

## Training Challenges Faced by Smallholder Farmers: A Case of Mopani District, Limpopo Province in South Africa

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**ABSTRACT** Training plays a strategic role in improving the competitiveness and the productivity of the agricultural sector. This paper identified training challenges faced by smallholder farmers in the Mopani District, Limpopo province, South Africa. This entailed taking a representative sample consisting of 56 agricultural projects, with 1938 beneficiaries participating in the research. The following 5 local municipalities were visited: Greater Tzaneen, Greater Giyani, Maruleng, Greater Letaba and Ba Phalaborwa. Quantitative and qualitative design was used as a detailed questionnaire written in English, with a stakeholder's discussion, and field observations as part of the data collection. A purposive sampling technique was used to select fifty-six (56) projects, in order to cover uniformity and homogenous characteristics such as infrastructure requirements, skills availability, production challenges, agricultural training needs, water source needs, educational level and others. Data was coded, captured and analyzed with a software packaged for social sciences (SPSS version 20). Descriptive analysis was conducted and results identified the following training challenges: Soil Preparation, Seed Sowing, Pests and Diseases, Marketing, Harvesting, Transplanting and Post-Harvest Storage. It is recommended that transfer of agricultural knowledge to support smallholder farmers should be priority for the government especially the seven training challenges identified by smallholder farmers.

### INTRODUCTION

Farmer training workshops are often used to educate farmers on technical skills that can improve the quality of produce from smallholder farmers. This includes functional and practical techniques for educating the older farmers on advanced methods of production. According to the World Bank (2007), over seventy-five percent of farms in most African and Asian countries are smallholding. It was further emphasised by Wiggins (2008) that 1.3 billion people worldwide are employed by smallholding farms. Several recent reports on poverty and food security have highlighted the importance of raising smallholders' productivity and ensuring that development assistance reaches them. According to the Food and Agriculture Organisation (FAO) (2012) smallholders not only require the technical skills to improve their productivity, but they also need to be equipped with the skills to negotiate rapidly changing agricultural markets, and adapt their productive activities in response to the new niches that it creates.

According to Maponya et al. (2015) training and education plays an important role in smallholder farmer development. Research showed

that smallholder farmers can benefit from training in agricultural techniques, business management and marketing skills (World Bank 2013; Danida 2004). Failure to address some of these training needs has led to constrained agricultural growth in some districts in South Africa (Maponya et al. 2014; Maponya et al. 2015). It must also be noted and acknowledged that only training that accurately addresses the current needs of smallholder farmers and takes into account their different production activities and challenges offers serious prospects for raising productivity, knowledge, skills and improving their livelihoods. According to Maponya et al. (2014) designing this kind of trainings is a complex challenge, and it requires detailed local knowledge and a proper understanding of the challenges faced by smallholder farmers. This will go a long way in designing programmes that effectively target smallholder's farmers training needs.

Mopani district contributed significantly towards the activity of agriculture on the provincial level (MDM 2014). About fifty percent of the farm income in Limpopo province in horticulture is earned in this district. The most important crops in terms of monetary value are citrus,

vegetables and subtropical fruits. About six, seven percent of the land can be considered arable of which forty-three is under irrigation in the Mopani District (MDM 2014). The Agricultural Research Council (ARC) is currently involved in an agricultural project in the Mopani district in Limpopo province, where smallholder farmers were identified, assessed and trained in vegetable production. Research was conducted with the overall aim of training smallholder farmers in agricultural production and business management skills. The objectives were: (1) to describe the characteristics of selected agricultural projects in the Mopani district, (2) to identify and determine training needs faced by smallholder farmers in Mopani district.

### Theoretical Background

According to Hume (1991) smallholder farmers training interventions vary considerably. Some interventions focus directly on 'train and visit' approaches. It was further emphasised by Anderson (2007) that such training interventions are also packaged as 'extension services', a broad term for programmes which aim to "support and facilitate people engaged in agricultural production to solve problems and to obtain information, skills and technologies". According to Waddington et al. (2010) extension services have over the time become more participatory in nature and draw on problems and priorities identified by farmers themselves rather than those imposed on them.

