

# EXPLORING THE FOOD SECURITY CHALLENGES FACING SMALLHOLDER FARMERS IN GERT SIBANDE DISTRICT, SOUTH AFRICA

Ndlovu SM\*, and Agholor AI

*School of Agricultural Sciences, Faculty of Agriculture and Natural Sciences, University  
of Mpumalanga, South Africa*

**Abstract:** South Africa faces high unemployment, leading to extreme poverty, energy shortages, and rising living costs. The agricultural sector in the country is no exception in these challenges, but farmers (smallholder farmers) remain resilient, making the sector one of the key role players ensuring food security and employment. The study explored the food security challenges that smallholder farmers face in achieving food security in Gert Sibande District, South Africa. The study's objectives were to determine the food security status of smallholder farmers in the study area and to examine the challenges faced by smallholder farmers in their efforts to achieve household food security. The study employed the random sampling method to select 275 smallholder farmers who participated in the study. A mixed research design method was employed, and data were collected using structured questionnaires and focus group discussions. The Statistical Package for Social Sciences (SPSS version 27) software was used to analyse the data collected using descriptive and inferential statistics. The Food Consumption Score (FCS) was used to analyse the food security status. The study's major findings are that 90.5% of the farmers are encountering challenges when buying food for their families, as well as 65.1 % respondents stating that they are not receiving any external support. Therefore, it is recommended that future research examines the potential of young farmer in the study area towards their contribution to ensure food security among households.

**Keywords:** food security, smallholder farmers, agriculture, livelihood, household

## 1. Introduction

The food security challenge has persisted for years, and its impact is felt across the world, with at least 8.2% of the global population who were faced with hunger and a lack of food in 2024. Eight hundred and twenty-eight million (828 000 000) individuals in developing nations consumed fewer calories than what was necessary for their growth and well-being; moreover, others go to bed hungry, even though enough food is produced every day to sustain everyone on the planet (UNCTAD stats, 2022; Jessup-Varnum, 2018, and FAO, 2017). Currently, about 21,5 % of the population from 59 countries around the globe are facing serious food crises (FSIN, 2024). Ironically, some of the greatest food producers

\*Corresponding Author's Email: [ndlovushalia@gmail.com](mailto:ndlovushalia@gmail.com)



in the world are underdeveloped nations, such as Sudan, the Democratic Republic of Congo, Burundi, and South Sudan. The foods produced by these nations vary from Sesame, Coffee, Sugar, Cocoa, Tea, Cassava, Banana, Sorghum, and Maize. However, there are still significant obstacles to food production in these nations, including poor soil quality, pests and diseases, and unfavorable climate conditions. These obstacles further include technology, education, financing, policy, and infrastructure (Bjoenlund *et al.*, 2020). As a result, the agricultural sector has not been able to adequately fulfil the growing need for food and fibre as the world's population has increased.

Despite a pledge to reduce poverty by half between 2004 and 2014, South Africa still suffers extreme poverty and substantial financial inequalities (Siciko, 2023). About 11, 6% of people in the country live in poverty and experience food insecurity, even though it is regarded as a food-secure nation (Statistics SA, 2021; Altman; Hart, Jacobs, 2009, and Siciko, 2023). Moreover, a quarter of a million individuals in the nation are at risk of hunger, with 1.5 million children suffering from malnutrition (Statistics SA, 2021; Bese, 2020, and Charlton & Rose, 2002). This is a result of the decline in the food production system of the country. Climate change, lack of finance, and support affect food production in South Africa, and are some of the pressing issues impacting smallholder farming systems in the country (Zenda, 2024). However, equal and equitable distribution and management of resources would leverage the country in its quest to improve food production systems. This would then lead to South Africa becoming not only a food-secure nation, but a nation with almost 90% of its people being food-secure.

