

**PROVINCIAL REPORT ON EDUCATION AND
TRAINING FOR AGRICULTURE AND RURAL DEVELOPMENT:**

FREE STATE PROVINCE

By Provincial Research Officers:

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FOREWORD

In the New South Africa, education, training and agriculture are essential development resources. There is no strategy towards agricultural and training and yet they are essential elements to a vibrant well being of the nation.

The National Department of Agriculture (NDA) therefore, consulted the food and Agricultural Organisation of the United Nations (FAO) to assist. FAO agreed and the partnership between the two was forged in. To ensure that the effort was nationally owned NDA invited the Provincial Department of Agriculture to participate. Each province nominated two provincial researchers officers. The Free State researchers drew questionnaires according to agricultural strategy, which is in line with the South African sector strategy and the Free State Department of Agriculture strategic plan. They collected data from agricultural education and training users and providers. They analyse data and wrote provincial report.

This document, therefore, is a result of the researchers' diligent work. It corroborates fore indicated need that some strategy is necessary. In it, it is clear that participatory effort to come-up with a national education and training strategy was a correct endeavour that will end a document that will owned by all.

Most importantly agricultural education and training in the nation will address needs and aspirations of the majority users and providers. The clients of the DoA are:

Emerging farmers
Small scale farmers
Commercial farmers
LRAD beneficiaries
Students
Farm workers

They constitute agricultural organizations, academic and research institutions (NARS), government departments and institutions.

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LISTS OF ACRONYMS

AET – Agricultural Education and Training
 PAETTT – Provincial Agricultural Education and Training Task Team
 PRA – Participatory Rural Appraisal
 ARC – Agricultural Research Council
 NGO – Non Governmental Organisation
 MUCPP – Mangaung University of the Free State Community Partnership Programme
 STD – Secondary Teachers Diploma
 PTD – Primary Teachers Diploma
 B.A. Degree – Bachelor of Arts Degree
 FED. Agric – Further Education Diploma in Agriculture
 FED – Further Education Diploma
 HED – Higher Education Diploma
 BSc (Agric) – Bachelor of Science in Agriculture
 B.Tech and SED – Bachelor of Technology and Secondary Education Diploma
 M + 6 – Masters of commercial management
 B.A. ED – Bachelor of Arts in Education
 M + 4 – Matric plus four year degree
 GDP – Gross Domestic Product
 S.A. – South Africa
 D.Tech – Doctor of Technology
 SSU – Small Stock Unit
 LSU – Large Stock Units
 HEQ – Higher Education Qualification
 RPL – Recognition of Prior Learning
 LRAD – Land Redistribution for Agricultural Development

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Executive Summary

1.1 Background

The Free State Province has lower levels of literacy. Access to education is restrained due to problems of distance and costs. The province is faced with a critical challenge of unemployment, which is said to be 34%.

Following the changes from apartheid to a democratic society, South Africa is under major political, economical and social changes, all of which have impact on education and training policy. Previously there were dual system of education and agriculture, determined on the basis of colour and race. The current Agricultural Education and Training (AET) systems is the results of attempts to bring together in an uncoordinated way, two separate AET systems.

On the basis of above-mentioned factors there is a need of providers and users of AET, identify gaps in provision and use of AET and use of AET and make recommendations in respect of intervention mechanisms.

1.2 Purpose of the study

The purpose of the study is to assess training needs of providers and users of AET, identify gaps in provision and use of AET and make recommendations in respect of intervention mechanisms.

1.3 Methodology

Three methodologies namely Participatory Rural Appraisal (PRA), structures questionnaires and interview checklist were employed.

1.4 Description of the study area

The study was conducted in five provincial districts namely Thabo Mofutsanyana, Mothe, Lejweleputswa, Northern Free State and Xhariep. The study area comprises mainly small-scale farmers, lectures, learners, students, educators and lectures of agricultural science. In general, users and providers of AET in all forms were included.

2. OVERVIEW OF THE PROVINCE

2.1 Topography

The height above sea level ranges from 1800 in the east to 1200m in the west. Mountainous is occupies a relative small portion of the province. In general topography is well suited for agricultural activities.

2.2 Climate

Annual average vary from 600 to 750mm in the east and decline gradually to a low 250mm towards South-Western parts. The average annual temperature varies between 12.5^o and 15^o C in the eastern areas and increases to 17.5^o C and 20^o C in the West.

2.3 Soil

Soil depth varies between 600mm and 900mm in the Eastern and Northern areas. Deeper soil are found in higher potential area of North Western and Western Free State.

2.4 Demographics

Free State population is estimated at 2.6 million. Blacks accounts for 83%, whites 13.6%, coloureds 2.7% and asians 0.1% of the total population. The dominant languages in the Province are Sesotho (57.4%), Xhosas (9.4%) and Setswana (6.4%).

2.5 Agricultural activities

The main agricultural activities in the Free State are mixed livestock and crop farming. Cultivated land account for 3.2 million hectares while natural and grazing land cover 8.7 million hectares of the total surface area. Of all the Provinces Free State is the main contributor to GDP in respect of cereals. It produces 33% and 49% of national maize and wheat production respectively.

2.6 Non Agricultural activities of small-scale farmers (Rural households)

Non Agricultural activities of farmers include taxi, shop(s) or spaza shop business and part time jobs such as gardening, street vendors, domestic work, etc.

2.7 Agricultural Education and training in the Free State Province

At primary level the subject curriculum is known as gardening and focuses the establishment of flowerbeds, lawns and production of vegetables. At secondary level it is offered by two types of schools i.e. ordinary or academic schools offering agricultural science as a subject and agricultural high schools. Of the two only the latter have compulsory practical component.

2.8 Provincial, National and Global imperatives

The provincial imperatives are economic growth and job creation. Main priorities are to develop the farming and agri-business sectors and to tap the potential of the leisure, eco- and agri-tourism sectors. Other imperatives, which are overarching, are effect of HIV/AIDS on both commercial and small-scale production and globalization. The main challenge in the Free State is unemployment since the rate thereof is 34%.

2.9 Challenges and implications of development need on Agricultural Education and Training

Generally main challenges facing the Free State Agricultural sector include agro-production and processing, job creation and poverty alleviation. To meet these challenges the implications are that vast amounts of resources are required and for the sector to be successful it has to have an effective knowledge base of and access to local, national and international markets. Sound agricultural economic principles have to be applied in all agricultural activities. AET also has to provide regular and continuous updating of agricultural economic and marketing information, which is user-friendly.

3. Training

Small-scale farmers in the Free State have a wide spectrum of agricultural enterprises. They include poultry, livestock, i.e. LSU and SSU, horticultural and field crops. Majority of them have basic production knowledge in relation to their enterprises.

The main training needs are:

- Crop animal nutrition
- Farm management
- Project management
- Animal bleeding
- Pests and disease control
- Group dynamics

They are currently served by the following AET providers, Department of Agriculture, Nanzindlela, Thusanang, Department of Labour and Department of Social Welfare.

Training needs of other AET users and providers:

Trainers

- Computer skills
- Planning skills
- Monitoring and evaluation skills
- Material development skills

Technical Staff of agricultural companies and parastatals

- Agricultural economics – micro and macro economics
- Valuation
- Computer skills
- Plant physiology
- Marketing
- Precision farming
- Agronomy

Agricultural extension staff

- Marketing
- Conflict resolution
- Extension i.e. group dynamics, methodologies, etc.
- Computer skills

The main preferred providers of AET are Technikons and Universities, while preferred method of provisioning is 50:50 practical to theory ratio.

4. Provisioning of Agricultural Education and Training

The three main providers of AET in the Free State Province are Glen College of Agriculture, Technikon Free State and the University of the Free State. These institutions target youth, adults, women and physically challenged persons. They offer courses ranging from higher certificate to PhD., D.Tech and DSc degree. Cost of tuition varies from R1 430 to R12 168.15 for higher certificate, diploma or junior degree per annum. There are approximately nine non-formal training providers of AET registered with the department of labour. They offer one to five day courses. They target mainly youth, women and small-scale farmers.

Agricultural Education and Training Gaps

Generally AET providers are to a large extent the right clients except in the case of University of the Free State and Glen College of Agriculture in

respect to their short courses not targeting the right clients. This is reflected in the following:

- Structured courses visa need driven courses
- Method of provisioning which is 70% theory and 30% practical
- Courses are conducted on site or residence not on farm
- Medium of instruction is English or Afrikaans while clients i.e. small-scale farmers prefer vernacular
- Courses are beyond the reach of small-scale farmers

In conclusion formal AET providers at tertiary level have the capacity to offer AET but this does not benefit the entire farming community in the Free State and the population at large due to the above mentioned factors. On the hand the majority of non-formal AET providers lack capacity to offer AET but, however, their methods of providing AET are aligned to and meeting the conditions of the clients.

Suggested intervention mechanism which the AET strategy need to focus on include:

- Use of vernacular by training providers especially to farmers
- Broadening access to AET e.g. RPL
- Co-operation among institutions
- Provision of resources to schools offering agricultural science as a subject or phasing them out leaving only agricultural schools to provide agricultural science subject
- Teachers or educator training in agriculture

Chapter 1

1. BACKGROUND

The Education standard in the Free State is said to be on par with those in the North West and Eastern Cape provinces. Access to education is severely restrained due to problems of distance and costs. This is in spite of the fact that the bulk of the population has access to educational facilities (Free State Development Strategy, Draft Document, 2000). The level of literacy is unacceptably low since only 2.9% of the total population (2.6 million) has tertiary qualifications while those without schooling outnumber (9%) those with Standard 10 or Grade 12 (7.6%). The bulk of the population has some primary or some secondary education (36.6%) (Statistics South Africa, 2002).

The Province has lower levels of formal education for categories of skilled workers than the national averages. This is reflected in the quality of labour force, which comprise mostly of illiterate or semi-literate people. Most of the people in this category earn their living as farm workers or subsistence farmers. These are people whom the “so-called” development agents failed to address their “real” needs. The level of literacy is a concern since any development intervention mechanisms has to address it first. Given this situation it is evident that education, particularly agricultural education has a role to play in uplifting the standard of living amongst the impoverished people.

The Free State Province is faced with a critical challenge of unemployment. The overall unemployment rate is said to be 34%, ranging from 27% in the Northern Free State and Lejweleputswa to 37% in Thabo Mofutsanyana. According to Statistics SA (2000) the proportion of the population with a standard of living below the poverty line of R800 per month is estimated at 48% in the Free State for the year 2000. It was estimated that 54.1% of the total Free State population lived in poverty in 1995. Their incomes are constrained because the rural economy is not sufficient vibrant to provide them with numerative jobs or self-employment opportunities (Free State Department of Agriculture, 2002).

Following the changes from apartheid to a democratic society, South Africa is under major political, economical and social changes, all of which have an impact on education and training policy. Previously, there were dual system of education and agriculture, the “privileged” and “underprivileged”, determined on the basis of colour and race. The current formal Agricultural Education and Training (AET) system is the result of attempts to bring together, in an uncoordinated way, two separate AET systems (Njobe, 1995). According to the same document various attempts have

been made since 1994 to transform those who were previously denied access, but were undertaken independently and in an uncoordinated way. These efforts ignored farmer training and basic skill education and as a result no integrated coherent picture of AET has emerged.

On the basis of above-mentioned factors there is a need for a national AET strategy to tackle endemic problems of inequality in agriculture as a whole. In particular the education and training has to be re-orientated to deliver services to small and medium scale farmers, farmers and farmers who are facing resources, land, information and market constraints.

This report seeks to document the gaps in AET provision and use. It will attempt to give a picture of the current AET status as perceived by both the providers and users. It will ultimately provide recommendations in terms of intervention mechanisms, which could be employed to remedy the situation.

1.1 Purpose of the study

The purpose of the study is to assess the training needs of both the providers and users of Agricultural Education and Training in the Free State province. This will involve identification of gaps in provision and use of AET and making recommendations in respect of intervention mechanisms to address those gaps. The information obtained through this study will be used to inform the National Strategy Formulation on Agricultural Education and Training and Rural Development.

The provincial objectives with regard to the study are:

To establish a data base of training needs of agricultural stakeholders in the province so as to enable the department to structure its services accordingly particularly its training component.

To establish a working relationship among agricultural stakeholders through the establishment of Provincial Agricultural Education and Training Task Team (PAETTT).

To build capacity of personnel of the Department of Agriculture so be able to undertake projects of this magnitude and thus save in terms of outsourcing whenever such projects have to be undertaken.

1.2 Methodology

Three methodologies were employed during data collection i.e. Participatory Rural Appraisal (PRA), structured questionnaires and interview checklist. PRA was used to collect data mainly from small-scale farmers.

1.3 Participatory Rural Appraisal

PRA workshops were held at various towns in the four provincial districts namely Thabo Mofutsanyana, Lejweleputswa, Northern Free State and Motheo. The only district, which was left out, was Xhariep. During the workshop participants from different projects converged at a central place. At the beginning of each workshop the purpose of a workshop would be explained and participants given a chance to ask questions and information required from the participants in relation to their agricultural enterprise was articulated. They had to list their agricultural enterprises and/or agricultural enterprises available in their area and ranked them according to their contribution in terms of income generation or household food security. Thereafter list problems they encounter in their respective enterprises and survival strategies they employ. After this exercise they were divided into groups according to the projects they represented. Participants from one project were grouped together. The different groups had to write down the skills that are available among the beneficiaries in a project and skills that they would like to have which would enable them to farm productively. Each group wrote down the skills that they have, course attended and their duration and by which training provider. In addition they have to list skills required by the projects and the preferred training providers as well as the preferred methods of training.