South Africa's agricultural education sector is failing to produce a new crop of farmers and agriculturalists, with fewer youngsters being drawn to study agriculture as a career. In addition, a lack of training among unskilled and semi-skilled farmers is preventing the sector from growing smallholder farmers to become semi/commercial farmers. According to Louw et al. (2004) there are few institutions prepared to provide skills development to smallholder farmers, however due to the lack of funds on the part of small scale farmers and without requisite skills it is difficult to apply good agricultural practices and business management approaches (Louw et al. 2004).

Higher economic growth will not be possible without addressing, among others, illiteracy and low education and skills development levels which are most prevalent in rural South Afri-

ca, and where agriculture is most likely to play an important role in resolving both economic and human development (OECD 2006; Maponya et al. 2014; Maponya et al. 2015). According to Feder et al. (2004) smallholder farmer training can contribute to the productivity, technology and management gap. This will go a long way in increasing the speed of technology transfer, increasing farmer's knowledge and improving farm management practices. Good agricultural training will definitely ensure that farmers were savvy enough to avoid risks.

### METHODOLOGY

The research used quantitative and qualitative methods as a detailed questionnaire written in English was developed for the data collection. The questionnaire used both open and closed ended questions. Data collection included stakeholder discussions and field observations. As part of standard protocol for conducting the study, meetings were held with all stakeholders in the Mopani district namely: (1) Local municipalities, (2) Department of Agriculture, Forestry and Fisheries (DAFF), (3) Department of Rural Development and Land Reform (DRDLR), (4) Local economic agencies and (5) Local farmers. The aim of the meetings were to introduce and explain the intended project.

A purposive sampling technique was used to select 56 agricultural projects. The sampling was used to assess uniformity and homogenous characteristics like infrastructure needs, skills availability, production challenges, agricultural training needs, and water source needs, educational level, land acquisition, size of land, farming experience, source of water, inputs and implements used. Agricultural projects visited in the Mopani district were prioritized based on the agriculture potential of the area namely project type, numbers of projects around an area, size of the land, chances of extending production, water availability, commitment of members to their projects, internal conflicts, working material and infrastructure. As shown in Figure 1, Mopani district had 5 local municipalities and Table 1 explained variables used.

### RESULTS

A total of 56 projects in 5 local municipalities were visited. As shown in Table 2, the composi-

**Table 1: Definition of variables**

<i>Variables</i>	<i>Description of variables</i>	<i>Unit</i>
PAR	1 if a farmer participate in the market, 0 otherwise	Dummy
AGE	Age of the farmer	Years
GEN	1 if male, 0 otherwise	Dummy
EDU	The highest educational level that a farmer possess	Number
WAT	1 if irrigation, 0 otherwise	Dummy
IMP	1 if tractor, 0 otherwise	Dummy
FSI	The size of the farm which is under crop production	Ha
EXP	Farming experience of the respondent(s)	Years
SOI	1 if soil is tested, 0 otherwise	Dummy

**Table 2: Mopani District projects per local municipality**

<i>Local municipalities</i>	<i>Agricultural projects</i>	<i>% of local municipality</i>
Ba Phalaborwa	6	11
Greater Letaba	8	14
Maruleng	17	30
Greater Tzaneen	13	23
Greater Giyani	12	22
Total	56	100

tion of projects were: Ba Phalaborwa (11%), Greater Letaba (14%), Maruleng (30%), Greater Tzaneen (23%) and Greater Giyani (22%). These agricultural projects were prioritized based on their agricultural potential, for instance number of projects around the area, size of the land, chances of expanding production, water availability, commitment of members to their projects, internal dividing issues, working equipment and infrastructure. Mopani District has a total of 1938 beneficiaries and they are spread across local municipalities as shown in Table 3 that is, Ba Phalaborwa (114), Greater Letaba (29), Maruleng (875), Greater Tzaneen (753) and Greater Giyani (167).

