources
- Demonstrate an understanding of project management structures
- Demonstrate an understanding of the pre-development survey

Chapter 4

Potential Role of Agricultural Colleges in Farmer Training

4.1 Policy on Farmer Training in the Limpopo Province

The Agricultural Colleges in the Limpopo Province have taken a basic decision to provide training at the Further Education and Training (FET – Grade 9-12) level, rather than the Higher Education (HE) level (the level at which the Technikons and Universities provide services). Further, the Agricultural Colleges have decided to shift their focus towards the training of smallholder farmers, whereas before, they trained extension staff only. One of the challenges associated with offering farmer training is to further develop the Agricultural Colleges' capacity (skills and physical resources) to offer on-farm training.

The following mechanisms have been proposed by the Department's Limpopo Task Team on Farmer Training to improve smallholders' access to agricultural training in the Limpopo Province:

- Establishment of *provincial policy and strategies* on farmer training in Limpopo;
- Development of an *inventory and register* of agricultural training providers in Limpopo (as suggested in the LDA Farmer Training Policy, and with support from AgriSETA (Primary Agriculture Education and Training Authority);
- Development of nationally recognised *Farmer Trainer* and *Farmer* qualifications, and appropriate training and learning material for trainers and farmers, in collaboration with AgriSETA (for Farmer qualifications) and (for Farmer Trainer qualifications) ETDA (Education Training and Development Practices Education and Training Authority);
- Institutionalisation of farmer training in *Agricultural Colleges*; and
- Support of *existing* and establishment of *potential new* training providers in Limpopo, as appropriate.

4.2 Capacity of Colleges to conduct Farmer Training

➢ Madzivhandila College Of Agriculture

As part of the assessment, a briefing meeting was held on March 14, 2003 with the following people in the college:

1) Mr K A Tshikolomo	Principal
2) Mr S J Tshikosi	Vice-Rector, Academic
3) Mrs M C Tshisikule[11]	Vice-Rector, Research and Outreach

This report emanates from the above-mentioned meeting and physical assessment of the training fields in the college.

This college has been solely providing agricultural training to extension officers for the Department of Agriculture until early 2000. Due to changes of training needs and the labour market, the college has deviated from focusing only on providing theoretical three year

[1] Mrs MC Tshisikule has recently been appointed as the new Principal of Madzivhandila College of Agriculture. Mr Tshikolomo is currently Senior Manager: Human Resource Development for the Limpopo Department of Agriculture.

qualifications to incorporating short courses and providing three year courses that includes a large portion of practical work.

College governance

The college is currently governed by the Provincial Department of Agriculture, and mandated to train farmers and prospective farmers in the province (both formal and non-formal education and training programmes). The college has also appointed a college advisory committee with eleven members including seven staff members. The advisory committee advises the college by providing ideas and guidelines to ensure that the college's training programmes are relevant to the current farming systems as well as supporting the vision and mission of the college. The management of the college is composed of the college manager (Principal), three Deputy Managers (vice principals), four heads of departments and a farm management team.

Financial control

The college is financed by the Provincial Department of Agriculture through an annual budget that is spent on salaries, working capital and other issues pertaining to the training of both farmers and learners. To date the college has not encountered any financial problems.

The college also generates income through the sales of agricultural products produced at the college. Although part of the income is absorbed into the provincial department revenue, the college still holds some funds in the college fund reserved for emergency purposes. The college manager is mandated to approve the use of college funds up to R60 000.

Institutional and management capacity

The college management team, scientists, technicians, administration officers, clerks, security personnel and labourers capacitate the college as an institution. Various employees have specific tasks to perform in the institution enhancing farmer and student training. The management team of the college has acquired different skills and qualifications to assist them in making decisions and providing training for students and farmers.

Sustainability and performance

Since the college was established in 1982 as an affiliated institution of the Department of Agriculture, it has managed to perform well in training extension officers for the department. These officers are now key personnel in extension work in the province. The college underwent various restructuring processes. These vary from offering traditional knowledge focused programmes, to making it relevant to the needs of the people and to taking advantage of new opportunities which accompany the political, social, and economic transformation processes taking place in the country. In 2001 the college stopped the process of registering new students in order to re-focus the curriculum towards a needs oriented training. The college is poised to contribute to the reconstruction and development programme by broadening the base of skilled manpower in Agriculture.

The college programme is geared towards filling the knowledge gap in sustainable Agriculture by providing training in Animal Production and Crop Production. The dedication of the training officers in developing various unit standards, training materials and assessment documents, facilitates the college to perform well. The college conducts needs assessments to develop relevant short courses for the farmers.

Assessment of training capacity

Most staff members are able to train the students and farmers using outcomes based methods, although new staff members require some training in this respect. The Technical staff is more skilled in hands-on training, however, most of the scientists require more exposure to hands on practicals which include use of mechanization, calibration of sprayers, breeding and the use of various machinery which is available at the college.

Training facilities

Although most of the training facilities are available at the college campus, the majority of the trainers have a very basic knowledge on how to use it. More training needs to be conducted on how to use different training facilities especially modern machinery, e.g. bailing machines which are unused because of insufficient knowledge on its usage.

Training methodologies and tools

The college has conducted some training on participatory training methodologies for both technical and scientific staff. The technical personnel have had some exposure to adult training methodologies as they have been training extension officers.

So far, two (2) officers have been trained by GTZ on participatory methodologies. The program itself is important as it encourages farmers to be self reliant and able to take care of resources and the environment. Most farmers are not aware of the tools used when conducting training such as PRA. The college has a standard method (outcomes based) of writing training material that all trainers comply with; the method specifies the training outcomes, methodologies, content, and assessment criteria and material.

Use of audiovisual equipment when conducting training

The college has audiovisual equipment such as video machines, overhead projectors, slide projectors, video cameras and others. All equipment is accessible to the trainers at the college and only a minority of them are not able to use it properly.

Identified gaps for improving the training capacity of the college

- Use of videos and laptop computers
- Use of teaching aids
- Biometry
- Participatory methodologies and tools
- Use of various implements such as bailing machines, tractors, etc.
- Irrigation scheduling
- Processing of agricultural products
- Capacity and logistical resources for on-farm training

➢ Tompi Seleka College Of Agriculture

As part of the assessment, a briefing meeting was held on 10 February 2003 with the following people in the college:

1) Ramaboea Harry[1]	Principal
2) Tjebane A R	HOD, Community development
3) Buys M	Vice-Rector, Academic
4) Dladla M J	Vice-Rector, Research and Outreach

[1]

This report emanates from the above-mentioned meeting and physical assessment of the training fields in the college.

Tompi Seleka Agricultural College was established in 1961. It has been solely providing agricultural training to extension officers for the Department of Agriculture until 1991. Due to changes of training needs and the labour market, the college has deviated from focusing only on providing three-year qualifications to incorporating short courses and learnerships into their system.

Administration

The Provincial Department of Agriculture (LDA) administers the college. Within the broader organogram of the Department, the college falls under the Directorate Human Resource Development. The management of the college is composed of the College Manager (Principal), three Deputy Managers (vice principals), four heads of departments and the farm management team.

Financial control

The college receives an annual budget from the Department of Agriculture (provincial). The college management is responsible for the management and use of the budget. The Head of the Department of Agriculture monitors college budget management. Government treasury is responsible for auditing and conducting inspections. There is a college account wherein some money generated through student practical activities is kept. This account is managed by the College management and audited annually by private auditors. The departmental financial office inspects and monitors the utilization of this college account.

Training capacity

The college has classrooms and hostel capacity than can cater for about 400 learners and 16 trainers. The current areas of study are:

- Plant production,
- Animal production, and
- Hospitality services.

The college owns a farm of about 1400ha for use during learners' practical sessions with about a 100 cattle on the farm. An area of about 50ha is suitable for irrigation, however only 10ha of the land is developed and being used for irrigation practicals. The following training fields are available within the college:
A poultry unit with the capacity to handle 7000 broilers and 1200 layers are available for practical use. The broiler unit is operating at 100%, and the layer unit at 50% of capacity.
A fishery unit with six fishponds each and the capacity to handle 10 000 fingerlings. The fishery is currently being revived.

[1] Mr S Sitholimela has recently been appointed as the new Principal of Tompi Seleka College of Agriculture. Mr Ramaboea is currently District Head for Sekhukhune District.

A dairy and small stock unit which is operating at a very low capacity. A 10-sow unit is in operation, but facilities in both the piggery and the dairy needs to be upgraded.
A computer centre, library and laboratory facilities are available.

Training methodologies

For farmer training, the college offers training through a production approach or a "learning on the job" approach. The short courses offered are based on the production process for the product being studied. For example during broiler production, farmers arrive in the college, prepare the house and receive chicks that they will raise until marketing. Throughout the six weeks of training, the learners will look after their batch and discuss their observations and each activity in the chicken house with their trainer. The training also includes theoretical aspects of each subject.

The college has a standard method (outcomes based) of writing training material that all trainers comply with; the method specifies the training outcomes, methodologies, content, and assessment criteria and material.

Trainers' knowledge of adult learning

Fifty percent of the trainers at the college have attended and completed the Assessor training course as well as the Moderator training course offered by Behaviour Systems Development (BSD). These courses were recommended by AgriSETA as a pre-condition for offering learnerships in the college and include as well as emphasize the use of adult learning principles and participatory methods during training. The courses prepare the trainers to be able to assess the learner's prior learning status in order to benchmark the learners for the required level of training. The college plans to provide for the remaining trainers to undergo this training.

The college has audiovisual material that the trainers use regularly for training programmes.

Identified gaps for improving the training capacity of the college

The following areas have been identified for improvement:
- Training on OBE for the untrained trainers
- Establishing the irrigation system
- Mobile training kits
- Hydroponics production unit
- Upgrading the pig farming unit
- Capacity and logistical resources to conduct on-farm training in the villages.
- Training of lecturers on the approach and content of the Facilitators Guide.