1.4 Structured questionnaires

Structured questionnaires were used to most of the stakeholders with an exception of small-scale farmers and some managers of agricultural departments. Both open and closed-ended questions were used. These types of questions necessitated two different analysis methodologies namely qualitative and quantitative respectively.

1.5 Interview checklist

Pre-determined questions, which were arranged in the form of an interview, were used as a guideline in obtaining information mostly from managers in the Department of Agriculture. A trained person sat down with interviewee and posed questions. The interviews lasted approximately twenty minutes. This instrument allowed for follow-up questions and/or clarity to be made where necessary.

In addition the research involved collection and review of secondary data, attendance of national AET workshops and meeting with PAETTT members. The latter formed part of the research process. Basically the methodology was participatory.

1.6 Description of the study area

The study was conducted in all five provincial districts namely Thabo Mofutsanyana, Motheo, Lejweleputswa, Northern Free State and Xhariep. Different stakeholders were targeted in each district. Where possible an attempt was made to reach all agricultural stakeholders available in a district area.

In Thabo Mofutsanyana District the study area comprised small-scale farmers based in Vrede, Memel, Warden, Harrismith, Phuthaditjhaba, Kestel and Lindley. The following secondary schools formed part of study area, Mapoi, Moteka, Nkhobiso, Seotlong Agricultural and Hotel school, Mosiuoa Lekota, Iphondle and Dikwena. These schools were represented by their educators. Agriculture co-operatives, extension staff for Department of Agriculture, commodity group participated in the study. Some of the agricultural technical staff from Agricultural Research Council (ARC) Small Grain Institute at Bethlehem and Land Bank was sampled.

Only two schools in Motheo district formed part of the study area in the form of Unicom and Kgauho Secondary schools. Grade 12 learners and their educators were targeted. Khauhelo World Vision NGO (Non Governmental Organisation) and Mangaung University of the Free State Community Partnership Programme (MUCOO) NGO were sampled. Included also in the study area were three tertiary institutions in this, viz: Glen College of Agriculture, Technikon Free State i.e. Agricultural students and lecturing staff and their management and Faculty of Agriculture at the University of the Free State. In these only lecturing staff, their management and students were targeted. However, no questionnaires were returned from the University of the Free State all the targeted people i.e. students, lectures and management.

The following secondary schools, Lebogang, Hanover, Sello, Bo-vaal and Kgotso Agricultural schools represented Lejweleputswa district. As was the case with other schools grade 12 learners and teachers were targeted. Small-scale farmers from different projects in the following areas, Odendaalsrus, Welkom, Virginia, Theunissen, Brandfort, Ventersburg, Hennenman, Hertzogville and Boshof were incorporated in the study area.

In the Northern Free State the following stakeholders formed part of the study area: Agricultural technical staff of both Landbank, Kroonstad branch and Kynoch Fertiliser company also Kroonstad branch, among secondary schools, were Falesizwe, Dipkraal, Phehellang Boiphihlelo, Diphetoho, Kgolagano, various agricultural project beneficiaries in the following areas were sampled: Heilbron, Parys, Koppies, Bothaville, Kroonstad and Edenville, Orangeville.

In Xhariep one stakeholder in the form of Hendrik Potgieter Agricultural school formed part of the study area. The same target group as in other schools was sampled.

With regard to commercial farmers questionnaires were mailed to members of the Free State Agriculture Association via the association. Those who formed part of the study area were scattered throughout the province. So was the case with agricultural departments extension officers, the questionnaires were given to their district managers who then distributed them to their staff throughout their respective districts.

1.7 Profiles and unique features of the study area

Table 1 below gives list of agricultural projects that were represented in PRA workshop conducted in different districts of the Free State Province. It depicts name of a district, township, project, gender and number of youth members in a particular project.

Table 1: Projects that participated in PRA workshops

Districts	Name of projects	Male	Female	Youth <35
Thabo Mofutsanyana				
Qwa-Qwa	Community Young Farmers	7	10	-
	Ipopeng Project	7	9	-
	Landela Impilo	3	15	-
	Kopano ke matla	7	6	-
	Lerato Poject	6	6	-
	Relebohile Yuth Poject	-	-	10
	Honey Vill Project	2	9	-
	Itshokolele Project	2	9	-
	Pholoso Food Garden	4	7	-
	Cilela Impilo Agric Project	7	5	-
	Phaphamang comm. Garden Project	9	12	-
	Moeding Comm Garden Project	5	14	-
Memel	Poultry/Vegetable Project	19	9	-
Vrede	Poultry Project	17	8	-
Marquard	Cattle Project	9	4	3
Tsiame	Cattle and poultry Project	17	14	3
Petrussteyn	Mamafubedu Stock Unit	30	17	15
	Mamafubedu Brick Moulders	4	4	5
	Iketsetseng Vegetable Project	1	2	3
	Family Layer Project	1	0	7
	Mzamo Wood Work	3	1	4
	Thusang Poultry Project	2	2	3

Districts	Name of projects	Male	Female	Youth <35
	Tiisetso Sewing and Knitting			
	Itekeng Mafumahadi Sewing Project	-	6	2
Kestel	Animal and Crops Vegetables	21	9	7
Northern Free State				
Parys	Senzeleni Farmers Project	20	4	2
	Tshwaranang Project	34	5	8
	Sizabantu Project	12	8	2
Koppies	Ikemeleng Poultry Project	10	5	5
	Vukazenzele Vegetable and Crop Project	7	4	11
	Mabahloki Integrated Agricultural Project	-	25	7
	Property Seopasengwe Commercial Association	19	9	-
	Kopano Livestock	16	4	4
	Lerato Ladies Association	8	2	-
	Iketsetseng Garden Maintenance cc	7	-	5
	Pele ya Pele	7	7	4
	Kgothalang Poultry Project	3	13	8
	Batho Farmers Association	5	-	-
Edenville	Temo Ruo Project	85	15	5
	Ithute Bokgoni Project	19	-	14
Kroonstad	Tswelopele Vegetable Project	5	5	-
	Kroonstad Piggery Farmers	11	-	1
	Daily Dairy Supplier Project	12	1	12
	Twelopele Vegetable Project	12	6	3
	Itshokolele Fruits and Vegetables	9	7	-
	Kroonstad Piggery Farmers	11	12	16
	Tswelopelo Boerdery	14	21	-
Heilbron	Phiritona Poultry Project	32	13	6
	Sediba Kolobe Piggery	3	3	4
	Phiritona HIV/AIDS Education and Food Gardens	4	4	4
Orangeville	Metsimaholo Property Trust	20	20	7
Allenridge	Dikgomo Trust	44	6	2
Villiers	Itekeng Project	9	27	54
Viljoenskroon		6	6	-
Frankfort	Mmabahloki Integrated	-	25	7

Districts	Name of projects	Male	Female	Youth <35
	Agricultural Project			
Koppies	Ikemeleng Poultry Project	10	5	-
	Vukazenzele	11	7	4
Lejweleputswa				
Hennenman	Mphatlalatsane Project	8	13	4
	Kopano ke matla	14	5	16
	Itekeng Piggery Project	3	3	18
	Ithabele Thuo	86	6	4
Ventersburg	Ithabiseng Bakkery	15	5	2
Edenville	Ithute Bokgoni Project	-	19	14
	Shango Iashu Poultry and Veg.	4	18	6
	Temo Thuo Grain Producers	9	1	4
	Temo Thuo Project	85	15	5
Welkom	Tlamahano Merohong	10	12	4
	Tswelopele Poultry Project	12	20	6
Virginia	Khanyiso Vegetable Project	2	12	2
	Lechabile Dairy Project	9	3	3
	Ntsu Piggery Project	10	3	4
	Kopano Broiler Production	15	14	3
Theunissen	Piggery Project	13	6	2
Motheo				
Brandfort	Maramatlou C.P.A.	4	4	2
	Tirisano Piggery Project	6	4	8
	Waya Waya Poultry Project	7	6	7
Botshabelo	Tiisetsang Sewing and Knitting	14	9	5
TOTAL		559	411	145

The table below present list of schools sampled in different districts by gender of learners who participated in the study.

Table 2: Schools sampled in different districts

Districts	Schools	Male	Female
Thabo Mofutsanyana	Mampoi	14	8
	Moteka	15	7
	Nkhobiso	8	2
	Seotlong Agric	8	2
	Mosiuoa Lekota	13	7
	Dikwena	8	2
Motheo	Kgauho	12	3
	Unicom	8	6
Lejweleputswa	Lebogang	7	3

	Hanover	14	9
	Sello	11	6
	Kgotso Agric	13	8
	Bo-vaal	9	7
	Phephetso	24	19
Xhariep	Hendrik Potgieter	11	8
Northern Free State	Falesizwe	14	2
	Dipkraal	8	1
	Phehellang	7	2
	Boiphihlelo	15	11
	Kgolakgano	3	2
	Diphethoho	17	5
	Weiveld Agric	22	3
TOTAL		247	120
MISSING DATA		161	

Table 2 reflects the different districts and the number of schools that were sampled. The issue of gender was also taken into consideration. Some of schools that were agricultural schools i.e. Seotlong, Unicom, Kgotso, Bo-Vaal and Weiveld and the rest of schools offer agriculture as a subject.

The below table reflects educators that participated in the study, their qualifications, gender and name of the school they represented.

Table 3: Teachers sampled in different districts

Districts	Schools	Gender	Qualifications
Thabomofutsanyana	Seotlong	Male	STD
	Mampoi	2 Males	FEDAgric & FED
	Moteka	Male & Female	B.A. Degree&STD
	Nkhobiso	2 Males	STD & PTD
	Dikwena	Male	STD
Lejweleputswa	Kgotso	Male	HED
	Hanover	Male	BSc (Agric)
	Bo-vaal	2 Males	B.Tech & SED
	Sello	Male	STD
Motheo	Unicom	Male	FDE
	Khauho	Male	STD
Northern Free State	Kgolakgano	Male	M+^ (Commercial & Management)
	Niekerkrus	Male	STD & HED
	Falesizwe	Female	STD

	Boiphihlelo	Female	B.A. ED
	Nampo		
Xhariep	Hendrik Potgieter	Male	M + 4 Agriculture

Explanation of abbreviation from Table 3:

FED – Further Education Diploma

B.A. Degree – Bachelor of Arts Degree

STD – Secondary Teachers Diploma

PTD – Primary Teachers Diploma

HED – Higher Education Diploma

SED – Secondary Education Diploma

B.A. ED – Bachelor of Arts in Education

M + 4 Matric plus four year degree

M + 6 – Matic plus Masters degree

The purpose of sampling teachers in different districts as per school, qualification and gender was that, in most cases you might find that agriculture is taken for granted by other people. As qualifications reflect from the results there are more teachers who offer agriculture as a subject, but are not having agricultural qualifications. This pose a serious problem because from the author's perspective those teachers are not familiar with the subject and therefore cannot teach effectively. These might result in the learners having a negative attitude toward the subject and not pursue it at tertiary level.

1.5 Outline of the report

Chapter two of this report gives an overview of the agricultural sector in the Free State Province. Chapter three present results on training needs of various stakeholders gathered from different data sets. Chapter four presents ways in which various providers of AET are providing training. Chapter five discusses the findings emanating from training needs and identifies the gaps. Chapter six, which is the last chapter, summarises the findings and gives recommendations for the AET strategy formulation process.

Chapter 2

An overview of the Agricultural/Rural sector in the Free State Province

2.1 Introduction

This chapter comprises of seven sub heading namely geographical or environmental features which discusses an overview of natural resources of the province, demographics and agricultural activities taking place in the province that contribute to gross Domestic Product (GDP). Non-agricultural activities of mainly small-scale farmers and rural households are also discussed.

Generally Agricultural Education and Training (AET) status in the Free State is addressed in this chapter followed by Provincial, National and Global imperatives which in one way or another impact on AET and it conclude with a brief discussion of challenges and implications of development needs on AET.

2.2 Geographical/Environmental features

This section provides a broad overview of natural resources of the Free State Province such as soil attributes, climate and topography.

2.2.1 Topography

The Free State Province covers 129 437 square kilometer which is one-tenth of the national territory. The high-lying Eastern and North-Eastern areas of the Free State forms part of the so-called "Highveld". From these areas the height above sea level declines gently from $\pm 200\text{m}$ in the West. The Eastern and Southern Eastern border of the province is mountainous and forms part of the great Escarpment of the Northern Drakensburg. The mountainous area occupies a relatively small portion of the province. In general topography is well suited for agricultural activities.

2.2.2 Climate

The average rainfall patterns and distribution varies considerably from area to area, so is the case with temperature. The average annual rainfall in the Eastern varies between 600 and 750 mm and it declines gradually until it reaches a low of 250 mm as you go to the South-Western parts of the Free State. The average annual surface temperature varies between 12.5°C and 15°C in the eastern areas and increase to 17.5°C and 20°C in the West.

2.2.3 Soil

Soil depth is an important factor with regard to suitability for crop production. In general the deeper the soil, the higher the potential. Good soil is found in the Eastern as well as the Northern and Western Free State. Soil depth varies between 600mm and 900mm in the Eastern and Northern areas of the Free State. Soil deeper than 900mm are found in higher potential areas of North Western and Western Free State.