The age distribution of project respondents indicated that the majority were in age group 46 – 60 and >60 while age category 18 – 35 was at

**Table 3: Mopani District beneficiaries per local municipality**

<i>Local municipalities</i>	<i>Beneficiaries</i>	<i>% of beneficiaries</i>
Ba Phalaborwa	114	5.9
Greater Letaba	29	1.5
Maruleng	875	45
Greater Tzaneen	753	39
Greater Giyani	167	8.6
Total	1938	100

twenty-one percent. It is further emphasised that young people should be part of agriculture and learn from older generation. This will make sure that youth is bettered first with skill and knowledge. In Mopani District, fourteen percent had incomplete primary education, six percent had completed primary education, nine percent had incomplete secondary education, fifty-seven percent of project respondents had completed secondary education and fourteen percent had tertiary education completed. It must also be emphasised that the majority of farmers that completed secondary and tertiary education falls under 46 - 60 and >61 age groups. Most of these farmers were retired public servants and decided to venture into agriculture. There were a number of youth who completed their agricultural education in various universities in South Africa hence they became attracted to agriculture. Some farmers who were born and raised on farms did not have opportunity to attend any schooling or completed formal education. The results in Table 4 indicated gender composition as females at twenty-seven percent and males at seventy-three percent. This is a very interesting situation as compared to other districts in South Africa where most men migrate to other provinces to seek for job opportunities. It was also highlighted by Maponya and Mpandeli (2015) that the majority of men in the Vhembe District migrate to other provinces, like Gauteng, and North West, for better employment opportunities, whereas majority of the women remained the heads of the households. In Mopani district, most farmers were males as compared to females. This situation indicated availability of job opportunities for their male partners. This is true as most smallholder farmers interviewed were retired public servants such as nurses, teachers and police officers. The majority of farmers (98%) were farming full time (Table 4) and in line with