4.3 Conclusion

The two agricultural colleges are on track with the new developments of the training and education system in South Africa. Where they are lacking i.e. OBE methods of training, participatory methods and correct use of equipment, they have expressed wishes to address such issues. Further capacitating these colleges in areas that have been declared wanting will strengthen these entities and ensure that they can best implement future community training projects independently.

The role of the Outreach units at both colleges should grow rapidly in response to the new college mandate of practical, accessible training and support for smallholder farmers.

4.4 Resource Needs at Colleges with respect to effective Farmer Training

The needs of the training institutions were revisited after the trainers from both the institutions had started on community training programmes. Since they were already offering training, the trainers were able to identify the gaps that they experienced and that could limit their efficiency. It was noted that the colleges are traditional lecturing institutions; giving training at community level requires a different approach as well as facilities in order for it to be successful. The following are the identified needs that are required for the colleges to effectively present training at community level:

- Small tractor with implements: mouldboard and disk ploughs, furrow opener and planter
- Transport for trainers for on-site training
- Small packs of seeds (SR 52, PAN 473, SNK 2147, and ZM 521)
- Small bags of fertilizers (2:3:2, 3:2:1, and LAN (KAN))
- Measuring tapes
- Knives
- Sets of protective clothing (work suits, nose masks, hand gloves, face shields, goggles and water boots)
- Hand hoe
- TV and video
- Flip charts and markers
- A dedicated training unit for managing and delivering the training
- The training material as Facilitator's Guide in a compact, mobile format, which would be user friendly no only in terms of the layout of the training content, but also the packaging.

4.5 Evaluation of Farmer Training conducted by College Lecturers and Extension Officers

The Limpopo Farmer Training Team which was developed through this WRC project has grown into a highly motivated, closely knit unit across cultural and discipline barriers which is proud of its ability to support and guide each other and successfully welcome newcomers into their fold.

They see their role as Farmer Trainers as central to the development process, as it enables farmers to dramatically and sustainably increase their farming output and consequently the farmers' personal confidence.

Similarly, the new Farmer Trainers have experienced rapid growth in their own skills, but more significantly, the experience has given members of the Limpopo Farmer Training Team a new sense of purpose and has boosted their self-confidence.

One member describes himself as formerly being a 'discouraged Extension Officer' who found it hard to get out of bed in the morning and spent his days whiling away his time with idle talk. Over the past two years, this changed completely, since he now cannot find enough hours in the day to finish what he wants to achieve. Farmers' yields have improved dramatically through his training and he is now highly respected by the communities where he is working.

Another member used to believe she was too old to still achieve something in life. Through participation in the Limpopo Farmer Training Team, she has developed a new purpose in life and transmits this energy to others. She says: 'I used to have knowledge and skills, but no confidence. Now I am confident, therefore I can transfer the knowledge I have successfully.'

Another member describes how he was always of the opinion that 'training' means 'offloading information', but that as college trainer he used to have nothing to do with how people used the information afterwards. Seeing farmers literally reaping the success of his training in such a short space of time have been a revelation, therefore he wants to devote his full energy to this. As he said in wonder when he saw the rich green maize harvest in the field: 'This is real!'

The following points were noted during sessions where the College Lecturers and Extension Officers were presenting the training to farmer groups in the field:

Trainers initially spent too much time on re-capping which they were later able to rectify by **concentrating on the key issues** of the lecture only. Do not lengthen your lecture or waste the farmer's time unnecessarily. Keep in mind that the longer your training is, the more the older people have to concentrate and the more difficult it becomes.

Transfer or convey the information in the Facilitators Guide correctly by **keeping to the original specifications,** e.g. four fingers deep, three rulers apart, etc. Changing of standards or specifications could cause serious problems to colleagues who come after you and are not aware of the changes you have made - it can also confuse the farmers. (We had a good example of a case where the Trainer said that farmers could plant maize in rows, three human feet apart. This was very accurate when a male farmer demonstrated this, however when a lady followed this example it was found that her feet were much smaller than that of the male farmer and the measurements given were now completely incorrect).

Be sure that all the farmers really **understand the language** in which the training is given. An incident was experienced where the Trainer asked if the Venda farmers understood the "Sepedi" language. They all said yes and gave him permission to continue with the training. However, the opposite could soon be observed, through the reaction and body language of farmers as they failed to respond to questions asked by the Trainer.

Trainers must remember that this training is not merely the "transfer of technology". It is rather **a message of hope** and **empowerment** to repair the broken images and overcome the existing hunger and poverty. This message is aimed at a very special audience "the old and Illiterate" farmers in the group. The trainer's **words, deeds and actions** (The Trainer's body language) is what is required to convince the farmer of your love, care, understanding and encouragement to make him or her believe in themselves and be willing to try and do something for themselves.

Constantly **watch the body language** of the farmers (their unspoken message which they beam out to you) - our audience was lost or left behind on a number of occasions. Fortunately the situation allowed it to be corrected through **group participation,** be it in the form of singing or getting farmers to demonstrate their cultural practices, etc.

When training or transferring a message, the Trainer must thoroughly **know the subject**. Everything that our trainer needs to know or transfer at this **level or stage** is captured in the Facilitator's Guide. By knowing your subject well you create confidence, improve your body language, generate hope amongst farmers and you are empowered to answer farmers' questions properly - all aspects which influences the presentation positively.

Preparing for Training: - The Trainer should read through the relevant chapter in the Facilitators' Guide at least three or four times to make sure that he/she really understands the subject. Only after really understanding the subject, he/she should then try and identify the **true needs**, **problems** and **fears of the farmers** regarding the chapter that he/she is to present. (In the majority of cases the **needs, problems and fears** would be the **key issues**). This allows the Trainer to identify his/her own problems, needs and fears (again it is almost certain to be the key issues which has already been identified for the farmers.) Only now can he/she

concentrate on **key issues** such as **“needs based training”** and **“correcting the wrongs”** which were identified in the farmers’ agricultural practices.

Practical Demonstrations: - More emphasis should be placed on and time invested in simple, cheap and relevant small-scale demonstrations during each lecture presented. It is a fact that a good demonstration **illustrates the theory, which** the Trainer is trying to convey. Demonstrations should be done clearly (for all to see) and slowly (allow all to understand), with as much farmer participation or involvement as possible. (Should the Trainer not be able to prepare a demonstration for each lecture, it could perhaps suggest that the Trainer does not fully understand the theory, which is to be presented).

Farmer Participation: - Trainers should ensure that as much farmer participation or involvement as possible takes place during a lecture - it does much to restore broken images and helps them to remember their lesson. Ways of getting farmer involvement is to get groups of farmers to discuss a certain topic, singing and encouraging farmers to demonstrate their cultural or present methods of ploughing, planting, etc.

Different Personalities: - It is clear that since all people have different personalities and characteristics, it will result in different types of presentations. This should not be seen as wrong, for the following is what really matters: -

a. Is the information that he/she is transferring, correct?
b. Do the farmers really understand this message?

Keeping Training Simple and to the Point: -

Do not complicate your training. Keep it simple and to the point. Be well prepared and train from your Facilitators’ Guide. Be very careful not to confuse farmers, e.g. when teaching about fertilizer application, concentrate on the “proppie method” and the placing of the fertilizer only; do not get involved in plant populations and complicated rates of application, etc. It is simple, the more plants one has, the more “proppies” one will apply and the more “proppies” applied simply means more fertilizer has been applied.

Confusion: -

It was observed how all the good and hard work which went into a well prepared and presented lecture, was undone simply because of one point where the Trainer got confused with his facts (e.g. the NPK in fertilizer) and then continued to confuse the farmers. Again, it is a matter of keeping it simple, explaining the point slowly and clearly and not being afraid to refer back to the Facilitators’ Guide or notes when you as Trainer feel unsure of yourself.

ABET Level 1: -

Trainers should remember that the training which they are presenting now, is aimed at ABET Level 1 learners (the very bottom of the ladder). It is therefore very important that farmers are **not flooded with unnecessary information**, which they do not understand or are unable to use at this stage. It is therefore important that when farmers at this level are trained, for instance, on the subject “ploughing”, the Trainer should concentrate on ploughing only. ABET Level 2 and 3 can follow-up on things like minimum or zero tillage. **We are there to lay the base or foundation of all future training**, and the stronger we make our foundation the easier and more sustainable it will be for all involved.

When sharing a lecture or having to do a presentation together, **Trainers should co-ordinate** their presentation and participation very carefully. An entire farmer group was almost lost (they refused to attend further training) due to a poorly presented lecture that was the result of poor co-ordination.

With reference to the Training Tools [TEO.1] it says:

“Training is;
Like the aroma of a flower, this draws a bee.
The bee uses this to make honey.
Or
Like the smell of a skunk, this frightens away its enemy.
Your aroma will make the difference to your Training!”

The Lack of Practical Experience: -

The lack of practical experience is showing to be a serious problem for many of our Trainers. (It must be noted that they are not to be blamed for this shortcoming, they simply have not had the opportunity.) However, this is especially visible in their **preparation,** as they find it exceptionally difficult to identify the real **key issues** in the chapter which they have to present - it is also very evident in their **presentations** and **practical demonstrations**, and when farmers have asked Trainers questions related to the practical side of the lecture and Trainers have been unable to give a satisfactory answer due to the lack of experience.

It has become very clear that Trainers should be empowered and equipped with all the different aspects required for this level of training, e.g. **Training Principles, Theory, Practical Understanding and the Transfer of Technology,** before going to the field to do the training. Trainers must be properly qualified, *as the old and illiterate farmers who attend the training should never be underestimated.*

When starting a new lecture, the Trainer should share the programme with his audience, let them to know what they are to expect. This immediately puts them at ease and helps them to concentrate on the lecture.