2.3 Demographic features

Free State population was estimated at 1.6 million during 1996. 69% lives in urban areas while the remaining 31% in non-urban areas (Statistics, S.A. 2002). According to 1994 figures blacks represented 83%, whites 13.6%, coloureds 2.7% and Asians 0.1% of the total population. The dominant languages in the province are Sesotho (57.4%), Afrikaans (14.7%), Xhosa (9.4%) and Setswana (6.4%) (Potgieter, 1995). The Free State population is depicted in a table below:

Table 4. Level of education of those aged 20 years or more.

Gender	No schooling	Some Primary	Complete Primary	Some Secondary	Std. 10/ Grade 12	Higher Qualification
Male	111.254	165.788	62.452	239.057	99.080	37.697
Female	124.895	162.288	67.857	254.091	100.574	38.568
Total	236.148	328.076	130.308	493.148	199.654	76.265
%	16.13	22.42	8.903	33.69	13.64	5.22

2.4 Agricultural Activities (sectors, land use, contribution to GDP)

The main agricultural activities in the Free State are mixed livestock and crop farming. Both these activities are practiced in the northern and eastern parts of the Free State i.e. (Northern Free State and Thabo Mofutsanyana district respectively), while Southern/Motheo/Gariep) central parts are regarded as livestock grazing areas. Main cropping areas are found in Southern-Eastern, Northern and North-Western Free State (Lejweleputswa district).

Cultivated land in the Free State Province covers 3.2 million hectares, while natural veld and grazing cover 8.7 million hectares. The province produces 33% of the national production of maize and 49% of wheat. The province supplies approximately 20% of the beef, wool and milk produce in South Africa, leaving tremendous potential for economic growth. Apart from pig and poultry farming, vegetables and fruits are also produced.

Of all the Provinces the Free State is probably the main agricultural contributor in terms of cereals to the country's Gross Domestic Product (GDP). In 1994 its contribution in comparison with the country was as follows:

Table 5. Free State Agricultural product contribution to GDP.

PRODUCT	FREE STATE R'000	SA R'000	FREE STATE % OF SA
Summer cereals	1 382 650	3 905 212	35.41
Winter cereals	635 245	1 813 418	35.03
Oil-seed	235 783	597 674	39.45
Potatoes and vegetables	481 800	2 678 362	17.99
Sales of livestock	970 080	7 049 220	13.76
Dairy	342 625	2 178 211	15.73
Farming units (number)	11 272	60 938	18.50
Agricultural land (ha)	11 342 502	82 209 271	13.8

Source: Statistics SA, AGRICULTURAL SURVEY (1996)

The Eastern and North-Eastern higher rainfall areas enjoy a temperate summer, but very cold winter nights and lengthy periods of frost occurrence, especially near the mountainous South Eastern border. Hail occurs fairly often during the early summer months in the Eastern and Northern Free State.

In the dry central and western areas, intense heat is experienced during midsummer days while winter nights are very cold. During August through to December hot summer winds prevails, accompanied by severe dust storms. Due to low rainfall, high daytime temperatures and consequent high evaporation rates experience in these areas they are very arid.

The major economic sectors in the Province are agriculture, mining, commerce and industry. The Free State's economic strength lies in the primary and secondary sectors with, agriculture contributing 14%, mining contributing 37%, business services, including manufacturing contributes 15%, trade 11% and finance 9% according to Free State's Development strategy. Recently the situation must have changed as a result of closure of some of the mines.

2.5 Non Agricultural Activities (farmers/rural household)

Most of the emerging and small-scale farmers are involved in an array of non-agricultural activities which contribute towards financing or supplementing their agricultural activities. In general their activities include among others taxi, shop(s) and/or spaza shops businesses. Others are engaged in part time jobs as gardeners, domestic workers, street vendors, etc.

In the Northern Free State out of about seven hundred and eighty emerging/small-scale farmers 0.07% are engaged in self-help projects such as sewing, catering, welding and juice making. In Thabo Mofutsanyana district a minimal 5% of the farmers do part time jobs such as domestic work.

2.6 Agricultural Education and Training in the Free State Province

In the past education and training in agriculture was based on the policies of 'separate development'. This meant construction of specified social roles for specified segments of the society. Knowledge and skills provision through schooling and/or apprenticeship curtailed freedom of choice and fair competition. The policies of 'separate development' deliberately constructed the social roles of groups of people based on race, gender, class and cultural considerations. Social structures were in place to channel groups into careers that were deemed suitable for 'black' or 'white', "women" or "men", "tribes" or "civilized", 'upper" or 'lower' classes. entry into the system of education and training was determined by these considerations. The content was culturally biased in favour of norms and values that originated from Europe. African cultural norms, values and knowledge systems were regarded as undeveloped, backward and unscientific (Carnegie, *et al*, 1997).

Agricultural education and training are essential for providing the leadership, technical and field personnel to evolve a dynamic agriculture. Agricultural education in particular involves a systematic programme of instruction for students who wish to learn about the science, business and technology of agriculture in all its manifestations. The rationale is to develop people who value and understand the vital role that agriculture plays in overall in the provincial, national and even global economic development.

The subject curriculum for agriculture at primary level is known as gardening and is very practically orientated and focuses on the establishment of flowerbeds, lawns and the production of vegetables. At secondary level this subject to a large extent is theoretically orientated and does not have a compulsory practical component. Only agricultural high

schools seem to have compulsory, practical component but those types of schools are said to have a very high operational cost. During data collection it was discovered that some schools are in the process of phasing out agricultural science as a subject. This was said to be due to high failure rate by learners and lack of resources for conducting practicals.

The Free State Province has got three tertiary institutions that offer AET namely: Glen College of Agriculture, Technikon Free State and University of the State. Qualifications offered vary from higher Certificate to diploma, diploma to D.Tech degrees and Diploma to PhD/DSc degrees respectively.

2.7 Provincial, National and Global imperatives

2.7.1 Economy and job creation

The Free State Province priorities in terms of job creation and economic growth are:

- To develop the farming and agric-business sectors.
- To tap the potential of the leisure, eco- and agri-tourism sectors.
- To attract direct foreign investment in areas of comparative advantages.
- Development growth corridors and clusters and to promote economic diversification and, in particular, a shift away from mining and toward manufacturing.
- To this effect four potential growth areas have been identified.
- The Bloemfontein, Botshabelo, Thaba Nchu and Excelsior corridor (Motheo).
- The Bethlehem, Harrismith, Phuthaditjaba corridor (Thaba Mofutsanyana).
- The Welkom, Virginia, Odendaalsrus, Hennenman (Leweleputswa or Goldfields) corridor.
- The Sasolburg area corridor (Northern Free State).

2.7.2 HIV/AIDS

At provincial level HIV/AIDS have detrimental effect both on commercial production and small farms. There might be reduction in cultivation of cash crops and labour intensive crops by small farmers, which could consequently affect food availability. The fall in productivity and competitiveness result in decrease in employment opportunities and local economic spin-offs.

At national level the negative impact of HIV/AIDS on farming community expands from a household to a community to different parts of the country.

The socio-economic deterioration will eventually have a significant impact at the national level. The decrease in the labour force, worker productivity, total outputs and overall economic growth could lead to a decline in national food supplies and a rise in food prices. Also the breakdown of commercial enterprises may undermine the country capacity to export and generate foreign exchange.

2.7.3 Globalisation

Globalisation is an international process of increasing trade between and among countries, regions and continents. It manifests itself in various forms, which include among other cross-border social, cultural and technological exchange. In the past the main driving force was transport technology while presently it is electronic communication. Globalisation brings with it some positive as well as negative aspects. Positive aspects include *inter alia* direct foreign investment, benefits of trade growth are shared between countries and etc. On the contrary, it has led to unequal distribution of wealth. Also large corporations invest in developing countries to gain access to cheap labour and natural resources. The list is endless.

For South African farmer particularly the small-scale farmer the implications are that he/she has to compete with highly subsidized European farmers. Consumer is well informed and demands practices compatible with their beliefs. One of the opportunities is that South African farmers gain access to lucrative export market. But with it comes the issue of product quality (Coetzee, 2002). While some South African commercial farmers are able to benefit to some extent from globalization and information technology due access to Internet the same cannot be said of the small-scale farmers. The benefits of the two do not trickle down to the level of the small-scale farmer.

2.8 Challenges and implications of development needs on Agricultural Education and Training

A very large proportion of the Free State population lives in poverty and is mainly concentrated in peri-urban and rural areas. This is in spite of the fact that agriculture is the third biggest contributor to the Gross Geographical product and contributes about 14% to the total agricultural sector in South Africa. The overall unemployment rate in the Free State Province is 34%. For youth under 30 years of age, the figure is 45%. According to Statistics SA (2000), the proportion of the population with a standard of living below the poverty line of R800 per month is estimated at 48% in the Free State for the year 2000.

The SA institute for Race Relations (2001) estimated that 54.1% of the total population of the Free State in 1995 lived in poverty. Their incomes are constrained because the rural economy is not sufficiently vibrant to provide them with remunerative jobs or self-employment opportunities.

The Land Reform and Restitution or LRAD (Land Redistribution for Agricultural Development) programmes, while they have achieved some of their objectives in terms of giving people land, they have, however, posed or given rise to other problems due to lack of post-settlement support services. In one instance a big group of people was settled on one farm and now is unable to function as a unit due to various factors including lack of compatibility in terms of their views. Some beneficiaries of the above-mentioned programmes could not secure loans from financial institutions and as such do not have resources to farm, while others do not have any farming background or training and are therefore not able to use their land productively.

The main challenges identified facing the Free State Agricultural sector include among others agro-production and processing, job creation and poverty alleviation. It is therefore crucial that the AET addresses the problem of job creation and poverty alleviation through agro-production and processing. The latter have potential in terms of stimulating job creation and poverty alleviation.

Agricultural industry is fraught with risk in the form of climatic variation, pests, disease and price risks as well as natural disasters such as droughts and floods (Free State Department of Agriculture, 2002).

To meet these challenges the implications are that vast amounts of resources are required in the form human and physical (infrastructure) resources e.g. teachers, trainers, scientists. Farmers and learners have to be trained to an extent that they are able to produce quality products to meet their own requirements, local or national demand and ultimately market their produce internationally.

The implications are that for the agricultural sector to be successful, it has to have effective knowledge base of and access to local, national and international markets. Sound agricultural economic principles also have to be applied in all agricultural farming activities. These are the roles agricultural education and training has to play. AET has to provide regular and continuous updating of agricultural economic and marketing information, which is user-friendly.

Summary

The Free State's climate, topography and soils are generally suited to agricultural production. The main agricultural activities in the province are mixed livestock and crop farming. In terms of cereals, Free State is the main contributor to the country's GDP.

AET at school level is affordable by two types of schools namely ordinary or academic schools offering agricultural science as a subject and agricultural schools. In the former, agricultural science subject is to a large extent theoretically orientated and does not have a compulsory practical component. On the contrary, the latter has got both and emphasizes the practical component. At tertiary level various qualifications are offered ranging from certificate to doctorate degrees.

An intriguing thing is that majority of the Free State population is black (83%) and medium of instruction used some providers of AET both formal and non-formal are English and/or Afrikaans. Another thing is that the AET system seems not to be addressing the Provincial, National and Global imperatives as well as challenges and implication of development needs on AET.

Chapter 3

Education and Training needs for Agriculture (and Rural Development)

3.1 Introduction

This chapter analysis training needs of the users of AET. It identifies competency-based performance problems or other training needs. It provides main task knowledge and skills needs of AET users in relation to their activities and training providers who could provide the required training and also the preferred method of training. The main stakeholders who form the basis of this chapter are farmers particularly small-scale. The same process of determining needs is done with providers of AET. The focus here is on extension agents, agricultural technical staff of private companies and educators. Some managers of the above-mentioned are included.

3.2 Participatory and Rural Appraisal (PRA)

Table 6 below present results obtained from twenty-six workshops held at various townships in the Free State Province. They reflect production enterprises of small-scale farmers, their knowledge in relation to their enterprises, training needs and service providers.

Table 6: PRA results

Production Enterprises	Knowledge they have
Poultry	Poultry production
Vegetables	Prevention of diseases
SSU (Sheep and Goats)	Optimum temperature
Cattle (Beef and Dairy)	Market arrangements
Pigs	Record keeping
Field crop i.e. Maize, Wheat and Sunflower	Feeding management
Abattoir	Cleaning the cages (buildings)
Fruits	Budgets
Fishery	Record keeping
Rabbits	Breeding
Sewing and knitting	To assist cow during birth problems
	Signs of a cow when on heat or requires bull
	Rearing of heifers
	Knowledge of milking cows
	Marketing of milk

Table 6 cont.

Training Needs	Service Providers
1. LSU (Dairy and Beef)	1. Department of Agriculture
2. Water Management	2. Nanzidlela
3. Production Techniques/Farming Systems Management, i.e. maize, wheat, sorghum, sunflower	3. Thusannang
4. Pig production	4. Department of Labour
5. Poultry production (layers and broilers)	5. Department of Social Welfare
6. Goats and Sheep production	
7. Land management	
8. Animal nutrition	
9. Business skills	
10. Marketing	
11. Vegetable production	
12. Shearing of sheep	
13. Soil analysis/Preparation	
14. Record keeping	
15. Group dynamics	
16. Project management	
17. Animal diseases	
18. Financial management	
19. Management of heifers	
20. Animal breeding	
21. Irrigation techniques	
22. Weed control	
23. Seedling production	
24. Fertilizer recommendation	
25. How to use herbicides and pesticides	

Explanation of abbreviations: LSU – Large stock units
 SSU – Small Stock Units
 PRA – Participatory Rural Appraisal

From table 6 above, the small-scale farmers in the Free State Province prioritized the production enterprises in order of preference. The emphasis was based on the importance of each enterprise in terms of its contribution (money) to household food security. From the table it is clear that poultry is the most pre-dominant enterprise in the Free State Province followed by vegetables and lastly sewing and knitting.