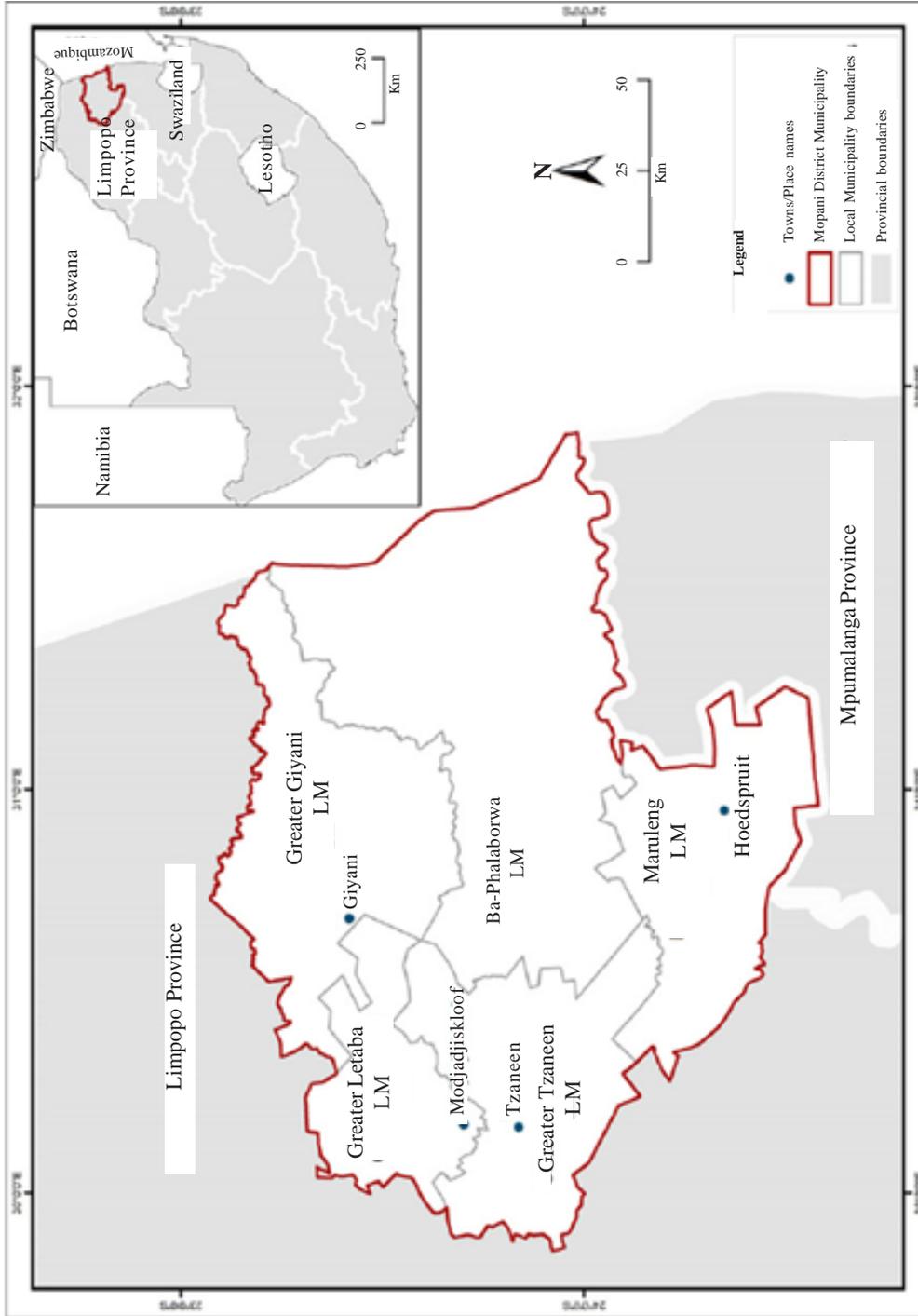


Fig 1. Mopani District Map

project sampling criteria, which targeted fulltime farmers.

**Table 4: Socio-economic characteristics of small-holder farmers**

	<i>Respondents</i>	<i>% of socio economic characteristics</i>
<i>Age (Years)</i>		
18 – 35	12	21
36 – 45	7	13
46 – 60	20	36
>61	17	30
Total	56	100
<i>Gender</i>		
Male	41	73
Female	15	27
Total	56	100
<i>Educational Level</i>		
Primary education incomplete	8	14
Primary education completed	3	6
Secondary education incomplete	5	9
Secondary education completed	32	57
Tertiary education completed	8	14
Total	56	100
<i>Employment Status</i>		
Fulltime farmer	55	98
Farming fulltime, housewife	1	2
Total	56	100

As observed in Table 5, about thirty-four percent of respondents had 1-5 years in farming, thirty-nine percent had 6-10 years, sixteen percent had 11-20 years, nine percent had 21-49 years and two percent had > 50 years. These results justified sampling criteria which targeted farmers with variation of farming experience. This situation is not surprising as majority of small-holder farmers (46 – 60 and > 61 age groups)

**Table 5: Mopani District respondents farming experience**

<i>Years</i>	<i>Respondents</i>	<i>% of farming experience</i>
1-5	19	34
6-10	22	39
11-20	9	16
21-49	5	9
50 >	1	2
Total	56	100

have just retired as public servants and their farming experience is between 1 – 10 years. The same trend is observed among youth (18 – 35 age category) who just completed their education and it is expected that their farming experience will be between 1 – 10 years.

Results on land acquisition (Table 6) indicated that the majority of projects were using permission to occupy (PTO) as a means of land acquisition (68%). PTO is a type of land acquisition where farmers are given occupation rights over a certain piece of land by village chiefs/municipalities/government department. About sixteen percent of farmers received land through Land Redistribution for agricultural development (LRAD). LRAD was designed by government to assist previously disadvantaged citizens in South Africa to access land specifically for agricultural purposes. As indicated in Table 6 only nine percent and seven percent of the farmers acquired land through own finance and leases respectively.

**Table 6: Mopani District land acquisition per project**

<i>Land acquisition</i>	<i>Projects</i>	<i>% of land acquisition</i>
Own finance	5	9
LRAD	9	16
PTO	38	68
Lease	4	7
Total	56	100

Mopani district projects used different water sources for irrigation, with boreholes being the most utilized (51%), followed by river (23%), dam (13%), while combination of water sources were also used as seen in Table 7. It must be noted and emphasised that majority of the small-

**Table 7: Mopani District water source per project**

<i>Water source</i>	<i>Projects</i>	<i>% of water source</i>
Dam	7	13
River	13	23
Borehole	29	51
Borehole, river	2	4
Dam, borehole	3	5
Dam, river, borehole	2	4
Total	56	100

holder farmers (51%) are irrigating directly from the borehole.

From Table 8 it has been evaluated that most projects were cultivating vegetables, grain, citrus and deciduous (52%), grain and vegetables (18%), citrus (2%), vegetables (26%), vegetable, deciduous (2%).