Showing the various measurements: -

Trainers should be extremely careful and remember that the majority of the audience may be illiterate and would therefore not understand when they are told to plough 25cm deep, or to plant 8cm or to apply 75grams of fertilizer per plant, etc. These are all **the key issues** in a lecture and **must be shown** to the farmers, e.g. 4 fingers deep instead of 8cm, or plough to the depth of a man’s forearm instead of 25cm and apply one “proppie” of fertilizer instead of the required 75grams.

Farmer Committees: -

More emphasis and time should be placed on helping the farmers to understand **the role and responsibility of the Farmers Group Committee**, which they have elected. For instance, it is the function of the elected committee to see to it that mechanisation contractors adhere to the standards set during the farmer training. The committee should also assist farmers to acquire mechanisation services and the correct agricultural inputs, etc. This is critical as it helps people to take **ownership, which enhances leadership and sustainability.**

Chapter 5

5. Introduction to Outcomes Based Education (OBE) for Trainers

Note: This chapter highlights issues that were addressed during the workshop on "Training of Trainers to develop Outcomes Based Education material"

5.1 Adult Basic Education Training (ABET) teaching principles

Using the nominal round technique of assimilating information, the following characteristics of the Adult Learner were identified by trainers during the Training of Trainers Workshop:

- Learn easily through visual aids
- More practical than theory
- Adults (particularly women) have other commitments – do not waste their time. Ensure that training is relevant
- Believe more in practices related to their culture
- Do not grasp information quickly unless practically applied
- Adults need small breaks to maintain concentration levels
- Recall information slowly but accurately
- Forget easily if not practically applied
- Skeptical about new information – require proof
- Language must be understandable
- Have a wealth of knowledge and experience that can be built on, but may also be a barrier to accepting change
- Fear of adopting change
- Want to share experiences
- Do not want competition
- Demand respect
- Like recognition
- Easily affected by environment
- Learning experience is influenced by:
    - social,
    - emotional,
    - economic, and
    - cultural background
- Have problems with listening and hearing skills
- Vision decreases
- Afraid of failure
- Different learning styles

After all the characteristics of adult learners as identified by the group had been listed, participants were given an extract on motivation of adult learners to read. After reading the extract, the original list of characteristics was revisited and modified.

5.1.2 How to motivate adult learners

Once the characteristics of Adult Learners had been discussed, a number of factors that may cause resistance to change and learning were noted, namely:

- *Negative self-image* - Often learners have had a bad experience in an educational situation. This often makes them feel that they are too dumb to learn – a well-known phenomenon amongst illiterate people.
- *Lack of clarity in educator's instructions* - If learners are unsure of what is expected of them, they will not trust the trainer.
- *Fear of the unknown* - This is usually the greatest cause of resistance to learning. Learning brings change and change is unsettling.
- *Apparent irrelevance to the learning activity* - If the learner views the learning to have no meaning to the work or life situation of the learner there will be resistance from the learner.
- *Level of the required learning is inappropriate* - Resistance to learning can arise if the tasks trainers require of learners are too complex. If the trainer works too fast and the trainer does not check to see whether learners are keeping up with their pace, they often lose the learners.
- *Dislike of the trainer's teaching style* - Certain training methods may irritate or intimidate learners.

By means of a group work exercise, potential techniques to overcome this resistance to change in adult learners were generated. Participants were divided into three groups, each of which was assigned two potential causes for resistance to change, for which to generate potential techniques to counter the resistance.

Results are summarised below:

5.1.2.1 Negative self-image

Often learners have had a bad experience in an educational situation. This often makes them feel that they are too "dumb" to learn, – a well-known phenomenon amongst illiterate people.

Potential means of addressing this issue identified during group work include:
- Appreciate their ideas and views
- Encourage participation in decision making
- Recognise their existing knowledge and experience
- Create a conducive learning environment
- Aim training at a relevant level.

5.1.2.2 Lack of clarity in educator's instructions

If learners are unsure of what is expected of them, they will not trust the trainer.

Potential means of addressing this issue identified during group work include:
- Be friendly
- Allow them to express themselves
- The teaching method and mannerisms are important
- Instructor must have a clear knowledge of the subject.

5.1.2.3 Fear of the unknown

Fear of the unknown is usually the greatest cause of resistance to learning. Learning brings change and change is unsettling.

Potential means of addressing this issue identified during group work include:
- Link material with something familiar
- Encourage involvement and participation
- Make them laugh

- Identify needs through consultation, and link training to needs
- Involve trainees in decision making and planning of training
- Use simple language
- Encourage questions.

5.1.2.4 Apparant irrelevance of the learning activity

If the learner views the learning to have no meaning to his/her work or life, there will be resistance from the learner.

Potential means of addressing this issue identified during group work include:
- Consultation with learners to determine real training needs
- Identification of existing indigenous knowledge as a basis of learning
- Indicate the benefits of learning

5.1.2.5 Level of the required learning is inappropriate

Resistance to learning can arise if the tasks trainers require of learners are too complex. If the trainer works too fast and the trainer does not check to see whether learners are keeping up with their pace they often lose the learners.

Potential means of addressing this issue identified during group work include:
- The instructor must come down to the level of the trainees
- The instructor must adjust the pace according to the response of the learners
- Tell jokes relevant to the subject matter
- Encourage group participation

5.1.2.6 Dislike of the trainer's teaching style

Certain training methods may irritate or intimidate learners.

Potential means of addressing this issue identified during group work include:
- Encourage two-way communication without intimidation
- Constantly evaluate your training results / progress and the attitude of your learners
- Use different teaching methods
- Use appropriate humour
- Encourage students to assist with presentation
- Use simple language
- Speak slowly and clearly
- Attire / dress appropriately

5.2 Participatory Methods and Dialogic Learning

Participatory training methods ensure that training is **learning**-centred and not teacher- or learner-centred. Individuals choose methods of learning that are linked to their senses. Some learners predominantly use one sense while others use different senses at different times. A training programme should therefore appeal to the following three main senses:

- Visual – the learner like to see the material
- Auditory – the learner likes to hear the material
- Kinaesthetic – the learner learns by doing and experiencing

The trainer should take note of the following issues when using participatory training methods:

- The participatory method must suit the learners. Illiterate learners do well using discussion, poster presentation, role-play, etc.
- Experiential learning is very important. Demonstrations and allowing learners to do demonstrations concretises the learning that has taken place.
- Always use a method that you feel comfortable with.
- Do not force people to talk. Sharing comes with time.
- Never ask a learner a direct question! This puts the learner on the spot and is totally in contrast to OBE principles.

Examples of participatory training methods that may be used include:

Group work	Role-play and simulation
Discussions	Presentation by learners
Project method	Case studies
Brainstorming	Laboratory work (field visit)

5.3 Development of Training Material in OBE Format

An "OBE Training of Trainers Workshop" was held between 17 and 21 February 2003 and between 30 March and 4 April 2003 at the National Community Water and Sanitation Training Institute (NCWSTI), University of the North. The aim of this workshop was to familiarise the Limpopo Farmer Training Team with the basic principles and requirements for designing Specific Outcomes and Assessment Criteria.

The specific objectives of the workshop were to:

- Ensure that participants have a thorough understanding of the characteristics and needs of adult learners;
- Provide participants with some basic techniques with which to motivate adult learners;
- Familiarise participants with the training material and methods used by Johann Adendorff;
- Familiarise participants with the principles and requirements for designing:
- Specific outcomes; and
- Assessment criteria; and
- Assist participants with the compilation of a Facilitators' Guide.

The workshop was organised, co-ordinated and co-facilitated by Mr. Marius Botha of ARC-ILI (at the time) and facilitated by Dr. Ursula Moodie of NCWSTI.

ATTENDANCE
The Workshop was attended by the following participants:

Name	**Occupation**	**Organization**
1. Molepo Matshepo	Agricultural Scientist	Department of Agriculture
2. Rammela Phillip	Agricultural Scientist	Department of Agriculture
3. Mathebula Joseph	Chief Agricultural Technician	Department of Agriculture
4. Khorommbi Charles	Chief Agricultural Technician	Department of Agriculture
5. Nomatwa Jethro	Agricultural Technician	Department of Agriculture
6. Montjane Amos	Agricultural Technician	Tompi Seleka College of Agriculture
7. Tefo Stephen	Environmental Health Officer	Department of Health

8. Manku Lesetja	Agricultural Technician	Department of Agriculture
9. Mapholo Harry	Agricultural Technician	Department of Agriculture
10. Botha Marius	FSRE-Coordinator	ARC-IAE(previously)
11. Coetzee Liezl	Social Scientist	Golden Associates Africa(previously)
12. Dolamo Joseph	CAT	Department of Agriculture
13. Masola Lucas	Chief Agricultural Technician	Department of Agriculture
14. De Lange Marna	Engineer	IWMI(previously)
15. Tshipuliso Thomas	Agric. Dev. Technician	Department of Agriculture
16. Mello Kompo	Agricultural Scientist	Department of Agriculture
17. Lekgau Sydwell	Agricultural Economist	Madzivandila College of Agriculture
18. Moabela Kenneth	Agricultural Scientist (Lecturer)	Tompi Seleka College of Agriculture
19.Muthapuli Lufuno	Chief Agricultural Technician	Department of Agriculture

The course commenced on Monday 17 February at 8.30am with a Welcome and Background to the NCWSTI.

The importance of an Introduction session was highlighted for the following reasons:
- Getting to know one another
- Safety and respect is created
- The trainer gets to know the learners if no needs assessment or skills audit have been done.

Factors that need to be considered when training is to be provided to illiterate people were emphasized. With this in mind, the 'Introductions' session involved participants introducing themselves to the group by means of posters in which the use of pictures rather than words was to be maximised. Information to be included on the poster included personal information, as well as background on the individuals' previous experience in training in general and Outcomes Based Training specifically.