### **1.1 Problem Statement**

Food security remains a pressing concern in South Africa, where millions of people struggle to access sufficient, safe, and nutritious food (Mbajjorgu & Odeku, 2022). Food security exists when all people always have physical, social, and economic access to sufficient, safe, and nutritious food that meets their dietary needs and food preferences (FAO, 2023). However, in South Africa, the reality is that many households face significant challenges in accessing nutritious food, leading to widespread food insecurity. The prevalence of food insecurity in South Africa is alarming, with approximately 26% of households experiencing hunger and 55% living in poverty (Stats SA, 2020). Rural areas are disproportionately affected, with 43% of rural households experiencing hunger compared to 15% in urban areas (Stats SA, 2020). At least 71% of the people in Mpumalanga province are food insecure, while reports show that 20% of the people in the Ehlanzeni district are food insecure. Significantly, 20% of individuals in the Gert Sibande district go to bed without food most days, while 23.0% of the households in the Nkangala district lack access to food.

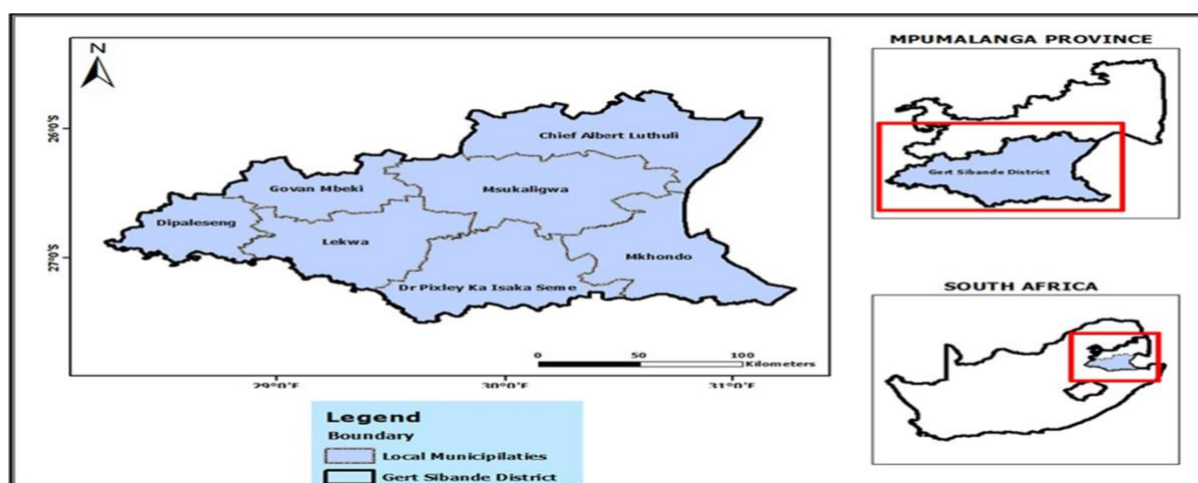
This is a result of the plethora of issues reported in the literature, including but not limited to rising food commodity prices, droughts, climate change, conflicts, and pandemics (McCarthy *et al.*, 2018; Statistic SA, 2021; Simelane *et al.*, 2023). While it is indisputable that smallholder farming plays a huge role in

poverty alleviation, improving household food security, and contributing towards the sustainability of rural livelihoods, it still faces these challenges. These challenges call for a redefinition of the adaptation and coping strategies employed by smallholder farmers to continue to produce (Dhillon & Moncur, 2023).

South Africa's food system is heavily reliant on a few large-scale commercial farmers, leaving small-scale farmers and rural communities vulnerable to food price volatility and climate-related shocks (Biénabe *et al.*, 2018). With this perpetuating in the agricultural sector, the country will continue to face the food insecurity consequences, which are far-reaching, impacting human health, education, and economic productivity (Beyene, 2023). All these are closely linked to poverty, inequality, and social injustice, perpetuating a cycle of disadvantage and exclusion (Mbajiorgu & Odeku, 2022). Therefore, addressing food insecurity in South Africa requires a comprehensive and multifaceted approach that addresses the root causes of poverty, inequality, and social injustice. This approach should, as far as possible, include the smallholder farmers in the growth path for the enhancement of both agricultural productivity and economic growth. These issues, well addressed, will aid in addressing the prevalent problems of poverty, food insecurity, and unemployment. Hence, the study sought to investigate the food security challenges facing smallholder farmers in the country, paying close attention to determining the food security status of smallholder farmers in the study site (Gert Sibande) as well as unpacking the challenges facing smallholder farmers in achieving household food security.