**Table 8: Mopani District crops planted per project**

<i>Crops</i>	<i>Projects</i>	<i>% of crops planted</i>
Vegetables	15	26
Grain, vegetables	10	18
Grain, vegetables, citrus, deciduous	29	52
Vegetables, deciduous	1	2
Citrus	1	2
<b>Total</b>	<b>56</b>	<b>100</b>

Fifty-nine percent of projects used a combination of kraal manure, fertilizer, pesticides and seedlings (Table 9). About twenty-two percent of projects used seedlings, fertiliser and pesticides while only two percent used kraal manure, fertiliser and pesticides. The following inputs were distributed to projects beneficiaries: (1) Sweet potato cuttings (123 000 cuttings), (2) Tropical and Sub tropical fruit trees (1310). All the inputs were distributed by Agricultural Research Council.

**Table 9: Mopani District farming practices**

<i>Inputs</i>	<i>Projects</i>	<i>% of farming practices</i>
Kraal manure, fertiliser, pesticides	1	2
Kraal manure, fertiliser, pesticides, Seedlings	33	59
Seedlings, fertiliser, pesticides	22	39
<b>Total</b>	<b>56</b>	<b>100</b>

Table 10 indicated that most projects were engaged in informal markets (64%) with two percent trading in both formal and informal markets while a large number of projects were engaged in formal market (34%) as compared to other districts (Maponya et al. 2014). This situation can also be attributed to smallholder farmer’s size of land. Majority of farmers had 1 – 10 ha of land, which is not adequately used due to challenges in access to formal markets. This indicated that

the benefits of economic of scale is not yet realised by some smallholder farmers in Mopani District. As part of linking farmers to markets, Mopani district projects have been presented to Fruit and Vegetable City and Woolworths SA.

**Table 10: Mopani District markets access per project**

<i>Markets access</i>	<i>Projects</i>	<i>% of market access</i>
Formal market	19	34
Informal market	36	64
Formal and informal markets	1	2
<b>Total</b>	<b>56</b>	<b>100</b>

Results in Table 11 indicated that forty-five percent of projects used only hand tools without complementing with other implements. About fifty-five percent of projects used tractor, plough, hand tools and spraying machines. Farmers in the districts acknowledged the presence of government mechanisation programmes but emphasised the accessibility of those programmes as a challenge. The results clarified the inferences why smallholder farmers use small land.

**Table 11: Mopani District implements used per project**

<i>Implements used</i>	<i>Projects</i>	<i>% of implements used</i>
Tractor, plough, handtools, spray machine	31	32
Handtools	25	45
<b>Total</b>	<b>56</b>	<b>100</b>

Table 12 indicated that approximately ninety-eight percent of projects were receiving extension services, while two percent were not. Of the group receiving extension services, about sixty-one percent received a formal extension service, while other projects were receiving different types of extension services as indicated in Table 12. Smallholder farmers agreed that they were receiving some form of trainings but those trainings did not address their current needs. Hence it is very important to first assess farmers current training needs/ challenges before actual training.

**Table 12: Mopani District access to extension services per project**

<i>Extension services</i>	<i>Projects</i>	<i>% of extension services</i>
<i>Access to Extension Service</i>		
Yes	55	98
No	1	2
<i>Form of Extension Service</i>		
Formal extension	34	61
Formal extension, farmer to farmer	11	20
Formal extension, family support	4	7
Formal extension, farmer to farmer, Neighbours and family support	3	5
Formal extension, farmer to farmer, neighbours and municipal office	2	1
Formal extension, farmer to farmer, and family support	3	5
Total	56	100

Most of the respondents, farm on land which is 6 – 10 hectare in size (45%), while only seven percent, thirteen percent and fourteen percent of projects were 11 - 20, 21 - 49 and 50 > hectares in size respectively (Table 13). A number of projects had land of 1 – 5 hectares (21%). The crops produced on these farms were not enough to access formal markets. Smallholder farmers in Mopani District were unable to utilize all land available to them because of lack of implements, inputs, skill and sufficient irrigation water.

**Table 13: Mopani District projects land size**

<i>Years</i>	<i>Projects</i>	<i>% of land size</i>
1-5	12	21
6-10	25	45
11-20	4	7
21-49	7	13
50 >	8	14
Total	56	100

Seventy-three percent of project respondents had received some level of agricultural training, while only twenty-seven percent have no agricultural training (Table 14). In Mopani district 101 beneficiaries out of expected 120 were trained. The attendance stood at eighty-four percent.