The Introduction exercise familiarised participants with each other's backgrounds, which varied widely. It also gave the course facilitator an opportunity to conduct a rapid Gap Analysis, determining the level of experience participants have in Outcomes Based Education and training in general.

5.3.1 Overview of Smallholder Agriculture

After the Introductions, Mrs. Marna de Lange, of the International Water Management Institute (IWMI), presented an overview of smallholder agriculture in South Africa, with emphasis on training initiatives for smallholder farmers and the important role of this specific training in the RESIS programme in the province.

The overview of smallholder agriculture started with a look at the national context in which development in this sector takes place. In this regard, the country's Agriculture Sector Strategy, as well as the National Strategy on Education and Training for Agricultural and Rural Development was noted. The National Human Resources Development Policy was also

discussed, followed by a look at SAQA/NQF requirements for accreditation of training standards.

At a provincial level it was indicated that the Limpopo Farmer Training Initiative conforms with the principles laid out in the the proposed Limpopo Farmer Training Policy because it:

- Contributes to national and provincial strategies;
- Fits into the SAQA/NQF framework;
- Promotes access to the previously disadvantaged;
- Focuses on practical skills transfer;
- Is designed to be demand driven;
- Will be cost effective; and
- Makes provision for monitoring & review.

5.3.2 Mechanisms to improve farmers' access to training

This initiative is implemented through the province's Agricultural Colleges, Tompi Seleka and Madhzivandila, as well as other training providers. Within the colleges, the emphasis has shifted from extension training to farmer training.

The following mechanisms aimed to improve farmers' access to training were discussed:
- Limpopo Farmer Training Policy
- Inventory and register of training providers
- Recognised qualifications for Farmers and Farmer Trainers
- Farmer training through Agricultural Colleges
- Farmer training through ongoing Departmental programmes and activities
- Farmer training through other providers**Farmer Training Needs**

The wide range of needs to be catered for by existing and potential future training programmes was explained with the aid of the matrix discussed in Chapter 1, Table 1.2. It was noted that potential irrigation farmers, such as are catered for by RESIS, only form a small component (56 000 households on a total of 100 000 hectares) of the total spectrum of farmers requiring training in South Africa. Dryland fields by contrast take up approximately 2 Million ha, on which 1.7 Million households rely, while 2.4 Million households have homestead yards, covering a total area of about 200 000 ha. Furthermore about 12 Million ha is used as grazing land for livestock, by approximately 1 700 000 households. The spectrum of farmers was divided into 3 categories:

- Food insecure households,
- Subsistence and emerging farmers, and
- Profitable commercial small-scale farmers.

The need to define particular training needs for this whole spectrum of farmers and activities was emphasized. Furthermore, the team was trained to develop OBE-Training Material from existing training material through focussing specifically on the structuring of the content of the training material.

Content should support the achievement of the outcomes. Content should cover the following areas: *Knowledge* - the ideas that learners will learn and remember; *Skills* - the practical capabilities that form the core of most learning programmes; and *Values* and *Attitudes* - the underlying ideas behind the skills and knowledge. Inclusion of too much content for the allocated timeframe must be guarded against. Content should be sequenced from simple to complex and should be prioritised. When prioritising content a distinction should be made between the details the learners must know (essential content), those they should know and the things they could know. The essential content should be the main focus when prioritising

the content. This essential content is the content that should be accessible to the learners and which should assist the learners to successfully achieve the learning outcomes.

Outcomes guide the selection of content. Content that is selected using the learning outcomes as a guide, should be relevant to the learners' needs. Beware not to overload the learner with information. The amount of content offered should be aligned to the amount of time that the learners have avbailable to cope with the content. If there is an overload of content, effective learning will not take place. Content can be subdivided into smaller units such as modules or learning units each with its own outcomes. This prevents the learner from being overwhelmed by huge amounts of content and allows him/her to grasp and remember the content of the smaller unit.

Content should be sequenced from simple to complex, topic by topic, chronologically, or place to place.

5.4 Planning training sessions

The importance of planning was emphasized during a session in which participants were asked to describe the range of activities required in the planning of a training session. The exercise involved describing the actions on cards, which was noted as a useful method for activities such as planning, since cards can be moved around as new information becomes available, or sequencing of events is refined. The session started with some basic issues to consider when using cards, notably:

- One idea per card;
- Write phrases not single words;
- Maximum of three lines per card; and
- Write clearly.

The exercise generated a variety of different inputs from participants. It indicated the extensive nature of the planning process, starting with initial contact with the learners, through the analysis of training needs to the actual course content and on to monitoring and evaluation of the impact of training, and potential modification of the programme to adjust further needs.

5.5 Fieldwork

The second day of the workshop involved a field trip to the Mauluma / Beaconsfield Irrigation Scheme in the Ndzelele Valley, where Johann Adendorff was presenting training to scheme farmers. The purpose of the visit was that workshop participants could get first hand experience of the training methods and material, and particularly note the success with which the target community receives these methods.

5.5.1 Preparation For Fieldwork

Before the field visit on Day 2, participants were briefed on the day's fieldwork exercise during a preparation session at the end of Day 1. This session, conducted by Mr. Marius Botha, involved a background to Johann Adendorff's training philosophy. It also focused on understanding the target audience for training (emerging farmers) as a vulnerable group, likened to a "broken bottle" in need of repair, and the psychology behind the development of training material on this level.

A short video was shown to provide workshop participants with a basic background on the training style used by Johann Adendorff. This was followed by a brief discussion session during which some aspects from the video, notably techniques used to involve trainees and encourage active participation, were highlighted.

Finally, participants were asked to write down their personal training needs.

5.5.2 Observe Training

The field visit commenced with an observation of the training session conducted by Johann Adendorff. This particular session covered the topics of “pH of Soil” and “Witch weed”, both little understood problems maize farmers experience commonly.

During the observation, workshop participants could see how issues discussed during the previous day’s sessions dealing with basic concepts, notably the motivation of adult learners through appropriate attitude and techniques, can be dealt with in practice.

5.5.3 Consultation With Johann Adendorff

Following the training session, workshop participants were given the opportunity to consult with Johann Adendorff, giving comments and asking questions relating to the training session they had just observed, as well as training methods used in general.

An important issue that was raised during this discussion was the attitude of the trainer. The image of a broken bottle was used to describe the target group for training, which are poverty stricken rural farmers whose self-image has been broken. The ‘glue’ that should be used to mend the broken bottle (=image), is “LOVE” which is explained as follows:

- Live and be alive to their problems, needs, fears and aspirations;
- Overlook their shortcomings;
- Voice a message of hope and encouragement; and
- Extend a helping hand.

A point that was emphasized by Johann Adendorff was that participants must not underestimate their own ability as trainers, and must instead recognize their own particular talents which, combined with the correct attitude of love and understanding, can be transformed into a personalized approach to presenting the training.

A comment was made by one of the workshop participants that the training session was too long, resulting in fatigue and loss of concentration among trainees. All agreed on this, but the need for compacting much work into a short time due to budgetary constraints, and the matter of filming the sessions, was noted. It was however agreed that trainers should take care not to overload trainees with too much information in one session.

An aspect of the training session that was particularly commended by participants was the fact that trainees were asked to repeat a verse of a song that they sang during the introductory session. This served a double purpose of:

- Building their confidence by complimenting their song, and
- Serving as an ideal tool to note the importance of all voices / parts coming together to contribute to the beauty of the song. This analogy was then used to explain the importance of all the different role-players, including farmers, extension officers, trainers and others contributing to the development process.

The manner, in which farmers were continually encouraged to approach their extension officers for further assistance with soil analysis, application of agricultural lime, as well as other issues, was commended by a workshop participant. It was noted that the external trainer is often not available to assist farmers after the training, and that this is the function of the extension staff. The fact that farmers are often reluctant to consult their extension officers was noted as an important issue that needs to be addressed, and the method of using the song to emphasize the need for working together was considered appropriate.

5.5.4 Training impact assessment

The final component of the fieldwork day involved an assessment of the impact the training has for farmers. This was done in groups, two of which went to meet farmers on their lands, while another two went into the village to consult with farmers there. Representatives accompanied all four groups from the village and/or extension officers, who assisted with identifying farmers to consult with, and provide interpretation where necessary. The groups were provided with a list of questions designed to evaluate the impact of training.

Revision of days 1 & 2.

Day 3 commenced with a revision session during which participants were asked to recall the most important aspects of the first two days' work.

Day 1: Basic Concepts
Aspects that were noted concerning the first day's introduction of basic concepts session were:
Adult learner characteristics and treatment;
Visual representation of self;
Use of group / teamwork;
Participation and contribution of all;
Good pacing of work;
Importance of planning and visiting the area;
Classification of breadline issues and food security;
Videoclips of Johann Adendorff's training;
The cost of the course; and
Expectations and fears.

Day 2: Fieldwork
The recapping of the fieldwork day referred back to the Personal Training Needs that participants were asked to note during the preparation for the fieldwork session. They were now asked to re-examine those needs in the light of the training that was offered, noting how some may have been addressed or not.

Participants were asked to give their personal experience of the training, and then to identify further training needs.

The response to the field day and direct experience of the Adendorff approach was predominantly positive with regards to the method whereby farmers are encouraged and involved in the training, and the use of stories and analogies to simplify complicated concepts to a level at which the farmers can understand and remember. Gaps were however noted, particularly with regards to issues such as use of indigenous knowledge and technology. All agreed that such information should also be incorporated into the training content.

5.5.5 Learning Tasks

The concept of Learning Tasks that was first introduced during the first day's introductory sessions, was expanded in more detail on Day 3. This involved a closer look at the concepts of Dialogic Teaching and Learning Tasks as described below.

- **Dialogic Teaching**

Dialogic teaching was described as dialogue between learner and trainer, as well as between learner and learner. It was emphasized that everyone in the learning situation learns, including the trainer. Participants were asked to remember that the adult learner comes to the learning situation with a wealth of knowledge and experience, which needs to be appreciated and built upon.