## **2. Materials and Methods**

This study was carried out in Gert Sibande, the biggest district in Mpumalanga province of South Africa. Gert Sibande covers nearly half of the province, and it hosts a significant underground mining complex with a diverse economic landscape. Seven municipalities make up the district, namely: Chief Albert Luthuli, Dipaleseng, Dr. Pixley ka Seme, Govan Mbeki, Lekwa, Mkhondo, and Msukaligwa. It also has the largest agricultural sector and major industrial complexes. The district produces most of South Africa's sheep and wool. The district was named after Richard Gert Sibande, who was born in 1907 near Ermelo, Mpumalanga, and died in 1987. He was a South African political activist (DCGTA, 2020). The district is made up of 92% black Africans in the total population in 2016, whites at 7%, Colored 1% and Indians/Asians constitute 1% (DCGTA, 2022, and Mpumalanga municipalities, 2012). The district's total population is 1,283,459, with a total area of 31,841 [km] <sup>2</sup> (Statistics, 2022).



*Figure 1: Map of Gert Sibande District*

*Source: Mpumalanga municipalities (2012)*

## **2.1 Sampling Procedure, Data Collection Tools and Techniques**

The mixed-method research design was adopted when collecting data for the study, as it allows researchers to explore both qualitative and quantitative research to answer the research questions. Mixed-method research has the benefit of providing a more comprehensive picture than solitary quantitative or qualitative research since it incorporates the advantages of both disciplines (George, 2023). However, its limitations are that it has a work overload and conflicting results. The work overload was overcome by proper planning, which includes team training, team delegations, and teamwork. The conflicting results were overcome by changing qualitative data into quantitative codes. The smallholder farmers living in the Gert Sibande District, Mpumalanga, South Africa, were the intended study's target group. There were 879 smallholder farmers listed with the DARDLEA information database (DARDLEA, 2023). The study employed the probability (random) sampling technique. A complete sampling framework of the potential respondents from whom the sample was drawn is the first step in using probability sampling. This means that every participant possessed an equal opportunity to be chosen to take part in the research, which helps get a representative sample of the population. Of the 879 smallholder farmers registered with DARDLEA in the Gert Sibande district, the study sampled only 275 respondents. This sample size was determined using Slovin's formula as illustrated below. A total number of 879 smallholder farmers represents the target population (N), while the Margin of error (e) is at 0.05 and the confidence level is at 95%.

$$n = \frac{N}{1 + Ne^2}$$

$$n = \frac{879}{1 + 879(0.05)^2}$$

$$n = 274.9$$

$$n = 275$$

## 2.2 Method of data collection and analysis

Researchers conducted an exploratory visit to the study area before the commencement of data collection. This allowed the researchers to familiarize themselves with farming activities farmers are involved in and engage community leaders, and obtain consent from opinion leaders, the extension officers, and the smallholder farmers who would participate in the study. Of course, at this point, not all the smallholder farmers were contacted due to time constraints. This was achieved through observations, transect walks, and meetings with community leaders and key informants in the study area. Therefore, the data were collected using structured questionnaires, and transect walks helped the researchers to be able to understand the issues that the communities faced, the resources they have through observations, and focus group discussions. There were five focus groups conducted during data collection, which had 6-10 participants. The results were analyzed using SPSS software v27, using descriptive statistics (tables, graphs, and pie charts).