The knowledge they have was ranked and it was the repetition in most cases for different enterprises. Although under some enterprises no response was received on knowledge. Other respondents have technical know-how about farming. For knowledge they have record keeping, budgets and feeding management, etc. that appear to all enterprises but they need a recent information about farming.

Their training needs were also ranked accordingly. The ranking of training needs indicates that needs should be addressed in order of appearance. The services were prioritized accordingly to the service they made to the farmers as reflected from table 6. The following number of projects were sampled: 17 Poultry projects, 14 LSU and SSU, 12 Piggery, 31 Crops, 4 Sewing and knitting and 3 Bakery. All these projects listed their training needs as indicated above.

Table 7: Problems and survival strategies of farmers

Problems	Survival Strategies
1. Poultry	
Theft	They guard their livestock
Market	This people use only local market due to lack of transport
Training	They use old information they received from various providers of AET
Nutrition	Give pigs left over obtained from neighbors e.g. pigs given rotten feed
Feed	Purchased feed is expensive. No solution
2. Vegetables	
Theft	Guard their fields/produce
Market	They use local market
Ploughing equipment	They use rakes, forks, spades and wheelbarrows. This equipment is time consuming and it needs more labour on big areas
Electricity	No electricity at all. For irrigation they use municipality water which is expensive. For fencing they use barbed wire.
Water	They use municipality water, no irrigation system at all.
Training	They use old training information received from extension officers.
Land	Leased from municipality they are currently making a temporary arrangement
Weeds	(Weeding) Hand hoeing

Problems	Survival Strategies
Fertiliser	Use animal manure doesn't have fertilizers, as they are too expensive
Equipment	They neither have irrigation system nor some planting or harvesting equipment
Pests/Diseases	Use blue death and homemade pesticides to control pests
3. SSU (Sheep and Goats)	
Theft	They patrol the areas by themselves (Self security)
Land	Use backyard garden, rented land, and graze animals along the sides of public roads
Shearing equipment	Use old equipment (time consuming)
Medicine (stock remedies, vaccines, etc.	Obtain it from Vet/Co-operatives
Training	Use old training materials
Water	Obtain water from the rivers/dams for irrigation and animals drinking
Shelters for nutrition and breeding purpose	Use a corrugated iron proof
Burning complication	Construct fire belts
Animal Abuse	Help cows during parturition with bare hands
4. LSU (Beef and Dairy)	
Dipping tank	No solution
Shortage of equipment for A.I.	Use local market for buying and selling
Bull shortage	They use one bull for a big herd so the bull become tired at an early age
Trespassing	No tangible solution
5. Pigs	
Shelter	Provide shelter by using corrugated iron roof
Water	Use dirty water from the streams and municipality water
Training	Use old information obtained from extension officer or indigenous knowledge
Market	They use local market for buying selling
Medicines for diseases	They buy it from co-operative/Vet

Problems	Survival Strategies
6. Maize/Wheat/Sunflower	
Pests	Buy pesticides to kill pests from the co-operative
Birds	No solution
Frost and Drought	Use the available information from the weather bureau
7. Fruits	
Land	They don't have their own land for planting – they use own backyards
Training	Learn from other farmers
Fencing	Repair their old wire to prevent trespassing by animals
8. Sewing and Knitting	
Machinery	Use old machinery/Hire
Materials	No solution

The problems of the small-scale farmers were prioritized under each enterprise according to the responses of the farmers. The respondents need their problems to be addressed according to their priorities. The survival strategies that are currently used to solve the problems that are emerging and survival strategies were ranked in relation to the problems as reflected in table 7. For information required from small-scale farmers, see Annexure A.

Table 8 below and figure 1 present conditions of facilities used by teachers. Well-equipped library complemented by the latest information, laboratory, livestock as well as crop facilities play a significant role, which enable both teachers and learners to realize their potential. The table also shows teachers who furthering their studies and the qualification they studying for.

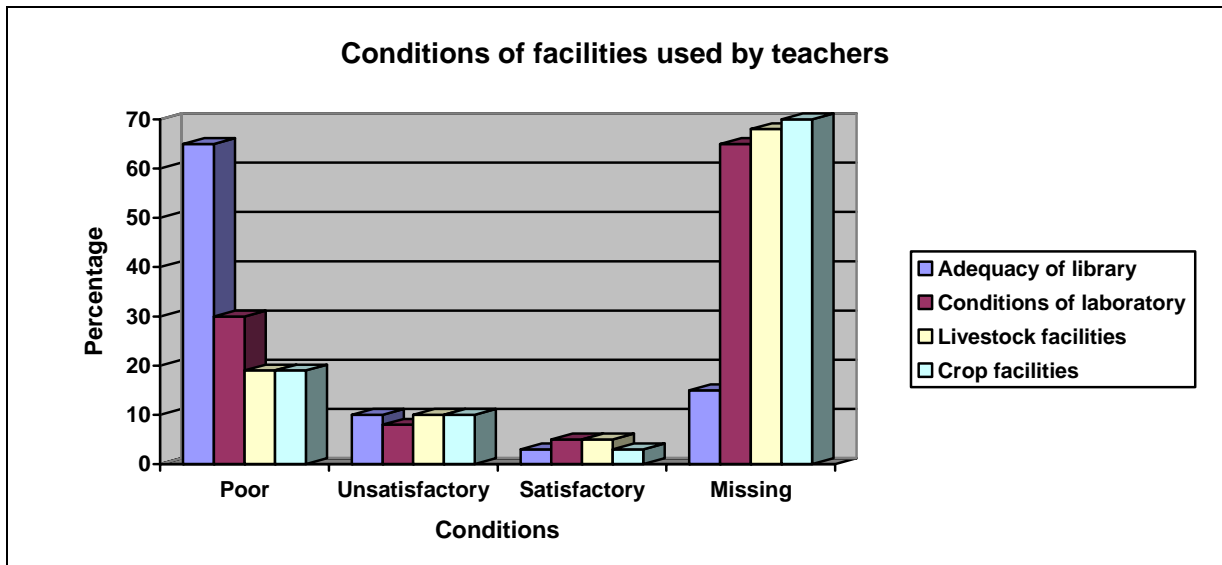
Table 8: Results of teachers

Variable	Freq.	%	Variable	Freq.	%
Gender			Further studies		
Males	23	69.7	Yes	14	42.4
Females	9	27.3	No	19	57.6
Missing data	1	3			
Total	33	100	Total	33	100

Population	Freq.	%	Pursuing studies	Freq.	%
Blacks			ACE		
Whites	5	15.2	Adv certificate	5	15.2
Coloured	1	3.0	B.AED. Hon.	2	6.1
Missing data	7	21.2	B.A.	1	3
			Computer	1	3
			FED	3	9.1
Total	33	100	Total	33	100
Qualifications			Employment status		
Std. 10	8	24.2			
M + 3	10	30.3	Permanent	31	93.9
M + 4	14	42.4	Contract	1	3
M + 5	1	3	Other	1	3
Total	33	100	Total	33	100
Condition of laboratory			Adequacy of library		
Poor	8	24.2	Poor	24	72.7
Unsatisfactory	2	6.1	Unsatisfactory	3	9.1
Good	2	6.1	Satisfactory	1	3
Missing	21	63.6		5	15.2
Total	33	100	Total	33	100
Livestock facilities			Crop facilities		
Poor	6	18.2	Poor	6	18.2
Satisfactory	3	9.1	Satisfactory	3	9.1
Good	2	6.1	Good	1	3
Missing	22	66.7	Missing	23	69.7
Total	33	100	Total	33	100
Adequacy of books			Adequacy of audio-visuals		
Poor	11	33.3	Poor	23	69.7
Unsatisfactory	5	15.2	Unsatisfactory	4	12.1
Satisfactory	10	30.3	Satisfactory	2	6.1
Good	6	18.2		4	12.1
	1	3			
Good	33	100	Total	33	100

Explanation of abbreviations: ACE = Advanced Certificate in Education
 FED – Further Education Diploma
 Freq. Frequency

Figure 1



The results show that facilities are mainly poor particularly those of livestock and crop. Missing data on average, accounted for 55%. It is, however, not clear why such a big number of respondents did not answer that particular question. That might be probably one of the reasons why most learners get bad results at the end of the year. In general facilities used are poor and/or inadequate and therefore warrant attention by the authorities. An encouraging thing, however, is that library facilities are adequate. Generally laboratory conditions are poor or rather unsatisfactory since they do not meet the requirements of agricultural science laboratories. For the questionnaire targeting teachers, see Annexure B.

The table below depicts profiles of learners who are doing agricultural science subject. It gives their areas of residence whether they do practical or not and where they do their practicals.

Table 9. Results of learners

Variable	Freq.	%	Variable	Freq.	%
Gender			No practical		
Males	295	56.5		106	20.3
Females	215	41.2		53	10.2
Missing	12	2.3		27	5.2
Total	522	100		3	0.6
Place				5	1.0
Farm	76	14.6		1	0.2
Village	176	33.7		327	62.6
City	18	3.4	Total	522	100

Variable			Variable		
Township	235	45	Prac/Theory		
Other	1	0.2	Practicals	213	40.8
Missing	16	3.1	Theory	142	27.2
			Missing	167	31.9
Total	522	100	Total	522	100
Practical			Prac/Venue		
			Class	156	29.9
Yes	201	38.5	Field	103	19.7
No	278	53.3	Laboratory	21	4
Missing	43	8	Other	39	7.5
			Missing	203	38.9
Total	522	100	Total	522	100

Explanation of abbreviation: Prac = Practical

38.5% of the learners sampled are doing practical and 53.3% don't have practical. From these percentages it is clear that most learners don't have practical at school level. This might be one of the reasons why most learners do not have interest in agriculture and do not pursue it at higher institutions. Some of the schools sampled lack resources such as land, infrastructure, etc.

For those who have practicals, they are conducted in different venues e.g. in class 29.9% and in laboratory 4%. From these results it is also clear that the learners don't have resources to do practical in field. It might be why most learners are doing their practical in classes and in laboratories only.

The question was asked as to what motivate people to choose agricultural science as the subject at school, 43.3% says they realize good opportunities in agricultural fields while 46.4% says they see it as a job creation tool because they say if you have a farm you can become self-employed and employ others to strengthen the production of the farm.

The table below gives the results of agricultural technical staff of companies and parastatals sampled. Their questionnaire was trying to evaluate relevancy of education and training they received from institutions where they studied in relation to the job they are currently performing. For the questionnaire targeting learners see Annexure C.

Table 10: Results of Agricultural Technical Staff of companies

Variable	Freq.	%	Variable	Freq.	%
Qualifications			Gender		
Certificate	11	40.7	Male	27	100
M + 3	10	37	Female	-	-
M + 4	2	7.4			
M + 5	4	14.8			
Total	27	100	Total	27	100
Race			C.material		
Whites	21	77.8		3	11.1
Blacks	6	22.2		3	11.1
Coloured	-	-		3	11.1
Indians	-	-		5	18.5
Total	27	100		3	11.1
Scient-theory				10	37
	4	14.8	Total	27	100
	3	11.1	T.Farm		
	4	14.8		2	7.4
	1	3.7		2	7.4
	10	37		2	7.4
Missing	5	18.5		3	11.1
Total	27	100		4	14.8
Pract-classes				3	11.1
	5	18.5		2	7.4
	4	14.8		5	18.5
	4	14.8		4	14.8
	2	7.4			
	12	44.4			
Total	27	100	Total	27	100
Education	13	48.1	Train	9	33.3
Training	9	33.3	Education	13	48
Comm & Aware	3	11.1	AET	5	18.5
Job Creation	2	7.4			
Total	27	100	Total	27	100

Explanation of abbreviations:

Scient-theory – Scientific theory
 Pract-classes – Practical classes
 T-farm – Teaching farm
 Comm & Aware – Community Awareness
 AET – Agricultural Education and Training
 M + 3 – Matric plus three year Diploma/Degree
 M + 4 – Matric plus four year degree
 M + 5 – Matric plus five year degree

Majority, i.e. 48.1% says education is the most important thing in enhancing thinking capacity in agricultural technical staff. The reason is that education brings about new ideas and prepares one to adjust to new technologies. 33.3% prefers training to focus more on farming enterprises. The reason is to align themselves with the changes that exist micro and macro environment e.g. inflation rate, prime rate and repo rate, etc. These factors exert an influence on an enterprise. 11.1% says community should be conscientised in terms of agriculture. This is important because most people are not aware of the significant role agriculture plays in the economy of the Free State Province. For questionnaire on private companies refer to Annexure D.

The below table shows results of co-operative members who formed part of the study area. It gives status of members within the co-operative, education level and services they get from the co-operative.