- **Learning Tasks**

It was noted that learning tasks are not only activities that learners do, and should not be viewed as add-on exercises to be done after the content has been given to the learners. Learning tasks also do not test if the learners have grasped the content given to them. Learning tasks structure dialogue with the learner, and should be integrated into the training material. Learning tasks are a way of ensuring that learners engage with new content, no matter what means of presentation is used.

Learning tasks are open questions to which the learner should respond therefore there will be no *wrong* answers. Open questions invite reflection, consider personal opinions and allow learners to consider implications of their actions**.**
It was noted that learning tasks should always begin with an "action" verb, e.g:
Write..
Discuss..
Compare..

The importance of first determining what the learners know before adding new content was emphasized, as was the need to allow learners to work with new content.

5.5.6 Unit Standard Requirements

The main objective of the workshop, which was for participants to develop specific outcomes and assessment criteria for Unit Standards to be developed for the Adendorff Approach, was addressed on Day 3. This was done once participants had been familiarised with a range of training concepts as well as gained direct exposure to the training approach during the day of fieldwork. Detail about the requirements for writing Outcomes and Assessment criteria was provided, after which participants were divided into groups and tasked to start developing outcomes and assessment criteria for specific training modules.

5.5.6.1 Outcomes

The expected learning outcomes, that is, what the learner should be able to do on completion of the learning event, should be comprised of knowledge, skills and values that are relevant to the learner's context or immediate environment. In South Africa both critical cross-field outcomes and specific outcomes are used.

The intended outcomes are the starting point when designing training material. Outcomes can be divided into three categories namely: knowledge outcomes; skills outcomes and attitude outcomes:

- *Knowledge outcomes* suggest how the learners will demonstrate the knowledge gained from the learning.
- *Skills outcomes* are how the learner applies the knowledge gained.
- *Attitude outcomes* refer to the attitudes, beliefs and characteristics that learners can develop in respect of the learning taking place.

The learning outcomes should be clearly stated so that the learners and educators can be held accountable for the learners' achievement of the outcomes.

Learning outcomes as the centre of the design of the learning programme, should clearly state what the learners should achieve at the end of the learning event. Learning outcomes should be quantifiable and verifiable.

5.5.7 Development of Outcomes and Assessment Criteria

On Day 4 the "work" component of the workshop began in earnest as participants were divided into three groups, each assigned with one of the training modules used by Johann Adendorff, and asked to develop Specific Outcomes and Assessment Criteria for these modules.

5.5.7.1 GAP Analysis

Throughout the training workshop, participants identified a number of gaps in the material presented in the Adendorff Approach, which it was felt should be addressed in a comprehensive training package to be presented to farmers. These gaps were summarised, and participants were provided with tasks to complete before the follow up workshop, which was scheduled to take place during the week of 30 March – 4 April 2003.

5.5.8 The Process Summarised:

In March/April 2003, nominees from among the Agricultural Colleges, Districts, BASED and a successful farmer attended a one-week training course at NCWSTI. Aspects covered were participatory training methodology, ABET principles and methodologies, how to develop OBE material and how this fits in with the requirements of the South African Qualifications Authority (SAQA). The Limpopo Farmer Training Team was also exposed to the actual situation on the ground by conducting an assessment on irrigation schemes in Vhembe District.

As 'homework' the Limpopo Farmer Training Team used their new knowledge to develop the Specific Outcomes and Assessment Criteria for the RESIS crop production modules. This output was consolidated at a follow-up workshop, which was attended by ten members. The team's approach was to take the training of Johann Adendorff and modified it into Unit Standard format. Then the Facilitators' Guide was developed, which contains the Unit Standard text and the training modules for crop production, interspersed with "tips for trainers" of adult learners.

This was a very big undertaking which is all the more remarkable because team members completed it along with their normal duties. The Limpopo Farmer Training Team reported on their work to a meeting of the Task Team on Farmer Training in Polokwane on 12 August 2003 and to the WRC Steering Committee on 30 October 2003. In accordance with the Concept

Plan, Outcomes-Based Material was thus developed for the crop production training offered under the RESIS Programme. In addition, the Facilitators' Guide was developed and is currently being tested and refined in the field. This has been a major undertaking and a first step to start filling the national gap in ABET level agricultural training material. In the process, an internal departmental team, the Limpopo Farmer Training Team, has been established with the skills and capacity to develop further material to fill the gaps identified in the Matrix discussed in Chapter 1, Table 1.2.

The process used, created the following:

- Internal departmental skills and capacity;
- The Specific Outcomes and Assessment criteria for Unit Standards; and
- The actual training materials, captured in a Facilitators' Guide.

Figure 5.5.1: Introducing yourself the ABET-way.

Figure 5.5.2: Group work during the Workshop at NCWSTI.

Figure 5.5.3: Attending Soil-pH training in the field in the Nzhelele Valley.

Figure 5.5.4: Presenting group work the ABET-way during the Workshop at NCWSTI.

5.5.9 Written Outcomes and Assessment Criteria for existing material

This section provides an overview of the aspects of outcomes-based education that are covered in the respective training modules. The information forms part of the package developed by NCWSTI for the training of trainers' outcomes-based education workshop. The complete training package is included in this report.

5.5.9.1 Specific outcomes

Knowledge outcomes suggest how the learners will demonstrate the knowledge gained from the learning.
Skills outcomes are how the learner applies the knowledge gained.
Attitude outcomes refer to the attitudes, beliefs and characteristics that learners can develop in respect of the learning taking place.
The learning outcomes should be clearly stated so that the learners and educators can be held accountable for the learners' achievement of the outcomes. Learning outcomes as the centre of the design of the learning programme, should clearly state what the learners should achieve at the end of the learning event. Learning outcomes should be quantifiable and verifiable.

Specific outcomes are indicated in the modules as follows:

On completion of this module, the learner will be able to:
VERB + OBJECT + MODIFYING PHRASE

Checklist For Writing Learning Outcomes

(Moodie, 2002:195)

Does the learning outcome clearly and concisely state the learning that is expected to take place?	Yes	No
Is the learning outcome specifically written in terms of specific knowledge, exact skills and attitudes?	Yes	No
Does the learning outcome provide direction and a target for the learners and educator to aim for?	Yes	No
Can the content and assessment be developed using the learning outcomes?	Yes	No
Does the level of complexity of the learning outcome achieve a certain standard? (The level of complexity should be determined in the assessment of the organisations' needs the task analysis and learning needs assessment).	Yes	No
Will the learners be able to be assessed on the demonstration of the knowledge, skills and attitudes that are stated in the learning outcomes, that is, are the learning outcomes quantifiable and verifiable?	Yes	No
Can the learning outcomes be used when choosing the most appropriate instructional tools and developing learning activities or learning tasks?	Yes	No
Are the learning outcomes achievable within the constraints of the learning programme?	Yes	No
Can the learning outcomes be achieved in the allotted time?	Yes	No
Is each learning outcome linked to other learning outcomes, that is, it should not be a stand-alone statement?	Yes	No
Are the learning outcomes sequenced from simple to complex so that each learning outcome is reinforced by subsequent learning outcomes?	Yes	No
Can the learners use the learning outcomes to organise their work schedules?	Yes	No
Can the learners use the learning outcomes to monitor their progress?	Yes	No

5.5.10 Assessment

Assessment, which is directly linked to the outcomes, must be clearly stated and achievable. Assessment can be formative or summative.

Quality of assessment is more important than quantity. Assessment should not become a burden to the learners or the educators. As assessment is a measurement of the achievement of learning outcomes, each question, task or activity used for assessment should be directly linked to outcomes and should be clearly stated. In distance education learning programmes self-assessment allows the learners to assess their own progress. Self-assessment needs feedback from the educator.

It is important to understand the difference between assessment methods and assessment instruments:

- Assessment methods refer "… to the activities that an assessor engages in as he or she assesses a learner" (South African Qualifications Authority, 2001:27) and includes activities such as **observation**, **evaluation** of a product and **questioning**.
- Assessment instruments refer "…to the nature of the assessment task given to the learner to do" (South African Qualifications Authority, 2001:29) and includes **questions**, **tests**, case **studies**, **portfolios**, **projects**, **assignments,** etc.

5.5.10.1 Assessment Criteria

Assessment criteria are used to verify if the outcomes have been achieved.

Example:

Specific Outcome:
On completion of this module the learner will be able to:

Explain how deep the land should be ploughed to yield the best crop

Assessment Criteria:
The optimum depth for ploughing is explained

Assessment method:
If the learner has to EXPLAIN the method is questioning

Assessment instrument:
This could be a question and answer sheet.
If the learner is illiterate it could be a verbal question and answer instrument

5.5.10.2 Assessment can either be formative or summative:

a. Formative Assessment methods selected

Formative assessment is used to monitor and give feedback on learners' progress during the learning event, and is determined by the needs of the learners. It refers to ongoing assessment during the learning process and cannot be used for making judgements about achievement. Formative assessment is used by both the learners and the educator to identify strengths and weaknesses and by the educators to provide feedback to the learners. This process of feedback encourages dialogue between the learners and the educator.

b. Summative Assessment methods pre-set

Summative assessment should assess every outcome and its associated assessment criteria and should be pre-set. It is used to judge the learners' achievement of the learning outcomes and includes instruments such as projects and performance tasks. As both communicative and instrumental learning are encouraged the learner can be assessed by being observed while carrying out an activity, assessed on a final product produced by the learner and/or the learner can be asked questions to establish evidence of a learner's underpinning knowledge and understanding. Assessment done by observation, evaluation of a product or questioning should be directly linked to learning outcomes. If a unit standard is being used for the design of the learning programme, the assessment should also be linked to the assessment criteria and range statement of the unit standard. These linkages will result in the assessment being fair, valid, reliable and practical as learners will not be assessed on issues that are not related to the learning outcomes, assessment criteria and range statements.
Both formative and summative assessment should acknowledge the experience of the learner and allow the learner to reflect on what has been learned. By pre-setting the assessment or assessment criteria the learners are given the opportunity to decide when they are ready to be assessed by an assessor. This should encourage learners to be decision-makers regarding their assessment. Pre-setting of assessment will guide the facilitator/trainer when selecting content and when developing the learning tasks. Excessive content and irrelevant learning tasks will be avoided in the planning and design of the learning programme. By pre-setting the assessment the facilitator/trainer also honours the principles governing the credibility of assessment, namely, fairness, validity, reliability and practicability.