## 3. Results and discussion

### 3.1 Household receiving support from anyone outside the household

Table 1 below indicates whether households receive support from anyone outside the household. The results show that of the 275 respondents who participated in the study, 34.9% stated that they were receiving support from outside for their household. However, 65.1% indicated that they were not receiving support from any outside source. This result was further supported during the focus group discussions, where most of the participants argued that they did not receive support from external sources. This was realized during the focus group discussion because of not having of family members working.

*Table 1: The Respondents' Confirmation of Receiving Support from External Sources in the study area*

Household receiving support	Frequency	Percentage (%)
Yes	96	34.9
No	179	65.1
<b>Total</b>	<b>275</b>	<b>100</b>

Source: Own survey (2025)

### 3.2 The types of household external support received by the respondents in the study area

Figure 1 below indicates the types of household external support received by the respondents in the study area. The results stated that of the 275 respondents who participated in the study, 175 respondents indicated that they were not receiving any support. While 56 of the participants stated that they were receiving cash, and 1 stated that they were receiving school fees support. Furthermore, 8 respondents indicated that they received rental support, while 9 said they received food support, and 26 respondents stated that they were receiving other kinds of support or more than one of the supports stated above on the pie chart. The results accord with the study of Wills *et al.* (2020 in their study of Household resource flows and food poverty during South Africa’s lockdown: Short-term policy implications for three channels of social protection, who also discovered that participants who were receiving money from friends and family only were 42%.

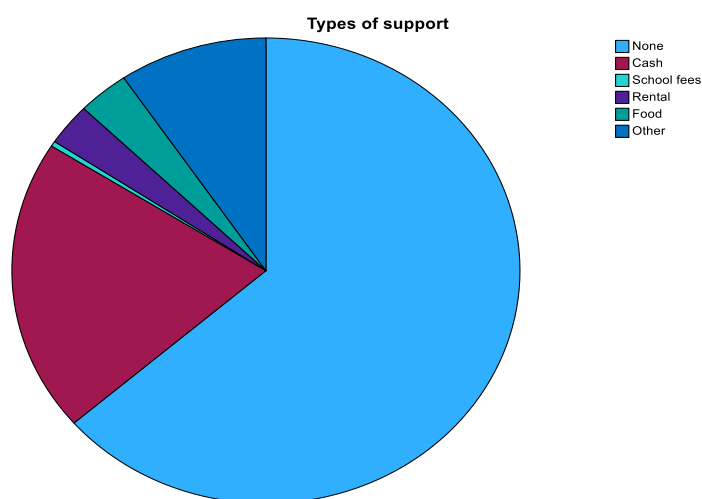


Figure 2: The types of households’ external support received by the respondents in the study area

Source: Own survey (2025)

### 3.3 The Respondents’ Confirmation of the Assets owned in the study area

The results in Table 2 indicate the Respondents’ Confirmation of the Assets owned in the study area, with two hundred and seventy-five respondents who participated in the study. 272 respondents indicated that they had residential houses of 1-3, while 2 indicated they had no residential area, and 1 respondent stated that they had 4-7 residential houses. Furthermore, 153 respondents stated that they had no cars in their house/ farm, while 116 indicated they had cars between 1-3, 5 respondents stated that they had cars between 4-6, and 1 respondent stated that they had cars of 7-10 in the house/farm. Additionally, the results indicated that of the 275 respondents, 190 stated that they had no irrigation structure on their

house/ farm, while 83 stated that they had irrigation systems between, and irrigation systems of 4-6 they were 5 respondents. Moreover, 242 respondents indicated that they had no tractors on their house/farm, and 29 stated they had tractors between 1-3. Furthermore, 82 stated they did not have ovens in their house, and 225 respondents stated they had ovens between 1-3. Additionally, 202 respondents indicated that they did not have land of their own, while 73 respondents indicated that they have their own land with ranges on 1-3. Furthermore, 54 indicated they did not have a refrigerator in the house, while 271 stated that they had refrigerators of 1-3 in their house. While 259 respondents indicated that they had no air conditioners, those that had air conditioners of 1-3 in their house were 16, and 1 indicated that they had 4-6 air conditioners. Of 210 respondents indicated they did not have machinery in their house/farm, 64 stated that they had 1-3 machinery, and 1 stated that they had 4-6 machinery. Lastly, 262 respondents stated that they did not have any other equipment on their house/ farm, while 13 stated that they had 1-3 machinery in their house/farm.