Table 11: Results of co-operatives

Variables	Freq.	%	Variables	Freq.	%
Registered			Qualification		
Staff member	2	17	Std. 4	2	16.7
Reg. member	8	67	Std. 5	1	8.3
Both	-		Matric	5	41.7
Other			Other	-	
Missing	2	17	Missing	4	33.3
Total	12	100	Total	12	100
Gender			Services		
Male	6	50	Adv. farmer	5	41.6
Female	-	-	Training farm	6	50
	6	50	Provide inp	1	8.3
Total	12	100	Total	12	8.3
Type/farming			S. from co-op		
Mixed farming	6	50	A on request	6	50
Crop farming	4	33.3	Inputs	1	8.3
Animal farming	2	16.7	Training	3	25
			Marketing	2	16.7
Total	12	100	Total	12	100
Skills needed					
Crop farming	5	41.7			
Animal farming	7	58.3			
Total	12	100			

Explanation of abbreviations:

Freq. – Frequency
 Reg. member – Registered member
 Provide inp – Provide inputs
 Adv. farmers – Advice farmers
 A. on request – Advice on request
 S. from co-op – Staff from co-operative
 Std - Standard

The respondents were engaged in 3 types of farming i.e. mixed farming, crop farming and animal farming. Members of the co-operatives do not have agricultural qualifications. Even though the respondents claim to be good in practical, skills that they require suggest otherwise. There is still more to be done in terms of theoretical and practical training so they are able to marry the two. For the questionnaire co-operatives see Annexure E.

The below table presents results of lecturers of both Glen College of Agriculture and Technikon Free State. It shows further studies that they are currently engaged in and who would benefit from those studies.

Table 12: Results for Lecturers

Variable	Freq.	%	Variable	Freq.	%
Gender			T. Qualification		
Male	8	80	Yes	2	20
Female	2	20	No	7	70
			Missing	1	10
Total	10	100	Total	10	100
F. Studies	Freq.	%	F. Studies	Freq.	%
Yes			D. Tech. Agr.		
No	2	20	M.A.	1	10
Missing	3	30	M. Tech. Agr.	1	10
			B. Tech.	1	10
			MBA	1	10
			Missing	4	40
Total	10	100	Total	10	100

Explanation of abbreviations:

- B.Tech. Agric – Bachelor of Technology in Agriculture
- D. Tech Agric – Doctor of Technology in Agriculture
- M. Agric – Masters of Agriculture
- M. Tech. Agric – Masters of Technology in Agriculture
- Engaged R – Engage in research
- T. Qualification – Teaching Qualification
- F. Studies – Further Studies
- MBA – Masters of Business in Administration

From table 12 the results show that majority of the respondents i.e. 50% is engaged in research. It might be due to the fact that since they are in Higher Education Band they are obliged to do research. The missing data accounts for 50% and it is not clear as to which qualifications the respondents are studying

for. The beneficiaries of research or practicals are students, farmers and breeders.

Of the ten lecturers who completed the questionnaires four of them which accounted for 33.3% indicated that training should be need drive, focus on skills development and capacity building of the farmers. Another 33.3% emphasized the importance of co-ordinated AET to achieve excellence. They said if AET could be co-ordinated there could be excellence in Agricultural Education and Training for the benefit of all involved. 8.3% and 16.7% said more funds should be committed to research and marketing agriculture and that providers of AET should liase with the industry in order to ensure that students get employed immediately after completing their studies respectively. The rest stressed a need for a total revamp of AET system. They said the whole system should be restructured such that it services all the stakeholders.

The figure below, depicts percentages of lecturers of both Technikon Free State (Faculty of Agriculture) and Glen College of Agriculture who are currently furthering their studies and who are not. It also show percentages of beneficiaries who it is anticipated that they would benefit from the research or studies being conducted.

Figure 2 (a)

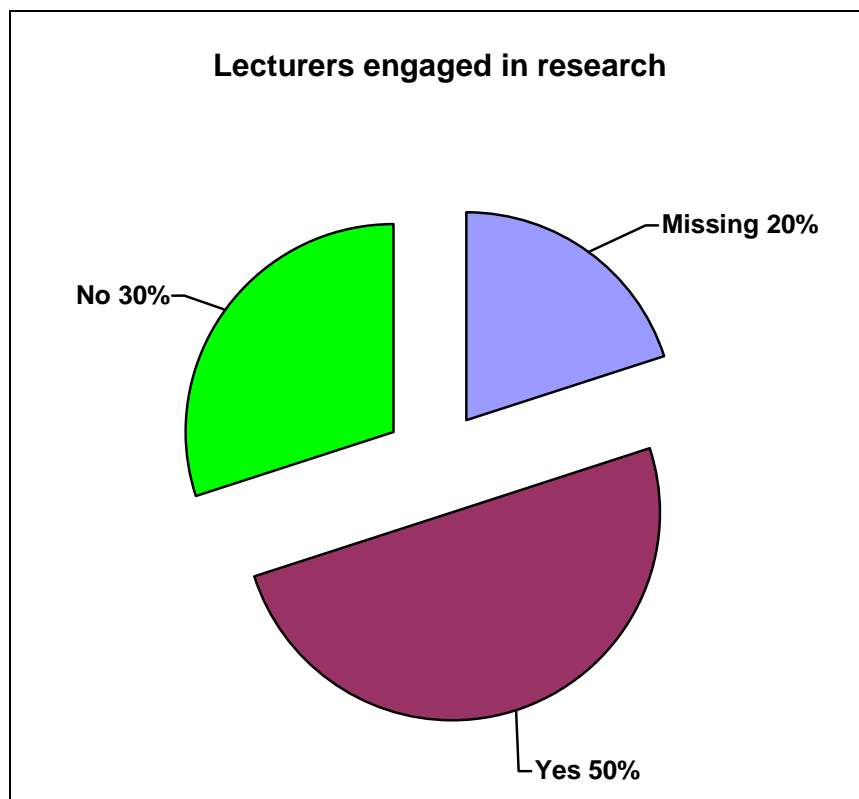
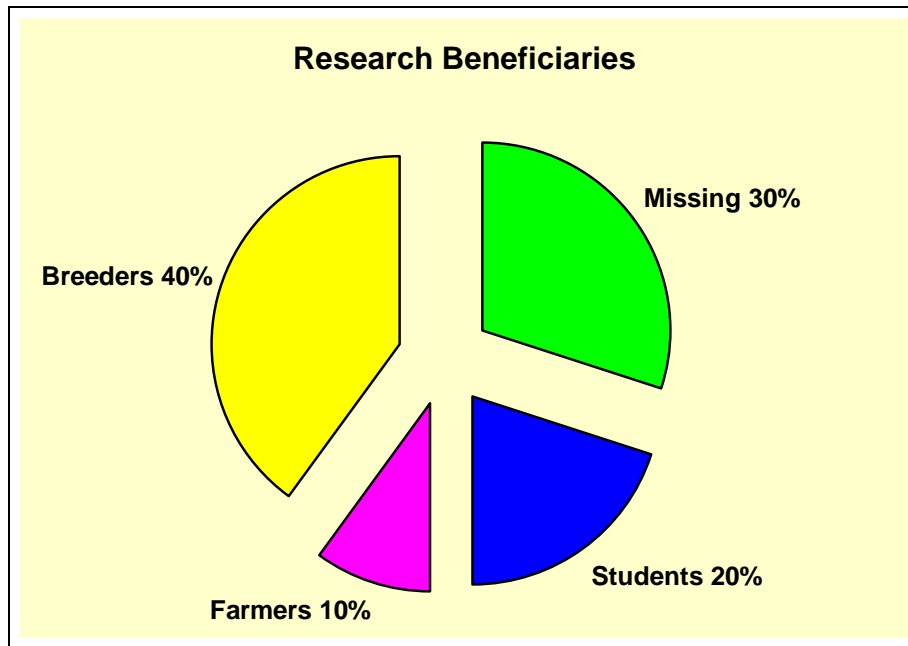


Figure 2 (b)



The table below, present results of final year students of Glen College of Agriculture and Technikon Free State agricultural students. It shows gender, educational background, i.e. type of high school they attended and whether they have job promise for next year or not. It addresses educational environment of institutions where they studying, medium of instruction, etc. For questionnaire targeting lecturers see Annexure F.

Variable	Freq.	%	Variable	Freq.	%
Gender			S.A. Citizen		
Male	10	58.8	Yes	16	94.1
Female	6	35.9	No	1	5.8
Missing	1	5.8	Missing		
Total	17	100	Total	17	100
T. School			F. Experience		
H. School	4	23.5	Yes	7	41.2
Academic	7	41.2	No	9	52.9
Comprehensive	5	29.4	Missing	1	5.9
Missing	1	5.9			
Total	17	100	Total	17	100
Present studies			Job Promise		
Diploma	11	64.7	Yes	0	0
B. Degree	5	29.4	No	17	100
Higher Degree	1	5.9			

Total	17	100	Total	17	100
Practical classes			Job compete		
Yes	5	29	Yes	13	76.5
No	12	71	No	4	23.5
Total	17	100	Total	17	100
F. Speciality			Motivation		
Agric Scientist	1	5.9	Farm interest	10	58.8
Animal Prod	7	41.2	A. Economy	3	17.6
Agri-Business	7	41.2	Family	2	11.7
Plant Production	2	11.7	Education	2	11.7
Total	17	100	Total	17	100
M. Instruction			AET challenge		
Afr. and English	6	35.3	Training	9	53
English	7	41.2	Agric Motivation	4	23.5
Afrikaans	1	5.9	Job creation	2	11.7
Missing	3	17.6	Transformation	2	11.7
Total	17	100	Total	17	100

Explanation of abbreviations from table of final year students:

T. School – Teaching schools

F. Experience – Farming experience

B. Degree – Bachelor Degree

Job compete – Job competence

Economy – Agricultural Economy

Animal prod. – Animal Production

F. Speciality – Further speciality

For the questionnaire on final year students refer to Annexure G. How many final year students they are having practicals or not? These is the problem of lacking the physical resources and natural resources that could lead to high failing rate because agriculture is a practical subject.

From the questionnaire the question was asked i.e. what is your suggestion regarding AET? 10 and 20 percentage respectively as reflected in the table says education and training must be emphasized since they impart new information in people. Others say agricultural motivation should be done vigorously since agriculture could be used to create jobs and thus alleviate poverty.

The table 14 and figure 3 below depicts results of sampled commercial farmers. They show type of enterprises the farmers are engaged in, where they market their produce, sources of information and level of skill of their employees.

Table 14: Results of commercial farmers

Variable	Freq.	%	Variable	Freq.	%
Service.Agric			R. Station		
Yes	7	41.2	Yes	4	23.5
No	9	52.9	No	9	52.9
Missing data	1	5.9	Missing data	4	23.5
Total	17	100	Total	17	100
Knowledge Agric.					
Yes	4	23.5			
No	13	76.5			
Missing	-				
Total	17	100			

Explanation of abbreviations from commercial farmers:

R. Station – Research Station

Service Agric – Service from Agriculture

ENTERPRISES, MARKETING AND EMPLOYEES OF COMMERCIAL FARMERS

Figure 3 (a): Enterprises

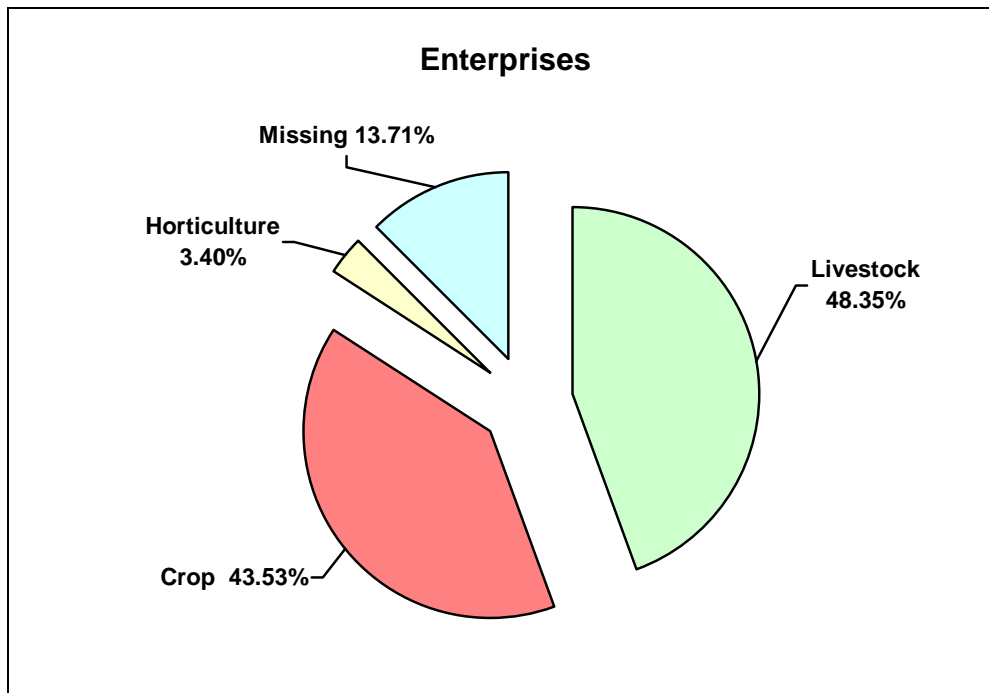


Figure 3 (b): Marketing

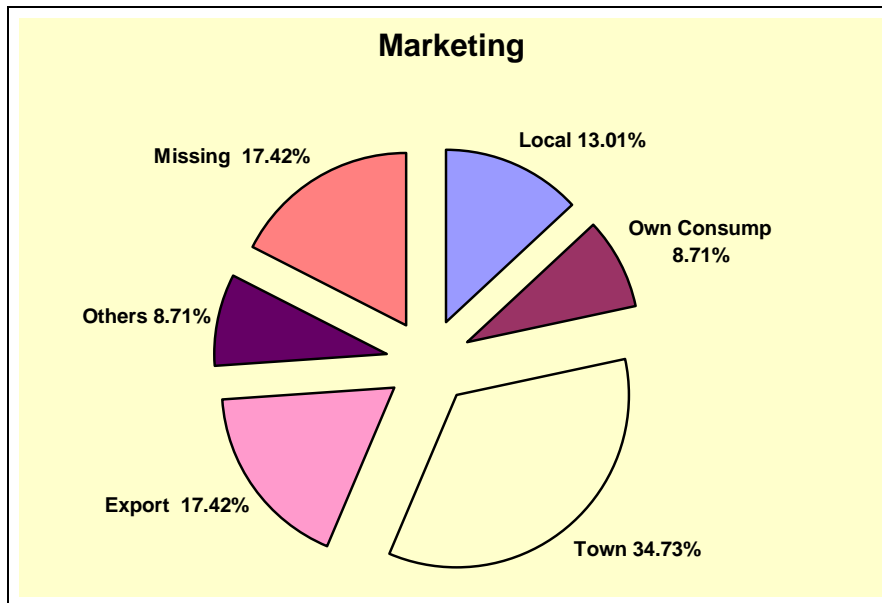
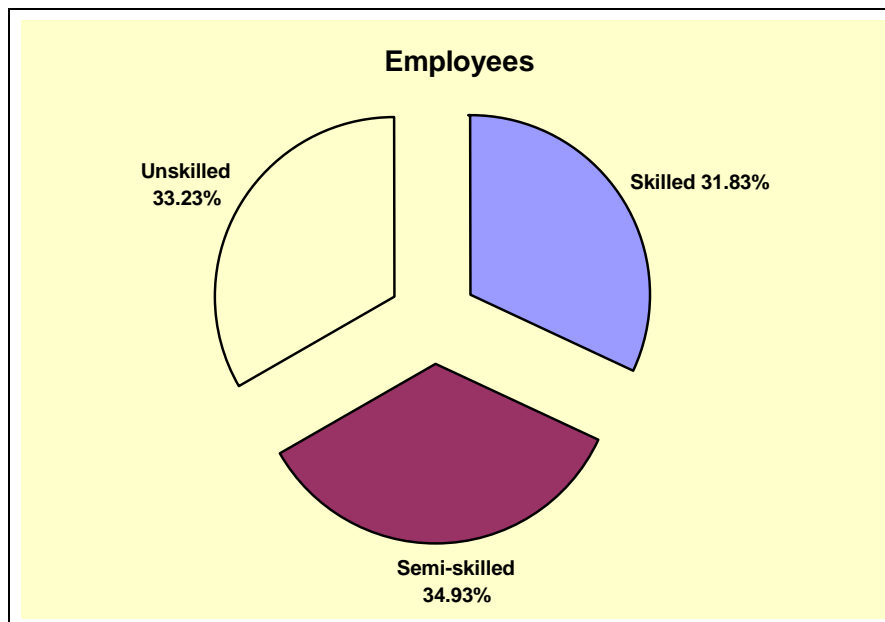


Figure 3 (c): Employees



Most commercial farmers are farming with livestock and crop (Field) that is 48.3% and 34.5% respectively, while horticultural crops account for 3.4%. The reason might be that field crops are labour intensive whilst with field crops most of the operations are mechanized. There seem to be enough market for their produce as it is sold to local community 13%, export market 17.4%, own

consumption is 8.7 and the rest is missing. Skilled labour is 31.8%, semi-skilled 34.9% and unskilled 33.2%. Both semi-skilled and unskilled labour accounts for 68.1%. Even though it is not clear why these categories have high percentages they warrant serious attention. For commercial farmer's questionnaire refer to Annexure H.

TRAINING NEEDS ANALYSES

This involves identifying competency-based performance problems or other training needs and prioritization of these needs.

1. Teachers and Lecturers

❖ Activities

- Facilitation of theoretical lectures and practical
- Prepare thorough lessons plans
- Compile proper study guides according to HEQ pro-forma
- Observation, monitoring and assisting of students with difficulties prior to referral for counseling.
- Giving after care to students during the post counseling/guidance process according to agreed recommendations.
- Give task to students that will encourage the use of facilities in the library.
- Facilitate short course programme of the College/Technikon and/or University of the Free State.
- Develop short course material.
- Liase with all experts in different fields.
- Compile proper question papers memoranda according to College/Technikon/University prescriptions.
- Assist in the invigilation of both test and exams as requested.
- Evaluate students Demonstration of the relevant practical to students.

❖ Skills and knowledge required to undertake activities

- Communication skills
- Listening skills
- Computer skills
- Writing skills
- Facilitation skills

❖ Training and/or other needs

- Resources/facilities for practicals
- Computer skills

2. Training of department of agriculture

❖ Activities

- Identify and prioritize training needs of clients to ensure relevancy of training.
- Plan and develop training material to keep abreast of new technology and information.
- Plan and execute training sessions to ensure relevancy and cost effectiveness.
- Evaluate and monitor training sessions to ensure needs had been addressed and technology/information has been adopted.
- Provision of specialized service and advice to clients to address their specific needs.
- Linkages with other stakeholders to ensure proper sharing of information.
- Handling of administration functions emerging from the above-mentioned activities to ensure a proper co-ordinated section.
- Applying the performance and development management programme in order to promote development of individuals and productivity of the Department.
- Strengthen partnership and co-operation with other stakeholders.

❖ Skills and knowledge required undertaking activities

- Communication skills
- Listening skills
- Computer skills
- Facilitation skills

❖ Training needs

- Computer skills
- Monitoring and evaluation
- Planning material development skills

3. Teachers

- Preparation of training lessons
- Conducting practicals
- Evaluation of learners
- Administration

❖ Training needs

- Monitoring and evaluation
- Implementation

3. Technical Staff of Agricultural companies and parastatals

1. Valuation of farm property
2. Valuation of financial position of farmers
3. Assessment of applications for loans
4. Marketing Auctions

❖ Skills/knowledge required to undertake the activities

- General knowledge of farming activities
- Crops
- Livestock
- Soil Science
- Production Economics
- Computer literacy

❖ Existing knowledge and skills

- Production/Agricultural Economics
- Soil Science
- Livestock Production
- Botany

❖ Skills gap and training needs

- Agricultural economics – Macro economics
2% of the respondents highlighted a need to do agricultural economics. The rest did not provide their training needs. This might be due to the fact that they might not be aware of the extent of the training needs of their clients.

❖ Preferred training method and providers:

- Technikon/Agric college
- University

❖ Method of provisioning

- 50% practicals and 50% theory

4. Managers of agricultural private companies and parastatals

- Marketing
- Managing a bank
- Area Manager
- Co-ordinate sales

❖ **Skills and knowledge required for the job**

- Negotiations Skills
- Communication Skills
- Conflict Management
- Listening Skills
- Human Resource Skills
- Financial Skills
- Farming Skills

❖ **Existing knowledge and skills**

- Personnel Management
- Industrial Relations
- Business Management
- Training Method
- Labour Law

❖ **Training needs**

- Market values
- Valuations
- Computer skills
- Communication skills
- Plant physiology

❖ **Preferred training method and provider**

- Mainly practical methods

❖ **Providers**

- Technikon

5. Agricultural Researchers and Agricultural Technical staff of private companies

- Conducting trials/research
- Making recommendations/advises on production matters
- Training farmers
- Writing articles
- Conduct farmer's days
- Soil classifications
- Fertiliser (sales) recommendation to farmers

❖ **Existing knowledge/skills**

- Communication skills

❖ **Training needs**

- Marketing
- Computer training
- Precision farming
- Economics
- Agronomy
- Communication skills

❖ **Training providers in order of preference**

- University
- Technikon/College

6. Extension Officers

- Provide technical support to CPF-SP projects
- Planning and after care of LRAD projects
- Identifying training needs of farmers
- Rendering extension and development services to communities
- Assisting RAO's (Rural Animation Officers) in their activities
- Assisting in planning and implementation of Land care programme

❖ **Qualifications/skills for extension officers of department of Agriculture**

- B.Home Economics
- Diploma in Home Economics
- Diploma in Animal/Plant Production
- BSc, B.Agric
- MSc Agric

❖ **Training needs**

- Marketing
- Conflict resolution
- Extension i.e. groups dynamics, methodology, etc.
- Computer skills

Summary

Small-scale farmers throughout the Free State province re-engaged in various agricultural related enterprises, which include among other: field crops, vegetables, large and small stock. In general the knowledge they have in relation to their enterprises is restricted to basic production skills. Their training needs comprise advanced production skills, business skills, marketing skills, etc. Small-scale farmers have a wide range of problems – some of which they are unable to solve and thus would require assistance from the authorities. High on the list these are: land shortage, water, equipment, etc.

Providers of AET have training needs which have to be addressed as soon as possible if they are too effectively render a quality service to their clients. Their training needs include *inter alia*: advanced production skills, computer, facilitation, monitoring and evaluation, marketing skills, etc.

The big question is whose needs will the AET strategy address first between users and providers of AET to do that without sacrificing the needs of other group.

Chapter 4

Provision of Agricultural Education and Training

4.1 Introduction

Profiles of three main providers of formal tertiary agricultural education and training namely University of the Free State, Technikon Free State and Glen College of Agriculture are highlighted in this chapter. The profiles include courses/training offered target groups, enrolments, cost of tuition and method of providing that tuition, management structure of an institution and capacity and resources of those institutions in terms of providing training. Status of non-formal education and training in the province is looked at in respect of the above. Various providers of non-formal education and training are assessed based on the above-mentioned.

Table 15: Provision of Formal Education in Free State Province

Institutions	Details of functioning	
Technikon Free State	Target groups	Youth, adults, women and physically challenged
	Admission requirements	Senior Certificate at least 27 points
	Methods	70% Theory and 30% Practical
	Qualifications	National Diploma B. Tech. Agric M. Tech. Agriculture D. Tech. Agriculture
	Costs	Yr 1 : R8 490.00 Yr 2 : R8 530.00 Yr 3 : R5 356.00 and R6 808.00
	Staffing	HOD or program head 3 Doctors degrees 2 Masters 1 Masters degree – part time lecturers 3 BSc. Hons 1 Four Degree 2 Diploma (Assistant lecturers)
	Enrollment	204 students
Glen College of Agriculture	Target group	Youth, adults, women, disabled
	Admission requirements	Matric or national certificate

Institutions	Details of functioning	
	Qualification costs	2 year Certificate and 3 year Diploma Y 1 : R1 430.00 Yr 2 : R1 320.00 Yr 3 : R760.00
	Staffing Enrollment	Deputy Director Vice Principal Principal HOD: 3 Registrar Capacity and Resources 1 Veterinary Doctor 4 Masters degree 6 B. Degree 2 N. Diploma 120 students
University of the Free State	Target groups	Youth, Adults, Women, Disabled
	Admission requirements	Matric with at least 28 points
	Methods	30% practical and 70% theory
	Qualifications	2 Year Diploma B. Agric Degree B.Sc. Agric in various fields Post graduates Honours MSc. Agric MSA M. Agric PhD DSc
	Costs	Diploma Yr 1 : R12 168.15 Yr 2 : R13 387.00 B. Agric Yr 1 : R13 409.15 Yr 2 : R14 774.00 Yr 2 : R24 250.65 BSc. Agric Yr 1 : R11 635.24 Yr 2 : R17 419.91 Yr 3 : R21 360.96 Yr 4 : R13 687.00 Honours R8 186.00

Institutions	Details of functioning	
		Masters R7 500.00 and R7 719.00
	Staffing	1 Faculty Head: Dean 12 HOD 23 Professors include 9 HOD 14 Doctors About 11 Lecturers with masters degrees
	Enrollment	643 students

4.3 Non-formal Agricultural training providers

Table 16:

Institutions	Details of functioning	
1. Botsitso Development Group	Target group	Farmer, Youth, Women
2. Lethoteng Training Centre	Admissions	N/A
3. Lidly Training Centre	Methods	70% Practical and 30% Theory On farm training
4. M.U.C.P.P. 5. National Wool Grower Association 6. Skills for Africa 7. Skills for All 8. Thusanang Training Centre 9. Unique Training Solution	Courses	1. Vegetable production 2. Weed, foliage and Pest control 3. Fertilisation and Irrigation 4. Land preparation 5. Transplanting of seedlings 6. Business skills (Agriculture) 7. Poultry Production 8. Shearing (hand) 9. Shearing (machinery) 10. Cultivation on vegetables 11. Seedling production 12. Weed foliage and Pest Control 13. Garden Maintenance 14. Pruning of Fruits 15. Flower arranging
	Costs	N/A
Botsitso	Staffing	1. Managing Director (MSA) 1 Trainer (B. Agric)
	Enrollment	120

Summary

The three provincial tertiary institutions offer agricultural qualifications ranging from higher certificate to D.Tech/PhD degree. Of the three, one i.e. Technikon Free State is not offering non-formal courses. Their target groups comprise youth, adults, women and disabled. Admission requirements into these institutions are Matric/Senior certificate. Cost of tuition varies from R8 490.00, R1 430.00 and R12 168.15 for first of diploma course for Technikon Free State, Glen College of Agriculture and University of the Free State respectively.