As the training is based on unit standards all summative assessment should be done according to the South African Qualifications Authority (SAQA) standards by registered assessors and moderated by registered moderators. Assessors and moderators are registered with the

relevant Sector Education and Training Authority (SETA) and for the small-scale farmer training this would be with the Primary Agricultural Education and Training Authority (AgriSETA). Certificates will be issued by the relevant SETA

The learners are assessed summatively during and on completion of the training programmes, using the assessment criteria supplied in each module. If the target group has a low level of literacy it is import to use oral questioning and demonstrations as an assessment tool or instrument.

It is important to make a big occasion of the handing over of certificates. Invite distinguished guests to do the presentations. Recognition does much to boost the learner's self-esteem, and it may be the first form of recognition many of them have ever received.

5.5.11 Training Package

Attention was given to the development of a Training Package that can be given to prospective trainers or facilitators to use in the field when presenting training. The package needs to include information such as the expected outcomes and training content material, as well as notes to trainers regarding important issues to consider throughout the training. Appropriate procedures for introductions should also be considered. The package should include information on any potential equipment requirements, such as flip charts, paper, pens or other visual aids that may be required for presentation of specific training modules, as well as the actual technical training content. This “Training Package” consists of four (4) parts namely:

a. Facilitators’ Guide on Farmer Training
The Facilitator’s Guide, or actual technical training material.

b. Training Tools
Visual material (transparancies), to be used by trainer / facilitator during the presentation of training, specifically the modules contained in Chapter 3 of the Facilitator’s Guide.

c. Assessment Tools
The “memoranda” to be used for the assessment of training / learners’ progress. (Contained in the Facilitator’s Guide).

d. Audio-visual reference material
The training in the field by Mr. Adendorff and several new Farmer trainers, on video for reference purposes.

6. References

ANNECKE DP and MORAN VC (1982) Insects and Mites of Cultivated Plants in South Africa. Butterworth & Co. (SA) (Pty) (Ltd), Durban, South Africa.

BAILEY KD (1987) Methods of Social Research – Third Edition. The Free Press Collier Macmillan, New York, USA.

COUNTRY LIFE BOOKS (1979) African Insect Life. The Hamlyn Publishing Group Limited, Astronaut House, Feltham, Middlesex, England.

DE VILLIERS WM and SCHOEMAN AS (1988) Tuinplae en Siektes in Suid-Afrika. Struik Uitgewers, Kaapstad, Suid-Afrika.

KIMBLE CE (1990) Social Psychology – Studying Human Interaction. Wm.C.Brown Publishers, Dubuque, USA.

MAISONNEUVE et LAROSE and ACCT (1987) The Tropical Agriculturist – Maize. The Macmillan Press Ltd, London and Basingstoke.

MOODIE U (2003) Training, information and guidance on the development of Outcomes Based Education / ABET training material: Proceedings of the OBE-Development Training Workshop(s) ld during 2003, NCWSTI (National Community Water Sanitation Training Institute); University of the North; Polokwane, Limpopo, South Africa.

O'CONNOR J and SEYMOUR J (1990) Introducing NLP – Neuro Linguistic Programming – Psychological Skills for Understanding and Influencing People. The Aquarian Press, Hammersmith, London.

Training material from several training providers, including:

Mr J Adendorff
Ms C du Plessis (WOMIWU)
Mr C Stimie (Rural Integrated Engineering – RIEng)
Lowveld College of Agriculture

Annexure A

Concept Plan to Improve Smallholder Farmers' Access to Agricultural Training in Limpopo Province

Limpopo Department of Agriculture

July 2002

Concept Plan to improve smallholder farmers' access to agricultural training in Limpopo province

Limpopo Department of Agriculture

July 2002

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1. Introduction

The Limpopo Department of Agriculture is currently engaged in a process to build farmer training into the curricula offered by the Agricultural Colleges, in order to broaden smallholder farmers' access to appropriate training. The Water Research Commission is backing up this initiative with research support. This process is viewed as a pilot exercise and is contributing to the current process to develop a National Agricultural Training Strategy.

2. Farmer training – the current situation

Smallholder farmers currently have limited access to training, and the formally available training is focused almost exclusively on scaled-down versions of high-cost, high-risk commercial production practices, which are especially inappropriate to food insecure households. Much of the current training also requires trainees to be away from their homes for periods ranging between 3 weeks and several months, which is impossible for many, and especially so for the women responsible for food insecure households.

3 2.1 Low-cost homestead production

However, there is a pool of knowledge available among practitioners in indigenous practices and training approaches, primarily in the domain of civil society and volunteerism, which is mostly transferred through structured house-to-house training initiatives. These initiatives are not insignificant in scope and impact[3], and focus firstly on *low-cost*, high-yielding cropping and poultry production in the homestead yard. Lack of water is almost invariably the most pressing constraint, and this is addressed through training in techniques of low-cost rainwater harvesting and recycling of homestead grey water.

This addresses directly the most serious dietary deficiencies in the poorest rural households, namely the need for regular intake of micro-nutrients (available from vegetables and fruit) and complex proteins. Further, the income potential from homestead agriculture is often underestimated[4]. The reach of these initiatives need to be broadened by building them into appropriate curricula in such a way as to ensure easy access by food insecure households.

The Department of Education has recently piloted agricultural training as an 'elective' into their ABET training courses, offered on-site in villages, particularly on local school premises. Reportedly they still lack appropriate training material and service providers[5] for this low-cost type homestead production. There is already collaboration between Department of Education and the Agricultural Colleges, in that DoE is utilising some of the Colleges' recently developed Short Courses (mentioned again in Section 4 below).

In addition, the Department of Water Affairs and Forestry has commissioned a study to assess how DWAF can contribute to food security or 'water for food'-type

[3] In response to alarming levels of malnutrition cases treated at Jane Furse Hospital in Sekhukhune District in South Africa in the early 1980s, more than 40 villages were mobilized, despite serious political instability and an unfavourable policy environment at the time. Through the mobilization and follow-up strategies, villagers planted more than 10,000 fruit trees in their homesteads, and in so doing learned organic low cost methods for the production of quality fresh produce. Similarly, in the late 1970s, 31 villages were mobilized in the Bochum District. Personal communication, Mrs Tshepo Khumbane, April 2002.

[4] Several rural women earn significant income off homestead production, e.g. the equivalent of R8000 per year (i.e. roughly comparable to 10 monthly pension payouts) off a township plot in Ekangala (see Annex A).

[5] Personal communication, Mrs Mohlatlego Makgathe, Department of Education, July 2002.

initiatives by all spheres of government and civil society, private sector, and including potential collaboration with their own NCWSTI and Working for Water programmes (inception report due October 2002).

The potential for synergy between the above-mentioned initiatives of civil society, DoE/ABET and the Agricultural Colleges, DWAF, as well as the 'own food production'-components of the FAO/Department of Agriculture Special Programme for Food Security (SPFS), warrant serious attention in this LDA initiative to improve smallholder farmers' access to training.

4 2.2 Community gardening projects

Both the Departments of Agriculture and Health support the development of community gardening. However, there is growing evidence that homestead based food gardening is less expensive to develop, inherently more within the growers' control and less susceptible to problems of theft, conflict and management problems.

5 2.3 Revitalisation of Smallholder Irrigation Schemes through the WaterCare Programme

Curricula is being developed based on the successful agricultural production and water management training offered through the WaterCare irrigation scheme revitalisation programme in Limpopo. This initiative aims to ensure access beyond participants in the WaterCare programme. Most of the farmer training in the WaterCare programme is offered on-farm.

The Agricultural Colleges in Limpopo has taken a basic decision to provide training at the Further Education and Training (FET – Grade 9-12) level, rather than Higher Education (HE), which is the level at which the Technikons and Universities provide services. Further, the Agricultural Colleges have decided to shift their focus towards the training of smallholder farmers, whereas before they trained extension staff only. One of the challenges associated with offering the WCP and other farmer training would be to further develop the Agricultural Colleges' capacity to offer *in-situ* or on-farm training.

6 2.4 The policy context

[Here: paragraph needed on how this relates to:

- the Strategy for the Agricultural Sector of South Africa (Nov 2001);
- national agricultural policy, including the 'Policy and Strategy on Mainstreaming the Marginalised through Agricultural Water Use' (Oct 2001 draft); and
- the National Strategy for Training and Education for Agriculture and Rural Development (due Nov 2002)
- LDA Farmer Training Policy (under development – Mr M Mannya]

3. Training requirements in support of smallholder farming

The training requirements in support of smallholder farming is considered under the following headings:

- Training needs of smallholder farmers
- Training needs of farmer institutions (such as Water User Associations) for the effective self-management of group activities, including technical, managerial and water management aspects

- Entrepreneurial training for smallholders and agri-business SMMEs
- Training of Farmer Trainers
- Basic village level technical support needs

7 3.1 Overview of training needs of smallholder farmers

According to the Rural Survey 1997, there are 2.4 million households (12.7 million people) in the former homelands in South Africa, of which 1.7 million households have access to dryland cropping fields and 56 000 have access to irrigation. Households also utilise their homestead yards for production, but on average much less intensively than in other parts of the continent.