*Table 2: The Respondents' Confirmation of the Assets owned in the study area*

<b>Assets</b>	<b>None</b>	<b>1-3</b>	<b>4-6</b>	<b>7-10</b>
<b>Residential house</b>	2	272	1	0
<b>Car</b>	153	116	5	1
<b>Irrigation structure</b>	190	83	2	0
<b>Tractor</b>	242	29	0	0
<b>Tv</b>	51	225	0	0
<b>Oven</b>	82	193	0	0
<b>Land</b>	202	73	0	0
<b>Refrigerator</b>	54	221	0	0
<b>Air conditioner</b>	259	16	0	0
<b>Machinery</b>	210	64	1	0
<b>Other farm equipment</b>	262	13	0	0

Source: Own survey (2025)

### **3.4 The Respondents' Source of Drinking Water in the Study Area**

Table 3 below shows the respondents' source of drinking water. The result shows that of the 275 respondents who participated in the study, 17.1 % stated that their source of water was tap water (borehole), while 3,3 % indicated that their water source was the river. Furthermore, those who drank water from the dam made up a total of 4.4 % of the participants, while 75.3 % indicated that their water source was from communal water. The results are supported by the results found during the focus group

discussions that took place during data collection, and it was discovered majority of the smallholder farmers participating in the study had their source of drinking water as communal water.

Table 3: The Respondents' Source of Drinking Water in the study area

Variables	Frequency	Percent
Tap water (borehole)	47	17.1
River	9	3.3
Dam	12	4.4
Communal water	207	75.3
Total	275	100.0

Source: Own survey (2025)]

### 3.5 The Respondents' Confirmation of the Quality of the drinking water in the study area

Figure 3 below shows the respondents' assertion of the quality of drinking water in the study area. The results show that with the 275 respondents who were by of the study, 17.5 % indicated that their quality of drinking water was excellent. While 24.4 % stated that their water quality was very good, 3.6 % were undecided. Furthermore, 31.3 % indicated that their water quality was good, and 23.3 % stated that their quality was bad.

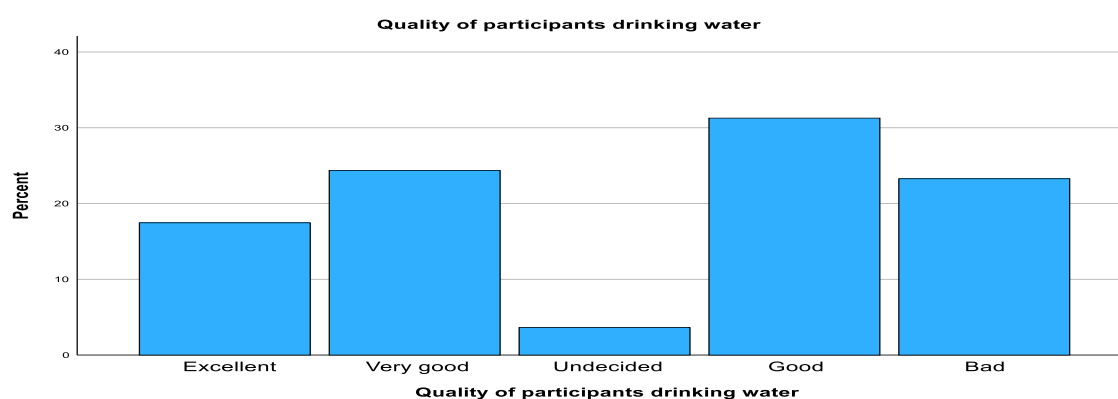


Figure 3: The Respondents' Confirmation of the Quality of the drinking water in the study area