There are approximately nine private non-formal training providers registered with Free State Department of labour. They provide one to five day short courses, which are mainly agricultural production and business skills. With regard to cost of course it is not clear as to how much participants pay per day but it seems as the costs are the ones who commission trainers. Trainers for department of agriculture offer training for free but they are constraints capacity in term's personnel. They are unable to effectively train the entire province.

Chapter 5

Agricultural Education and Training gaps (Discussions and findings)

5.1 Introduction

This chapter discusses the findings in chapter three and four. It tries to match the needs of users against provision of training and further identifies the gaps in the needs and provision of training. It also tries to answer questions such as: are the providers of AET targeting right clients, are courses aligned to clients' needs, are methods of provisioning meeting preferred methods or conditions of clients, is the cost of tuition affordable, etc.?

5.2 Are the providers targeting the right clients?

AET training providers particularly non-formal are targeting the right clients, in this case small-scale farmers as their courses are targeting mainly small-scale farmers. University of the Free State and Glen College of Agriculture are to some extent targeting the right clients as their primary clients are students and secondary clients are farmers, but in the case of small-scale, female and youth farmers they falling short. This is reflected by their admission requirements, cost of tuition and medium of instruction.

5.3 Are courses/programmes aligned to clients needs?

Courses offered by the formal AET providers are not always aligned to the needs of the clients. In the case of the students they provide to some extent what the students need but that is not necessarily what the industry requires. With regard to small-scale, female and youth farmers they offer structured courses without having first done training need analysis of these farmers. On the contrary non-formal training providers, both private and government offer courses that are aligned to the needs of clients, as prior offering such courses they conduct training need analysis.

5.4 Are methods of provisioning/training meeting preferred methods of methods or conditions of clients?

Methods of provisioning employed by formal training providers in the case of non formal courses are not meeting preferred methods and conditions of clients, i.e. small-scale farmers as highlighted in some PRA workshops that they prefer to be trained in their own or situations similar to theirs as opposed to what these providers are doing, that is, conducting training courses in their residence. These institutions conduct their courses under ideal conditions in their respective areas, which are far from conditions of

these farmers who are mainly resource poor. The clients also prefer that 70% of the course should be practical and 30% theory – not the other way round. They also prefer to be taught in vernacular as opposed to English and Afrikaans. On the other hand, non-formal training providers' methods of training provision meet preferred methods and conditions of clients, as they go out and do training where these farmers are farming and do practical with what the farmers have.

5.5 Is the cost of tuition affordable?

In most cases the courses are not affordable, as they are very expensive. For an example, Financial Planning and Management at the University of the Free State cost R1 350.00 for only three days excluding accommodation. While both the ones offered by Glen College of Agriculture and private trainers charge at least R50.00 per day. This amount excludes accommodation and meals.

5.6 Are admission requirements appropriate for potential clients?

Admission requirements by the formal training providers are not always appropriate for potential clients. In the case of students they use point system where by they admit students based on the symbols they obtained at standard 10 or grade 12. For an example, Technikon Free State requires 27 points while University of the Free State requires 28 points. Glen College only needs pass in matric. These requirements discriminate against people who passed matric but did not obtain those points and people who did not do matric/grade 12 but have worked in agricultural industry and therefore have a valuable experience. It even discriminates against those who would like to farm but are in no position of attending formal education. With regard to non-formal courses offered by these institutions the discriminating factor is the medium of instruction used.

5.7 Capacity and resources of providers

The University has tremendous capacity in relation to human resources. With regard physical resources it has among others, 7 laboratories and about 11 lectures rooms. Other resources such as a library are shared with other faculties. For Glen Agricultural College personnel capacity is as follows: 1 Veterinary doctor, 4 Masters degree, 1 BSc. Hons, 4 B. Tech/Hons and 3 Diploma. For Technikon 3 Doctors degree, 2 Masters, 1 Masters degree part-time lecturer, 3 BSc. Hons, 1 Four year Degree, 2 Diploma (Assistant lecturers).

Conclusions/Summary

AET Non formal training providers, both private and government trainers are targeting right clients. They offer courses that are aligned to the needs of clients as they do training needs analysis prior offering training. On the other hand, short courses offered by formal training providers are not targeting small-scale farmers. This is reflected by tuition fees which are not affordable to and methods of provisioning that do not meet conditions of small-scale farmers. Admission requirements by formal training providers are not appropriate to small-scale farmers. Main prohibiting factors are level of education of small-scale farmers and medium of instruction.

Formal AET training providers have been found to have potential in terms of offering training. The only that has to change is the method of provisioning.

Chapter 6

Conclusions and Recommendations

6.1 Conclusions

From the study it is evident that the Free State Province is faced with a critical challenge of unemployment (34%) and severely restrained access to agricultural education and training due to problems of distance, costs, medium of instruction and methods of provisioning. Small-scale farmers are among those who were excluded from AET mainstream and are still not adequately serviced by the AET providers. There is a need to reorientate education and training to deliver services to small and medium scale, female farmers and farmers who are facing resource, land, information and market constraints.

Provincial, National and global imperatives are developed of farming and agri-business sectors, which will ensure food security. HIV/AIDS related deaths have a detrimental effect on both commercial and small-scale farmers and has capacity to undermine economic growth efforts.

Globalisation as a process of increasing trade between and among countries is another factor that should be taken into account as it exerts some influence in agricultural education and training.

Small-scale farmers mostly farm with livestock i.e. poultry, beef, dairy, pigs, sheep and goats, vegetables and field crops. They are not practicing any form of value adding to augment their products. Most of them have been trained in basic production skills. They still need to a greater extent business or financial management.

6.2 Recommendations

The majority of small-scale farmers lack skill on terms of running their enterprises up to a level of commercial entities, due to the history of exclusion, which has resulted in low literacy level. Majority of farmers falls in those categories of no schooling as reflected in table 1 in 2.3. It is thus recommended that some form of basis adult education be provided but the thrust should be on the skill pertaining to a particular type of farming enterprises they are engaged in. During training courses care should be taken that trainers use the language which could easily be comprehended by the farmers. In short, principle of adult education should be adhered.

6.2.1 Training supply

The three AET formal providers of higher learning i.e. University of the Free State, Technikon Free State and Glen College of Agriculture have an important role to play in terms of reducing skills deficit (agriculture) and uplifting the standard of farming among small-scale farmers. The primary obstacle at present moment is access to these institutions by these farmers and cost of training/tuition as well as method of provision. These have to be addressed as soon as possible.

6.2.2 Access to AET by farmers

Short courses offered by both Glen College of Agriculture and University of the Free State cater for people with at least matric leaving out most small-scale farmers. So the standard has to be reduced to the level of these farmers with an emphasis on practical part. Glen College in particular has to re-introduce 1 year certificate in farming but now targeting small-scale farmers. This will require a paradigm shift in terms admission requirements.

6.2.3 RPL

A national process of accrediting R.P.L. (Recognition of Prior Learning) has to be fast-tracked so that it could facilitate speedy implementation and access to AET by the previously disadvantaged. This will afford many an opportunity to be enrolled in tertiary institutions, as there are many people with potential but who are denied access into these institutions because they do not meet the requirements.

6.2.4 Technikon Free State (short courses)

Technikon Free State does not have short courses (agriculture). It is thus recommended that short courses be introduced at this institution. This move will also benefit the institution in that it is training agricultural management students. It therefore has to be conservant with the conditions of and situation under which small-scale farmers are practicing farming which is where some of their students are going to work.

6.2.5 Co-operation among institutions

It is recommended that short three institutions co-operative Establishing and providing short courses. Since this has an advantage of bringing about synergy and avoiding duplication. It will also afford others an opportunity of tapping into resources and facilities which their institutions might not have.

6.2.6 Cost of tuition

Since providing training to these farmers (small-scale) who are among the poorest of the poor might not be attractive to these institutions primarily because they are amongst the resource poor. It is recommended that the government shoulder the responsibility of finding that course by making use of funds from Department of Labour set aside for skill development. The institutions should be cost effective and efficient in terms of providing that training. There should also be transparent in terms of their accounting systems.

6.2.7 Private training providers

It is essential to establish as to whether all the training providers registered with the Department of Labour are credible and could be trusted with a responsibility of training small-scale farmers to commercial level. A task team is needed to take audit their qualifications and facilities and also course that their course are accredited in terms of SAQA.

6.2.8 Learners and educators

Majority of learners who responded (53.3%) indicated that they are not doing practical at their school. They also mentioned that the resources and facilities for conducting practical. On the basis of these and the fact that majority of their teachers (80%) do not have agricultural qualifications, two things are recommended:

1. That only certain schools, preferably agricultural schools offer agricultural science as a subject; or
2. Ordinary or academic schools that offer agricultural science as a subject be capacitated in terms of resources and facilities and educators are re-trained in agricultural fields.

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ANNEXURE A

PARTICIPATORY RURAL APPRAISAL (PRA)

The questions were asked based on the following:

Lists of Enterprises they have

Knowledge they have

Problems Encountered

Survival Strategies

Service Providers

Preferred methods of training

ANNEXURE B

QUESTIONNAIRE ON AGRICULTURAL EDUCATION AND TRAINING AT HIGH SCHOOLS IN THE FREE STATE PROVINCE

This questionnaire is to be completed by teachers offering Agricultural Science in High Schools

The respondents are kindly requested to complete this questionnaire. The information gathered will be used in formulating a National Strategy for Agricultural Education and Training in South Africa.

1. Your institution

1. Name of the institution: _____

1.2 Province: _____

1.3 District: _____

2. Background

2.1 State your gender (circle) M / F

2.2 Your population group: _____

2.3 Your age (circle) <22 / 22-27 / 28-35 / 36-40 / 41-45 / 46-60 / 51-55 / 56+

2.4 State the minimum qualification required for the post you are in:

2.5 State your highest qualification: _____

2.6 Do you have professional (teaching qualification)? Yes / No. If yes, what?

2.7 Work experience:

Lecturing expreience	Experience in this institution	Other experience in the agriculture sector	Other work experience

2.8 What is your employment status in this job? (Tick as appropriate)

Part-time	
Full-time, permanent	
Contract work (e.g. 3 year contract)	
Other (please specify)	

2.10 Are you currently engaged in any further studies? (Circle)

Yes / No

2.11 If yes, what studies are you pursuing? _____

2.12 If appropriate, what motivates you to further your studies?

3. Your teaching responsibilities

3.1 Please complete the following table:

No.	Subject (e.g. Crop Protection)	No. of Learners	No. hours per week Teaching lessons/ Practicals	
1				
2				
3				
4				
5				
6				

3.2 How do you perceive the intensity of your work load? (Very light = 1, Light = 2, Moderate = 3, Heavy = 4) (Circle one number for each aspect)

Aspect of work	Rating			
Teaching lessons	1	2	3	4
Conducting practicals	1	2	3	4
Preparation of classes	1	2	3	4
Administration	1	2	3	4

3.3 How frequently do you revise your training programmes? (Tick)

Annually/Once in two years/On receipt of new information or discoveries/
Other (Specify) _____

3.4 With which of the following do you have professional linkages? (Circle)

Teachers in your institution

Lecturers in other institutions

Research stations business

Agro-industries

Agri-business

Extension services
(State) _____

Farmers

Other

3.5 Yourself

Technician

Yourself and technician

Other (Specify) _____

3.6 Evaluate the following training facilities under the headings given (1 = poor, 2 = unsatisfactory, 3 = satisfactory, 4 = good)

Facility	Adequacy	Condition	Relevance
Laboratories			
Library			
Internet access			
Practical livestock facilities			
Practical crop facilities			
Other (state)			

3.7 List and evaluate the training materials you use (1 = poor, 2 = unsatisfactory, 3 = satisfactory, 4 = good)

Training material and equipment	Adequacy
Books	
Audio-visual	
Laboratory materials	
Laboratory equipment	
Practical equipment	
Practical materials	
Other (State)	

3.8 Who evaluated the standard and quality of your teaching (lectures and practicals)? (Circle)

Colleagues

Students

Outside lecturers/Teachers

Other (Specify) _____

3.9 In what extra-curricular activities do your learners engage? (List)

Activity

3.10 Are there any physically disabled learners in your class? (Tick where applicable) Yes / No

3.11 If yes, are any special provisions made for them? (Tick where applicable) Yes / No

3.12 If not, why not? _____

3.13 What is the pass rate of your learners in the subjects you offer?

Subject	Pass rate (%)

3.14 What is the level of activity of learners during practical sessions? (Circle)

Active and enthusiastic

Active because of compulsion

Passive

Very passive

4. **Your thoughts about agricultural education and training (AET) in South Africa.**

4.1 What do you think are the main challenges to AET?

1. _____

2. _____

3. _____

4.2 What is your vision for the future of Agricultural high schools?

4.3 What are your suggestions regarding the improvement of AET in South Africa?

Thank you very much for your time and input.

ANNEXURE C

Questionnaires for learners in Agricultural Schools in the Free State Province

This questionnaire is to be completed by learners in Agricultural schools and in schools which offer Agricultural science as a subject

The respondents are kindly requested to complete this questionnaire. The information gathered will be used in formulating a National Strategy for Agricultural Education and Training in South Africa.