This overview of smallholder training needs is based on consultation with smallholder farmers and development practitioners with extensive experience in rural and agricultural development in rural South Africa. In practice, each training programme should be preceded by a thorough training needs assessment to confirm and prioritise the specific needs of that target group. For example, the 'pre-development survey' at the start of each new project in the WaterCare Programme serves this purpose.

Several categories of smallholder farmers have been identified for the development of appropriate curricula to address the changing needs as a smallholder progresses on a path of development. Training needs must further be differentiated according to the type of production location as shown in Table 3.1 below.

Table 3.1 Spectrum of smallholder agriculture – categories of training needs

			Increasing cropping input costs and risk →			
			Homestead yards	**Dryland fields**	**Irrigated fields**	**Grazing and livestock watering**
Number of households (hh) in former homelands with current access to agricultural resources			*2 400 000 hh*	*1 700 000 hh*	*56 000 hh*	*1 700 000 hh*
Total hectares currently under control of these households			*200 000 ha*	*2 000 000 ha*	*100 000 ha*	*12 000 000 ha*
Development path ↑	**C**	**Profitable commercial small-scale farmers**	Define training needs	Define training needs	Define training needs	Define training needs
	B	**Subsistence and emerging farmers**	Define training needs	Define training needs	Define training needs	Define training needs
	A	**Food insecure households**	Define training needs	Define training needs	Define training needs	Define training needs

***Notes**:*
i) The next step in the development path (A-B-C) introduced above, would be large-scale commercial production. However, this falls outside of the scope of this initiative and is not elaborated on in this Concept Plan.
ii) Data is from the 1997 Rural Survey, StatsSA.
*iii) The figures above imply that there is a theoretical potential to **double** the current hectarage under irrigation (which is currently mainly in irrigation schemes) through development of low-cost rainwater harvesting in homestead yards alone, and with the potential to benefit much larger numbers of households, especially among the poorest of the poor.*
iv) Further irrigation expansion of unknown potential is possible on existing dryland fields through construction of small dams as currently found on commercial farms.
*v) The hectarage of dryland fields under control of smallholder farmers in the former homelands (approximately **2 000 000 ha**) is comparable in size to the total area planted to maize on commercial farms in the past two growing seasons (approx **2 750 000 ha**).*
vi) The potential for improving the carrying capacity of grazing land through rainwater harvesting (as opposed to stormwater run-off control systems) does not seem to have been explored in South Africa.

Table 3.1 reflects on the full spectrum of smallholder agricultural water users and recognises the following:

***A. Food Insecure Households**: Large numbers of empoverished rural households have abandoned farming over the years as it became unsustainable, largely due to high costs and low returns on very low levels of production. Many of these households are food insecure (nationally, 1:4 children are stunted due to malnutrition) and may or may not have access to social benefits (mainly old-age pensions) and sometimes remittances from employed family members. Women (and increasingly, AIDS orphans) carry the daily burden of finding the means to feed their families.*

These food insecure families may well still have access to some or all of the agricultural production locations reflected in Table 3.1, but may not be able to utilise them for want of complementary resources, like credit and support services.

- ***Objective of Food Insecure Households – food security***
  In the context of food insecurity, the household has one overriding objective – namely to achieve food security. Therefore, the agricultural training focuses on:
  - mobilisation of the poorest of the poor to (re-)engage in agricultural production, through a facilitated process of self-reflection;
  - low-risk, low-cost vegetable and fruit production in the homestead yard, and food processing and storage techniques (mainly indigenous);
  - homestead rainwater harvesting and reuse of grey water;
  - basic training in modern maize production techniques, mainly in dryland fields (typically 1-2 hectare); and
  - mobilisation of broad-based community recognition and support for these households' efforts.

- ***Outcome – household food security through own production***
  Satisfaction of the households' basic grain, fruit and vegetable needs through own production on homestead yards and dryland fields

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B. Subsistence and emerging farmers: *Once a producer has the ability to meet her household's basic food requirements sustainably, her self-esteem is restored, her vision expands and her training needs expand accordingly. She can now afford to introduce some risk into her farming system in order to generate income and profit.*

- ***Objectives of Subsistence Farmers – income generation and self-development***
  In this context, the agricultural training focuses on:
  - One…
  - Two…
  - Three…
  - (to be identified during research project).
  -

- ***Outcome – profitable small-scale farming***
  Explain… (to be identified during research project).

C. Profitable small-scale commercial farmers: *Farmers' objectives become more complex and varied as they progress up the scale of development. In broad terms, the agricultural objectives of a profitable farmer revolve around profit maximisation, simplification of management to free up available time and seeking opportunities for growth and/or diversification. Profitable farmers participate in farmer organisations in as far as they perceive this to contribute to the fulfilment of their farming objectives.*

- ***Objectives of Profitable Small-scale Farmers – improved profit, simplified management and economic growth***
  In this context, the agricultural training focuses on:
  - One…
  - Two…

- Three…
- (to be identified during research project).
-

- ***Outcome – efficient, knowledgeable small-scale farmers on a growth path***
  Explain…(to be identified during research project).

8 3.2 Training needs of farmer institutions (e.g. Water User Associations) for the effective self-management of group activities

Where a management structure of some form is required for coordination of agricultural operations and services (as in the WCP for smallholder irrigation schemes), farmer training needs are divided into two broad categories namely:

a) Farmer mobilisation and development orientation training, and
b) Technology transfer for self-management of scheme/group activities

3.2.1 Farmer mobilisation and development orientation training

To enhance the chances of sustainable development, farmer mobilisation and orientation is essential prior to any development intervention. This requires training and facilitation.

The approach requires an attitude that encompasses sincerity, honesty, empathy, humility, trust and positive enthusiasm. Trainers also, require guidance and exposure to the above elements of attitude and approach.

Further, the approach must foster a sense of ownership and participation in the farmers' initiative (whether it be the revitalisation of their irrigation scheme or establishing a new enterprise).

The basic training requirements in this phase are:

- Awareness training – a training course to focus and orientate trainees on the objectives, benefits and responsibilities of this initiative or programme.

- Pre-development survey / technical evaluation (survey) - a survey to establish the real needs, problems, fears and aspirations of the participating community and the state of infrastructure in the case of an irrigation scheme being rehabilitated. The survey forms the basis of any development with which the farmers will be involved.

- Institution Building (workshop) - where a number of farmers are sharing infrastructure and services to ensure improved and sustainable production, there will be a need to form appropriate organisational and management structures. In the case of the WCP the formation of farmer groups and a Water User Association with its own management committee are fundamental to the success and sustainability.

The elements of training and facilitation will include:

- Scheme management structure
- Farmer group structure
- Portfolio development, including:

- Management (chairperson/ treasurer / secretary)
- Services (to farmers)
- Technical (water management / infrastructure rehabilitation / maintenance)
- Human resources (training coordination / conflict resolution etc.)
- Natural resources (conservation / water supply)

- Other role-players - the involvement of key role-players (such as service providers) in the sustainability of the farmers' initiative, must be identified and facilitated.

3.2.2 Technology transfer training needs for scheme/group management activities

Technology transfer needs of farmer institutions may include the following;

- Scheme (or entity) management training, involving basic
  - leadership skills
  - management skills
  - financial skills (dealing with money)

- Water Management training, involving
  - bulk water supply and distribution to farmers (normally handled at a WUA level)
  - in-field water management and conservation

- Infrastructure rehabilitation or development, management and maintenance

9 3.3 Entrepreneurial training for smallholders and agri-business SMMEs

[to be elaborated]

10 3.4 Training of Farmer Trainers

- orientation to farmer circumstances
- technical training content similar to farmer curricula, e.g:

  Agricultural production training, including;
  - soil preparation
  - fertilisation
  - seed selection / planting
  - plant protection (weeds / pests)
  - irrigation / conservation
  - financial (business plan)
  - marketing
  - demonstration

- group dynamics and farmer training methodology
- later: training-of-trainers course

11 3.5 Basic engineering short courses for village level technical support, e.g. rainwater harvesting and homestead irrigation

(Identified for possible future research).

4. Proposed mechanisms to improve smallholder farmers' access to agricultural training

The following mechanisms are proposed to improve smallholders access to agricultural training in Limpopo province:

- Establishment of *provincial policy and strategies* on farmer training in Limpopo (ongoing: M Mannya);
- Development of an *inventory and register* of agricultural training providers in Limpopo (as suggested in the LDA Farmer Training Policy, and with support from PAETA;
- Development of a nationally recognised *Farmer Trainer* and *Farmer* qualifications, and appropriate training and learning material for trainers and farmers, in collaboration with PAETA (for Farmer qualifications) and ETDA (for Farmer Trainer qualifications);
- Institutionalisation of farmer training in *Agricultural Colleges*; and
- Support of *existing* and establishment of *potential new* training providers in Limpopo, as appropriate.

12 4.1 LDA farmer training policy

[see draft LDA Farmer Training Policy by Mr M. Mannya]

13 4.2 Inventory and Register of agricultural training providers

[to be elaborated in envisaged Business Plan]

14 4.3 Farmer Trainer and Farmer qualification and materials

The process of development of nationally recognised Farmer Trainer and Farmer qualifications, and appropriate training and learning material for trainers and farmers is considered in more detail in #5 below.

15 4.4 Mechanisms to build farmer training into the curricula of the Agricultural Colleges in Limpopo

The Agricultural Colleges are well versed in the agricultural training field. Their history in extension training and recent introduction of their first Farmer Short Courses at the Colleges give them a good background to this new field of service provision. These Farmer Short Courses have been registered via the PAETA and are already being presented by the Colleges. However, according to the College Rectors, these Short Courses do not currently cover the WCP, nor all the smalholder farmer training needs depicted in Table 3.1 above.