Source: Own survey (2025)

### 3.6 Food consumption information for calorie intake calculations: Food consumption-related data, the last 7 days, among the respondents in the study area

The results in Table 4 below show the Food consumption information for calorie intake calculations. Food consumption related data, last 7 days. The results of the cereal and tubers food group the respondent who stated that their cereal and tubers consumption was once a week, while five stated that they consume it once in the last seven days. There were none of the respondents consumed it two times

a week, while one respondent stated that they consumed it three times. Additionally, five respondents stated they consumed it four times, four who indicated that they consumed it five times, while eleven respondents indicated that they consumed cereal and tubers six times, and two hundred and eight of the participants stated that they consumed it seven times. The pulse results show that thirty-nine of the respondents indicated that they did not consume pulses in the last seven days, while one hundred and six respondents stated that they consumed them once. Sixty-eight stated they consumed pulses twice, while nineteen respondents said they consumed pulses three times for the last seven days. Furthermore, twenty-four of the participants indicated that they consumed pulse four times in the last seven days, three respondents stated that they consumed it five times, while four respondents indicated that they consumed it six times, and twelve respondents stated that they consumed pulse seven times in the last seven days. The results also show that for the fruit food group, twenty-nine of the respondents stated that they did not consume any fruits for the last seven days, and seventy-six indicated that they only consumed them once. Thirty-eight respondents indicated that they ate fruit two times, with thirty-eight respondents stated that they ate fruit three times in the last seven days. Moreover, thirty-four stated that they consumed fruits four times, while twelve respondents stated that they ate fruit five times, with twenty participants who consumed fruits six times, and thirty respondents stated that they consumed fruit seven times in the last seven days. Additionally, the results show that for the vegetable food group, six participants stated that they did not consume any vegetables for the last seven days, and twenty-five indicated that they only ate them once. While twelve respondents indicated that they ate vegetables two times, thirty-six respondents stated that they consumed them three times, and thirty-four participants indicated that they consumed them four times in the last seven days. While fourteen respondents stated that they ate vegetables five times, thirty-six respondents indicated that they ate vegetables six times, and one hundred and twelve of the respondents said that they ate vegetables seven times in the last seven days. The results also show that from the meat food group six of the respondents indicated that they did not eat meat in the last seven days, while twenty-five indicated that ate meat once, twelve respondents stated that eat meat two times, thirty-six respondents stated that they consumed meat three times, and one hundredth and twelve respondents stated that consumed meat seven times in the last seven days. Additionally, the results show that for the dairy product food group, five respondents stated that they did not consume any dairy products in the last seven days, while twenty-six indicated that they only ate dairy products once, and thirty-two participants indicated that they consumed dairy products two times in the last seven days. Additionally, fifty-one respondents indicated that they ate it three times, while sixty-two respondents stated that they ate dairy products four times, and thirty-six respondents stated that they ate dairy products five times. Furthermore, twenty-four participants indicated that they consumed it six times, and thirty-nine respondents stated that they ate dairy products seven times in the last seven days. Furthermore, for the sugar food group, the results show that four out of the respondents indicated that they did not consume any sugar for the last seven days, while eighty-

three participants stated that they consumed sugar once, forty-five respondents stated that they ate sugar two times, and thirty-four participants indicated that they consumed sugar three times in the last seven days. The respondents who indicated that they consumed sugar three times were thirty-four, while twenty-eight respondents stated that they consumed sugar four times, and four respondents indicated that they ate sugar five times. Moreover, participants who stated that they consumed sugar six times in the last seven days were seven, and thirty-three respondents stated that they ate sure seven times in the last seven days. Lastly, the results show that the oil/fat food group, seventeen participants stated that they did not consume oil/fat in the last seven days, while eight participants stated that they consumed oil/fat one time. Respondents that indicated they consumed oil/fats two time they were five, while five respondents stated they ate oil/fats three times, four participants indicated that they consume it four times, and thirteen stated that they consume oil/fats five time, while fourteen respondents stated they ate oil/fats six times, and two hundredth and nine participants indicated that they consumed oil/fats seven times in the last seven days. This result is consistent with the Sambo *et al.* (2022 his study on topic Analysis of the dietary diversity status of agricultural households in the Nkomazi Local Municipality, South Africa, and discovered that 100% of the participants stated that they consumed cereal in the past 24 hours, and 78.31% consumed vegetables.