Accredited training was also offered to Mopani district beneficiaries (109 trained out of expected 120 and attendance stood at 91%). Each project was represented by 2 beneficiaries. These projects beneficiaries were assessed based on their current training needs/challenges and trained by the Agricultural Research Council.

**Table 14: Mopani district agricultural training**

<i>Training</i>	<i>Respondents</i>	<i>% of agricultural training</i>
Yes	41	73
No	15	27
Total	56	100

The results showed that 8.9 percent of projects recognised soil preparation as 1<sup>st</sup> training challenge and 28.6 percent of projects recognised soil preparation as 2<sup>nd</sup> training challenge. As observed in Table 15 that 12.5 percent, 17.9 percent and 14.3 percent of projects accepted soil preparation as 3<sup>rd</sup>, 4<sup>th</sup> and 5<sup>th</sup> training challenge respectively. Only 8.9 percent and 8.9 percent of projects recognised soil preparation as 6<sup>th</sup> and 7<sup>th</sup> training challenge. It is very clear that attention should be given to soil preparation as indicated by 1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup> training challenges. According to FAO (2012) proper training in soil preparation is recommended to farmers as it improves water conservation by increasing plant rooting depth, soil water holding capacity and reducing water run-off and evaporation.

**Table 15: Soil preparation as a training challenge**

<i>Training challenge</i>	<i>Projects</i>	<i>% of soil preparation</i>
1 <sup>st</sup> training challenge	5	8.9
2 <sup>nd</sup> training challenge	16	28.6
3 <sup>rd</sup> training challenge	7	12.5
4 <sup>th</sup> training challenge	10	17.9
5 <sup>th</sup> training challenge	8	14.3
6 <sup>th</sup> training challenge	5	8.9
7 <sup>th</sup> training challenge	5	8.9
Total	56	100

The results showed that 5.4 percent of projects recognised seed sowing as 1<sup>st</sup> training challenge and 12.5 percent of projects recognised seed sowing as 3<sup>rd</sup> training challenge. From Table 16 it was observed that 16.1 percent, 28.6

percent and 28.6 percent of projects accepted seed sowing as 4<sup>th</sup>, 5<sup>th</sup> and 6<sup>th</sup> training challenge respectively. Only 8.9 percent of projects recognised seed sowing as 7<sup>th</sup> training challenge. As indicated in Table 16, projects seemed to be comfortable in terms of seed sowing. Almost sixty-six percent of projects emphasised seed sowing as the least of their training challenges as seen in 5<sup>th</sup>, 6<sup>th</sup> and 7<sup>th</sup> training challenges.

**Table 16: Seed sowing as a training challenge**

<i>Training challenge</i>	<i>Projects</i>	<i>% of seed sowing</i>
1 <sup>st</sup> training challenge	3	5.4
3 <sup>rd</sup> training challenge	7	12.5
4 <sup>th</sup> training challenge	9	16.1
5 <sup>th</sup> training challenge	16	28.6
6 <sup>th</sup> training challenge	16	28.6
7 <sup>th</sup> training challenge	5	8.9
Total	56	100

The results showed that 3.6 percent of projects recognised transplanting as 1<sup>st</sup> training challenge and 3.6 percent of projects recognised transplanting as 2<sup>nd</sup> training challenge. As indicated in Table 17: 12.5 percent, 16.1 percent and 21.4 percent of projects accepted transplanting as 3<sup>rd</sup>, 4<sup>th</sup> and 5<sup>th</sup> training challenge respectively. Only 23.2 percent and 19.6 percent of projects recognised transplanting as 6<sup>th</sup> and 7<sup>th</sup> training challenge. From Table 17, it was observed that projects seemed to be comfortable in terms of transplanting. Almost eighty percent of projects emphasised transplanting as the least of their training challenges as seen in 4<sup>th</sup>, 5<sup>th</sup>, 6<sup>th</sup> and 7<sup>th</sup> training challenges.