In this light, both an *initial, transitional phase* and a *long-term management phase* are elaborated below. The initial process to develop new Farmer Trainers at the Agricultural Colleges will focus on the training currently presented through the WaterCare Programme (WCP). Then, new curricula and materials will be developed in the second phase, so as to cater for the spectrum of farmer training needs described in Table 3.1 above.

4.4.1 Initial process to develop new Farmer Trainers at the Agricultural Colleges

The initial phase will consist of the following steps, which are aimed at completing the first round of farmer training by new the Farmer Trainers *by the end of 2002*. These activities can be carried out within available budgets [detail: M Shaker, M Mannya, MJJ Thupana].

- Obtain written statement from PAETA to allow continuation of curriculum development and presentation prior to registration and accreditation.
- Obtain copies of existing Unit Standards and other relevant material from PAETA and other relevant SETAs and adapt where possible, and start developing new material as appropriate (ongoing).

- Expose college staff (both management and potential trainers) to the spectrum of smallholder farmer circumstances and training needs (see Table 3.1 above), through:
    - Observation of training presentation in the current WaterCare Programme (WCP) [to commence immediately]; and
    - Participation in an awareness training course, a pre-development survey and broad-based training needs analysis [July 2002]. Budget for this has already been cleared [M Shaker].

- Selection and self-selection of potential Farmer Trainers
    - Potential Farmer Trainers will be invited from existing college staff, extension personnel, farmers trained under the WCP, village facilitators trained under the BASE programme, students or other;
    - Following their exposure as discussed in the bullet point above, the potential Farmer Trainers will be well enough informed to decide whether they are interested in pursuing a career as Farmer Trainer; and finally
    - Departmental Assessors will select the most suitable candidates to be trained as Farmer Trainers.

- Training of Farmer Trainers [Aug 2002]
    - Potential Farmer Trainers will be trained (on-college) by leading WCP Trainers' Team;
    - Potential Farmer Trainers will present training to farmers (on-farm) under supervision of WCP Trainers' Team; and
    - Qualify as Farmer Trainers when farmers successfully implement the training they had received (e.g. by producing a successful crop).

- Development of Trainers-of-Trainers
    - Successful Farmer Trainers can opt to develop into Trainers-of-trainers
    - The first Trainers-of-Trainers will result when leading WCP Farmer Trainers train new Farmer Trainers as described in the previous bullet point.

4.4.2 Long-term process to support and expand the capacity of the Agricultural Colleges to offer farmer training

The second phase focuses on the long-term development and maintenance of capacity at the Agricultural Colleges to present appropriate farmer training sustainably. This will involve the development and support of training staff and management, as well as the expansion of curricula and materials to cover the needs of the full spectrum of smallholder activities, from food insecure households, to subsistence farmers, to profitable small-scale farmers.

On approval of this Concept Plan by the LDA Senior Management Team (SMT), a Business Plan will be developed to submit to NDA in August 2002, in order to obtain financing for the implementation of this initiative (please also see #6

below for more detail on the proposed components of the envisaged Business Plan).

The following elements will need attention in the second phase:

- Sustainable management of the training programme
- Active support of Farmer Trainers, who typically work under considerable emotional and time stress
- Development of new trainers
- Development and registration of Unit Standards based on existing WCP and other available training
- Development and introduction of new learning and training material to cater for the full spectrum of farmer needs (as in Table 3.1 above)
- Orientation of all new college staff (both management and trainers) to the peculiarities of farmer training provision
- Networking to utilise external training capacity as and when required

16 4.5 Other agriculture related training providers
The other training requirements in support of smallholder farming, as described in sections 3.2 – 3.4 above, need to be catered for by appropriate training institutions, but may fall outside the scope of the Agricultural Colleges.

5. Development of appropriate training and learning material

[M Botha]

17 5.1 Preparation
The Primary Agricultural SETA (PAETA) supplied the LDA/WRC Task Team with copies of all the already registered unit standards within the PAETA. From this information gaps could be identified of unit standards that are needed but not yet developed.

18 5.2 Standard formats
All the unit standards consist of the following:

Specific outcome:
The specific outcome describes the eventual skill or ability that the unit standard aims to achieve.

Learning unit:
The learning unit breaks up the specific outcome into detailed learning goals, which has to be attained by the learner within the specific outcome.

The first step, which has now been taken, is to identify the gaps and determine the unit standards that need to be developed. The second step is to develop unit standards which are need-based, the need being those of the actual learners, in this case the farmers - this highlights the importance of the participatory needs analysis which has to be executed.

All of the above mentioned serve as the building blocks for a complete qualification, recognized by and registered with SAQA, from which different unit standards and combinations thereof can be used to form the modules of learning material on the different levels (ABET or NQF1-4).

The PAETA will provide consultants and funding to assist with the determination of outcomes, the development of unit standards, as well as the eventual determination of NQF levels.

19 5.3 Example of a Unit Standard

Specific outcome:
Establishing a properly functioning farmer community group.

Learning unit:
- Establish a community farmers group
- Formation of a farmers group committee
- Farmers group committee established from within the group itself
- Committee comprises of farmers representing all levels of the community, recognizing genders, youth, leadership and communication development within the community.
- The committee must be formed in a manner which supports mutual respect among all parties involved; i.e. the farmers themselves, the committee members, the trainer or development facilitator, Department of Agriculture, etc.

20 5.4 Development of further Unit Standards for farmer training in Limpopo province

The following steps are proposed for the further development of new Unit Standards for farmer training in Limpopo.

Step 1: The Agricultural Colleges will nominate representatives to attend a one-week exposure course at the NCWSTI in the drafting of Unit Standards and learning material.

Step 2: On completion of the exposure course, members of this trained group (the 'Farmer Training Material Development Team' (FTMDT)) will share out the responsibility amongst themselves to draft the new required Unit Standards.

Step 3: The FTMDT will report back to the LDA/WRC Task Team.

Step 4: Members of the FTMDT will now possess the capacity to develop new Unit Standards for future training requirements.

6. Resource allocation

[Dr A Shaker]
As part of the Business Plan an assessment of the present strengths and weaknesses in terms of the overall objectives will be made. Based on gaps identified we will be suggesting an appropriate and sustainable institutional arrangement for the colleges including governance, finance, control, institutional and management capacity, sustainability, performance, training facilities, trainers, field sites and curricula.

On the financial issues we are going by the assumption of sustainability of the colleges as training providers in terms of the vision. The strengths and weaknesses in this area will be assessed and gaps identified. As the overarching principle is sustainability, the market potential for such institutions will be assessed.

Basic Elements of the envisaged Business Plan:

1. Introduction and background to the project
2. Compilation of an inventory of agriculture related training providers in Limpopo and to a lesser degree nationally
3. Suggest the most appropriate model for the establishment of a training centre(s) taking into account:

- The overall training needs of the agricultural sector in Limpopo
- The findings of the inventory
- The role and vision of all district and local municipalities and other roleplayers in the sector

4. The proposed model for the training centre(s) should include the following:

- Institutional or structural structure
- Financial viability
- Suggested location(s)
- Management structure
- Infrastructural needs
- Training capacity
- Field sites for assessment of learners

5. Assessment of the proposed training centre(s)' compliance with the South African Qualifications Authority's Quality Management System resulting in accreditation of training providers with the Sector Education Training Authority (SETA)
6. Financial considerations
7. Way forward

7. Mechanisms for monitoring and review

[MJJ Thupana]

21 7.1 Introduction

The government, in a quest to inform itself and the public of the impact of the investment made on development projects, applies a range of monitoring and evaluation tools.

In the same breath, many intervention programs were put in place to respond to the needs of the rural agricultural communities. However, most of these have aborted and failed to achieve the intended objectives due to the absence of clearly articulated and well packaged monitoring and review systems as a component of project implementation.

22 7.2 Baseline setting

If it has to be known at any stage of the project whether it is on track, it has to be known prior to implementation what needs to be achieved.

- ♦ Objectives clearly outlined
- ♦ Tabled as outcomes
- ♦ Success indicators outlined

23 7.3 Who does the monitoring

A joint monitoring team by the project participants, the department, and the communities (may be through or with the local NGOs/CBOs).

Whilst monitoring by an independent entity like a University may sound more independent and perhaps more reliable since it would be devoid of any self interest, such bodies are often perceived to be alien to the project and therefore information often withheld by the respondents.

Monitoring will be a component of the project implementation cycle for clearer milestone monitoring.

7.4 Monitoring mechanism/tools

In line with the groupings of the targeted clientele, i.e. the food insecure, subsistence farmers and the small-scale commercial farmers, a barometer should be in place to monitor the changes in the socio-economic conditions across the groupings. The mechanism should also inform the department of agriculture whether the impact talks to the key delivery area as depicted by the Strategic Plan.

7.4.1 Data processes

- Lack of quantitative data pre-intervention denies the process the barometer (base-line) to monitor any changes.
- Research to be made an integral part of the project
- Need for information officers/social research officers
- Clear feed-back system/mechanism/progress monitoring

7.4.2 Diagnostic evaluation studies to depict short-term problems

7.4.3 Quality of life survey

- Clear targeted outcomes having been identified; the major and the side (spin-offs)
- Success indicators having been identified
- Good base for questionnaire development
- Researchers trained
- Long-term

7.5 Review processes

8. Accreditation

[College Rectors]
The chairperson of the Primary Agriculture SETA (PAETA), Mr Machiel van Niekerk, has advised the Limpopo Department of Agriculture Task Team to go ahead with the presentation and further development of the farmer training via the Agricultural Colleges, *even prior to formal registration and accreditation*. This is due to:

- the small-scale farmers' obvious and urgent need for the training, and
- the inevitably long timeframe for accreditation.

The redrafting of the training into the NQF format has already commenced as part of this initiative, as described above, and will continue in parallel to the expansion of training capacity and presentation of the training with systematically increasing participation by the Agricultural Colleges.

The accreditation process will commence when the unit standards and learning material has been recast into the required NQF format.