1. **Your school**

1.1 Name of your school: _____

1.2 District: _____

2. **Gender (Mark with an X where appropriate)**

Male / Female

3. **Background**

3.1 Where do you live? (Mark with an X where applicable)

Farm

Village

City

Township

Other (Specify)

3.2 How old are you? _____

3.3 Why are you interested in Agricultural field?

3.4 How do you see your career path in Agriculture?

3.5 What motivate you to follow an Agricultural field?

3.6 Do you have practical classes? (Tick one)

Yes

No

3.7 If yes, at least per week, how many practicals do you have?

3.8 What is the ratio between practical and theory you receive?
(In percentage)

3.9 Which one between Practical and Theory do you enjoy most?

3.10 Where mostly do you do your practicals? (Tick one)

In class

In the field

In the laboratory

Other (Specify) _____

3.11 Mention at least 3 equipment that you use in the field.

3.12 What changes would you like to see in Agricultural Education and Training in high schools?

Thank you for your contribution.

ANNEXURE D

**QUESTIONNAIRE FOR STAFF IN AGRICULTURE-RELATED EMPLOYMENT
IN THE PRIVATE SECTOR**

RESPONDENTS: COMPANY AGRICULTURAL TECHNICAL STAFF

This questionnaire is part of a broader survey, which aims to elicit contributions from organizations in the private sector, towards the formulation of a national strategy for agricultural education and training.

QUESTIONS

1. What is the highest agricultural qualification you have?

2. Please name the institution where you obtained the above qualification.

3. Gender (Tick the appropriate box)

Male	<input type="checkbox"/>
Female	<input type="checkbox"/>

4. Race White Black Coloured | Indian Other |

5. Age Under 20 21-30 31-40 41-50 41-50 51-60

60+

6. Please list the main tasks and responsibilities of your rank/position.

7. List the type of skills that are required for your job.

8. List the major subjects covered in your training.

9. Please rate the quality of your training and the facilities where you obtained your qualification. Tick the appropriate box.

1 = Least helpful
 10 = Most helpful
 N/A = Not applicable

Scientific Theory	1	2	3	4	5	6	7	8	9	10	N/A
Practical classes	1	2	3	4	5	6	7	8	9	10	N/A
Course material	1	2	3	4	5	6	7	8	9	10	N/A
Lecturer/Trainer	1	2	3	4	5	6	7	8	9	10	N/A
Laboratory	1	2	3	4	5	6	7	8	9	10	N/A
Teaching farm	1	2	3	4	5	6	7	8	9	10	N/A
Library	1	2	3	4	5	6	7	8	9	10	N/A

10. Please rate the appropriateness of your training in preparing you for your current employment. Tick the appropriate box.

1 = Least appropriate
 10 = Very appropriate
 N/A = Not applicable

Scientific theory	1	2	3	4	5	6	7	8	9	10	N/A
Practical classes	1	2	3	4	5	6	7	8	9	10	N/A

11. Please list the aspects of your training which were helpful for preparing you for the present job?

12. In which area of your job, if any, do you require further agricultural training?

13. Where would you prefer to obtain such training, and why?

14. Please tick the box that best describes your level of satisfaction with your job.

1 = Least satisfied
10 = Most satisfied

1	2	3	4	5	6	7	8	9	10
---	---	---	---	---	---	---	---	---	----

15. What do you think are the main challenges to Agricultural Education and Training?

16. What are your suggestions regarding the improvement of AET in South Africa?

Thank you for time and inputs.

ANNEXURE E

QUESTIONNAIRE FOR AGRICULTURAL CO-OPERATIVES IN THE FREE STATE

This questionnaire is to be completed by members of Agricultural Co-operatives

The respondents are kindly requested to complete this questionnaire. The information gathered will be used in formulating a National Strategy for Agricultural Education and Training in South Africa

1. Personal profile of the respondents

1.1 Are you a staff or a registered member of this co-op? (Tick one)

Staff member

2. Registered member

3. Both

4. Other – specify

1.2 Your gender (Tick one)

1. Male

2. Female

1.3 State the highest educational qualification you have achieved.

1. Post graduate (Specify)

2. BSc Agric

3. B. Agric

4. B. Tech

5. Diploma

6. Higher Certificate

7. Certificate

8. Matric

9. Other

10. Other – Specify

1.4 Institution where the qualification was obtained

1. High School

2. Technical College

3. Agric College

4. Technikon

5. University

6. Other - Specify

2. **Services rendered by the co-op.**

2.1 What type of services does this co-op render?

- 1. Render advice to farmers (on request)
- 2. Provide inputs
- 3. Training to farmers
- 4. Help in marketing of agric produce
- 5. Serve as credit facility to members
- 6. Other – Specify

2.2 In your own view, what attract people to join this co-op?

2.3 In your view, what discourages people to join this co-op?

2.4 Does this loop have linkages with their institutions? (Tick one)

- 1. Yes
- 2. No

2.5 If yes, list the institutions that are linked to this co-op institution.

2.6 Who are the clients of this co-op. (Follow 2.2)

- 1. Registered members
- 2. Any farmer individuals
- 3. Staff member of the co-op.
- 4. Members of public
- 5. Other - Specify

2.7 Do you have any idea how many members does this co-op have (More at the beginning) (Tick one)

- 1. >200
- 2. 200 – 500
- 3. 500 - 1000
- 4. <1000

3. **Technical staff members of the co-op.**

3.1 What are your daily activities in this co-op?

- 1.
- 2.
- 3.

3.2 Do you think your daily activities are related to your field of study?
(Tick one)

1. Yes
2. No

3.3 If no, in which area will you like training to be offered?

- 1.
- 2.
- 3.
- 4.
- 5.

3.4 Does the co-op organize inservice training for the staff members? (Tick one)

- 1.
- 2.

3.5 If yes, can you list all courses attended, duration and providers for the last 2 years?

	Courses attended	Duration	Providers
1.			
2.			
3.			
4.			
5.			

3.6 What type of problems does this co-op has and how do you try to solve them?

	Problems	Solutions
1.		
2.		
3.		
4.		

3.7 If you can be given a chance to study again, what kind of AET qualification would you like to get?

3.8 How would you like this co-op to be changed?

4. Members of the co-op

4.1 What type of farming activities are you doing?

1. Crop Production
2. Animal Production
3. Agric Engineering
4. Agric Product Processing
5. Mixed farming
6. Other – Specify

4.2 What kind of services are you getting from the co-op?

1. Inputs
2. Training
3. Marketing
4. Credit
5. Advice on request
6. Other – Specify

4.4 If you receive training from the co-op, list the name of courses attended, duration of providers for the past 2 years.

Courses attended	Duration	Providers
1.		
2.		
3.		

4.5 Are you satisfied with the services rendered by the co-op? (Tick one)

1. Yes
2. No

4.6 How would you like the co-op to be improved?

4.7 If you can be given opportunity to recruit new staff for this co-op, what kind of qualified candidates will you go for?

4.8 What future plans do you have? For example, venturing into processing or new enterprises. If yes, what skills will be required?

4.9 What agricultural educational needs (knowledge and skills) would your future plans imply?

4.10 What kind of changes would you like to see in the present agric. educ. and training system in the country?

Thank you for contribution.

ANNEXURE F

QUESTIONNAIRE ON AGRICULTURAL EDUCATION AND TRAINING AT INSTITUTIONS OF HIGHER LEARNING IN THE FREE STATE PROVINCE

This questionnaire is to be completed by staff providing tuition to students of the Agriculture Faculty and Agricultural Colleges

The respondents are kindly requested to complete this questionnaire. The information gathered will be used in formulating a National Strategy for Agricultural Education and Training in South Africa.

1. Your institution

1.1 Name of the institution: _____

1.2 Province: _____

1.3 District: _____

2. Background of the lecturer/teacher

2.1 State your gender (circle) M / F

2.2 Your population group: _____

2.3 Your age (circle) <22 / 22-27 / 28-35 / 36-40 / 41-45 / 46-50 / 51-55 / 56+

2.4 State the minimum qualification required for the post you are in:

2.5 State your highest qualification: _____

2.6 Do you have professional (teaching qualifications) Yes / No
If yes, what? _____

2.7 Work experience:

Lecturing experience	Experience in this institution	Other expe- rience in the agriculture sector	Other work experience

2. 8 What is your employment status in this job? (Tick as appropriate).

Part-time	
Full-time, permanent	
Contract work (e.g. 3 year contract)	
Other (please specify)	

2. 9 State the Faculty _____ and Department in which you are employed:

2.19 Are you currently engaged in any further studies? (Circle)
Yes / No

2.11 If yes, what studies are you pursuing?

2.12 If appropriate, what motivates you to further your studies?

3. Your teaching responsibilities

3.1 Please complete the following table:

No.	Course taught (e.g. BSc Ag)	Subject (e.g. Crop Protection)	No. of students	No. hours per week	
				Lectures	Practicals
1					
2					
3					
4					
5					
6					

3.2 How do you perceive intensity of your work load? (Very light = 1, Light = 2, Moderate = 3, Heavy = 4) (circle one number for each aspect)

Aspect of work	Rating			
	1	2	3	4
Lecturing				
Conducting practicals				
Preparation of classes				
Research activities				
Administration				

3.3 How frequently do you revise your training programmes? (Tick)

Annually / Once in two years / On receipt of new information or discoveries /

Other (Specify) _____

3.4 With which of the following do you have professional linkages? (Circle)

Lecturers in your institution

Lecturers in other institutions

Research stations business

Agro-industries

Agri-business

Extension services

Farmers

Other

(State) _____

3.5 Who conducts practical classes in your subjects? (Circle)

Yourself

Technician

Yourself and technician

Other (Specify) _____

3.6 Evaluate the following training facilities under the headings given (1 = poor, 2 = unsatisfactory, 3 = satisfactory, 4 = good):

Facility	Adequacy	Condition	Relevance
Laboratories			
Library			
Internet access			
Practical livestock facilities			
Practical crop facilities			
Other (State)			

3.7 List and evaluate the training materials you use (1 = poor, 2 = unsatisfactory, 3 = satisfactory, 4 = good)

Training material and equipment	Adequacy
Books	
Audio-visual	
Laboratory materials	
Laboratory equipment	
Practical equipment	
Practical materials	
Other (State)	

3.8 Who evaluated the standard and quality of your teaching (lectures and practical?) (Circle)

Colleagues Students Outside lecturers
 Other (Specify) _____

3.9 In what extra-curricular activities do your students engage? (List)

Activity

3.10 Are there any physically challenged students enrolled in your courses?
 Yes / No.

3.11 If yes, are any special provisions made for them in lecture classes?
 Yes / No

3.12 Practical classes? Yes / No.
 If not, why not?

3.13 What is the pass rate of your students in the subjects you offer?

Subject	Pass rate (%)

3.14 What is the level of activity of students during practical sessions? (Circle)

Active and enthusiastic Active because of compulsion
 Passive Very passive

4. **Research activities**

4.1 Are you currently engaged in agricultural research? (Circle)
 Yes / No

4.2 Is your research related to your teaching work? (Circle)
Yes / No

4.3 Who are the beneficiaries of your research? (Tick)

Students Farmers Breeders Nutritionists
Commercial Company
Other (Specify) _____

4.4 Who funds your research?

4.5 If you are not engaged in research, is there a reason for this?

5. Your thoughts about agricultural education and training (AET) in South Africa.

5.1 What do you think are the main challenges to AET?
1. _____

2. _____

3. _____

5.2 What is your vision for the future of your institution?

5.3 In not more than 100 words, kindly discuss how you would, given chance, improve the quality of agricultural education and training in South Africa, such that it competes well in the global world.

Thank you for your contribution.

ANNEXURE H

QUESTIONNAIRE ON AGRICULTURAL EDUCATION AND TRAINING FOR COMMERCIAL FARMERS IN THE FREE STATE

The questionnaire is to be completed by commercial farmers.

The respondents are kindly requested to complete this questionnaire. The information gathered will be used in formulating a National Strategy for Agricultural Education and Training in South Africa.

1. **Biographic information:**

1.1 District: _____

1.2 Gender (Please Tick)
Male / Female

1.3 Age (Please tick)

Less than 20
20 – 30 years
31 – 40 years
41 – 50 years
51+

1.4 Educational background (Please tick)

Standard 8
Matric
Diploma
Degree
Postgraduate

2. **Farming experience**

2.1 When did you start farming? _____

2.2 Did you undergo any training prior farming?
(Mark with an X where applicable)
Yes / No

2.3 List training courses that you have attended so far, their duration and institution(s) that provided them.

Course	Duration	Provider/ Institution

2.3 Of the above-mentioned courses in 1, 2, 3, which one(s) do you regard as the most important?

3. Training institutions

3.1 Do you receive any services from the Provincial Department of Agriculture? (Mark with an X where appropriate)
Yes / No

3.2 If yes, what are those services? List them.

3.3 Do you receive any service from research institution(s)? (Mark with an X where appropriate) Yes / No

3.4 If yes, give the names of those research institution(s).

3.5 If your answer is yes in 3.3 above, what services do you receive from those research institutions?

3.6 Where else do you receive training? (Tick where applicable)

- College
- University
- Technikon
- Others (Specify)

3.7 If you were to employ a student from one of the above institutions, would you employ him/her from?

3.8 Why did you choose that particular institution?

4. **Training needs analysis**

4.1 What are your training needs?

4.2 From which institution(s) would you like to receive training?

4.3 What do you think are the main challenge to Agricultural Education and Training in South Africa?

4.4 What are your suggestions regarding the improvement of AET in South Africa?

Thank you for your contribution.