**Table 17: Transplanting as a training challenge**

<i>Training challenge</i>	<i>Projects</i>	<i>% of transplanting</i>
1 <sup>st</sup> training challenge	2	3.6
2 <sup>nd</sup> training challenge	2	3.6
3 <sup>rd</sup> training challenge	7	12.5
4 <sup>th</sup> training challenge	9	16.1
5 <sup>th</sup> training challenge	12	21.4
6 <sup>th</sup> training challenge	13	23.2
7 <sup>th</sup> training challenge	11	19.6
Total	56	100

The results showed that 64.3 percent of projects recognised pests and diseases as 1<sup>st</sup>

training challenge and 19.6 percent of projects recognised pests and diseases as 2<sup>nd</sup> training challenge. From Table 18 it was evaluated that 8.9 percent, 1.8 percent and 3.6 percent of projects accepted pests and diseases as 3<sup>rd</sup>, 4<sup>th</sup> and 5<sup>th</sup> training challenge respectively. Only 8.9 percent of projects recognised pests and diseases as 6<sup>th</sup> training challenge. Almost ninety-three percent of projects emphasised pests and diseases as the most training challenge as seen in 1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup> training challenges. This is a worrying situation and a clear indication that the management of pests, diseases and weeds is still very challenging to many smallholder farmers in Mopani district. According to ARC (2014) many smallholder farmers lack knowledge on the cycles of specific pests, diseases and weeds and find it difficult to distinguish their specific characteristics. As a result, they cannot apply suitable preventive measures nor implement proper control measures. To avoid major crop losses, smallholder farmers must be well trained and monitored to implement affordable and effective measures against pests and diseases.

**Table 18: Pest and diseases as a training challenge**

<i>Training challenge</i>	<i>Projects</i>	<i>% of pest and diseases</i>
1 <sup>st</sup> training challenge	36	64.3
2 <sup>nd</sup> training challenge	11	19.6
3 <sup>rd</sup> training challenge	5	8.9
4 <sup>th</sup> training challenge	1	1.8
5 <sup>th</sup> training challenge	2	3.6
6 <sup>th</sup> training challenge	1	1.8
Total	56	100

The results showed that 1.8 percent of projects recognised harvesting as 1<sup>st</sup> training challenge and 5.4 percent of projects recognised harvesting as 2<sup>nd</sup> training challenge. From Table 19, it was observed that 5.4 percent, 14.3 percent and 14.3 percent of projects accepted harvesting as 3<sup>rd</sup>, 4<sup>th</sup> and 5<sup>th</sup> training challenge respectively. Only 17.9 percent and 41.1 percent of projects recognised harvesting as 6<sup>th</sup> and 7<sup>th</sup> training challenge. As indicated in Table 19, projects seemed to be comfortable in terms of harvesting. Almost eighty-eight percent of projects emphasised harvesting as the least of their training challenges as seen in 4<sup>th</sup>, 5<sup>th</sup>, 6<sup>th</sup> and 7<sup>th</sup> training challenges.

The results showed that 17.9 percent of projects recognised post-harvest handling as

**Table 19: Harvesting as a training challenge**

<i>Training challenge</i>	<i>Projects</i>	<i>% of harvesting</i>
1 <sup>st</sup> training challenge	1	1.8
2 <sup>nd</sup> training challenge	3	5.4
3 <sup>rd</sup> training challenge	3	5.4
4 <sup>th</sup> training challenge	8	14.3
5 <sup>th</sup> training challenge	8	14.3
6 <sup>th</sup> training challenge	10	17.9
7 <sup>th</sup> training challenge	23	41.1
Total	56	100

1<sup>st</sup> training challenge and 17.9 percent of projects recognised post-harvest handling as 2<sup>nd</sup> training challenge. From Table 20 it was observed that 21.4 percent, 8.9 percent and 12.5 percent of projects accepted post-harvest handling as 3<sup>rd</sup>, 4<sup>th</sup> and 5<sup>th</sup> training challenge respectively. Only 8.9 percent and 12.5 percent of projects recognised post-harvest handling as 6<sup>th</sup> and 7<sup>th</sup> training challenge. Almost fifty-seven percent of projects emphasised post-harvest handling as the most training challenge as seen in 1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup> training challenges. This situation is not good as according to FAO (2012), approximately half of the population in the developing world does not have access to adequate food supplies because of food losses occurring in the post-harvest and marketing system. It was also emphasised by Maponya and Mpandeli (2015) that post-harvest handling and storage is one of the key constraints faced by majority of the smallholder farmers across the Limpopo province for several years. It is thus critical that smallholder farmers in Mopani district must be bettered with post-harvest handling skills and knowledge.

**Table 20: Post-harvest handling as a training challenge**

<i>Training challenge</i>	<i>Projects</i>	<i>% of post-harvest handling</i>
1 <sup>st</sup> training challenge	10	17.9
2 <sup>nd</sup> training challenge	10	17.9
3 <sup>rd</sup> training challenge	12	21.4
4 <sup>th</sup> training challenge	5	8.9
5 <sup>th</sup> training challenge	7	12.5
6 <sup>th</sup> training challenge	5	8.9
7 <sup>th</sup> training challenge	7	12.5
Total	56	100

The results showed that 44.6 percent of projects recognised marketing as 1<sup>st</sup> training chal-

lenge and 26.8 percent of projects recognised marketing as 2<sup>nd</sup> training challenge. As indicated in Table 21 that 17.9 percent, 1.8 percent and 1.8 percent of projects accepted marketing as 3<sup>rd</sup>, 4<sup>th</sup> and 5<sup>th</sup> training challenge respectively. Only 1.8 percent and 5.4 percent of projects recognised marketing as 6<sup>th</sup> and 7<sup>th</sup> training challenge. Almost eighty-nine percent of projects emphasised marketing as the most training challenge as seen in 1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup> training challenges. This situation in Mopani district is not encouraging. According to Maponya et al. (2014) understanding and linking smallholder farmers to the markets is vital in increasing agricultural production, generating economic growth and reducing food insecurity and poverty. However, the study by Baloyi (2010) stressed that it is easy to link farmers to markets, but it is difficult for a smallholder farmer to satisfy the market, achieve consistency, and remain sustainable. The Mopani district situation calls for urgent intervention in terms of training and mentoring smallholder farmers. This will go a long way in enabling smallholder farmers to understand the flow of agricultural products, inputs and services from them to consumers. It will also enable consumer and market satisfaction.

**Table 21: Marketing as a training challenge**

<i>Training challenge</i>	<i>Projects</i>	<i>% of marketing</i>
1 <sup>st</sup> training challenge	25	44.6
2 <sup>nd</sup> training challenge	15	26.8
3 <sup>rd</sup> training challenge	10	17.9
4 <sup>th</sup> training challenge	1	1.8
5 <sup>th</sup> training challenge	1	1.8
6 <sup>th</sup> training challenge	1	1.8
7 <sup>th</sup> training challenge	3	5.4
Total	56	100

Lack of knowledge and agricultural inputs are the major casual factors of training challenges. Results showed that fifty percent of projects had no knowledge and inputs to participate sustainable in agricultural production. As shown in Table 22 that twenty-six percent and eight percent of projects agreed that lack of knowledge, inputs and workers is also casual factor to training challenges. As indicated in Table 22, internal group conflicts is not really a causal factor because projects with internal dividing issues were excluded during project assessments.

**Table 22: Casual factors of training challenges**

<i>Casual factors</i>	<i>Project</i>	<i>% of casual factors</i>
Lack of knowledge	6	10.7
Lack of inputs	5	8.9
Lack of knowledge and inputs	28	50
Lack of knowledge, inputs and workers	15	26.8
Lack of inputs and workers	1	1.8
Lack of inputs, workers and internal conflicts	1	1.8
<b>Total</b>	<b>56</b>	<b>100</b>

**CONCLUSION**

The study identified seven training challenges faced by smallholder farmers in Mopani district, namely: Soil preparation, Seed sowing, Harvesting, Transplanting, Pests and Diseases, Post-harvest handling and Marketing. Based on the identified training challenges, it can be concluded that smallholder farmer experienced a lack training in Mopani district. This situation will result in smallholder farmers not able to strengthen their business operations mainly owing to inadequate training support. The results also showed that the majority of smallholder farmers in Mopani district were elders and though they are willing and interested in producing vegetable crops, they lack the necessary knowledge and modern methods to produce. This continuously weakens management, governance and business skills. Smallholder farmers in Mopani district need adequate knowledge about seven identified topics for training.

**RECOMMENDATIONS**

The study recommends that transfer of agricultural knowledge to support smallholder farmers should be priority for the government especially the seven topics identified by smallholder farmers themselves. To accomplish these, smallholder farmers should have access to research and training institutions, for example, the Agricultural Research Council, to improve their skills and knowledge. This in turn will lead to higher yields, increased income, increased knowledge and skill, food security and resilience to a changing climate.

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