Table 4: Food consumption information for calorie intake calculations: Food consumption-related data, last 7 days among the respondents in the study area

Food groups	None	1	2	3	4	5	6	7
Cereal and tubers	1	5	0	1	5	4	11	248
Pulse	39	106	68	19	24	3	4	12
Fruits	29	76	36	38	34	12	20	30
Vegetables	6	25	12	36	34	14	36	112
Meat	6	25	12	36	34	14	36	112
Dairy product	5	26	32	51	62	36	24	39
Sugar	41	83	45	34	28	4	7	33
Oil/fats	17	8	5	5	4	13	14	209

Source: Own survey (2025)

### 3.7 The Type of food consumed by the respondents daily in the study area

Table 4 below illustrates the types of food consumed by the respondents daily in the study area. The results show that with 275 participants, 7 respondents who participated in the study stated that they eat wheat more often, for rice, it was 18 participants, and 250 respondents indicated that they eat multiple

grains than stated above are more. Furthermore, 264 respondents stated that they ate vegetables daily, while 11 respondents stated that they did not eat vegetables. Moreover, 210 participants indicated that they eat fruit daily, and 64 participants indicated that they do not eat fruit in their household. For oils food groups those whole stated were 268, while 2 members indicated that they ate olive oil, for other oils or multiples of oils were 2 members, and 2 respondents also stated that they did not eat oils. Additionally, 86 respondents stated that they eat white meat. Respondents who indicated that they eat meat daily were 9, 161 respondents indicated they eat multiple types of food, and 19 respondents indicated that they do not eat meat. With 275 respondents under the poultry production food group, 167 stated that they are going to nominals, 1 stated they eat more than one poultry, and 117 participants stated that you were not eat poultry products. Moreover, for the dairy product, 168 respondents that they are eating milk recently, while for yogurt, and those that they eat yogurt and another type of broiler production consists of 1 participant each, and 19 respondents stated that they did not eat dairy product at all, where 105 respondents. Lastly, 224 participants indicated that they ate sugar, while 24 participants stated that they ate more than one type one sure products like sweets and cake, and respondents who stated that they did not eat any sugar products daily were 27.

*Table 4: Types of food consumed by the respondents daily in the study area*

<b>Food groups</b>	<b>Examples of food items</b>	<b>Values</b>
<b>Grains</b>	Wheat	7
	Rice	18
	Other	250
<b>Vegetables</b>	All types of vegetables	264
	None	11
<b>Fruits</b>	All types of fruits	210
	None	64
<b>Oils</b>	Cooking oil	268
	Olive oil	2
	Other	3
	None	2
<b>Meat</b>	White meat	86
	Red meat	9
	Other	161
	None	19
<b>Poultry products</b>	Eggs	157
	Other	1
	None	117
<b>Dairy products</b>	Milk	168
	Yogurt	1
	Other	1
	None	105
	Sugar	224

<b>Sugary products</b>	Other	24
	None	27

Source: Own survey (2025)

### 3.8 The Respondents' confirmation on how often the food is consumed in the study area

Figure 3 below shows how often the respondents consumed the food stated in Table 4 above. Of the 275 respondent's 1.5 percent stated that they were not consuming the foods listed on Table 4 above often, while 44.4 percent of the respondents indicated that they were consuming the foods often. Furthermore, 13.5 percent of the respondents stated that they were undecided, while 22.5 percent indicated that they consumed the food very often, and 18.2 percent of the participants indicated that they consumed the food most often.

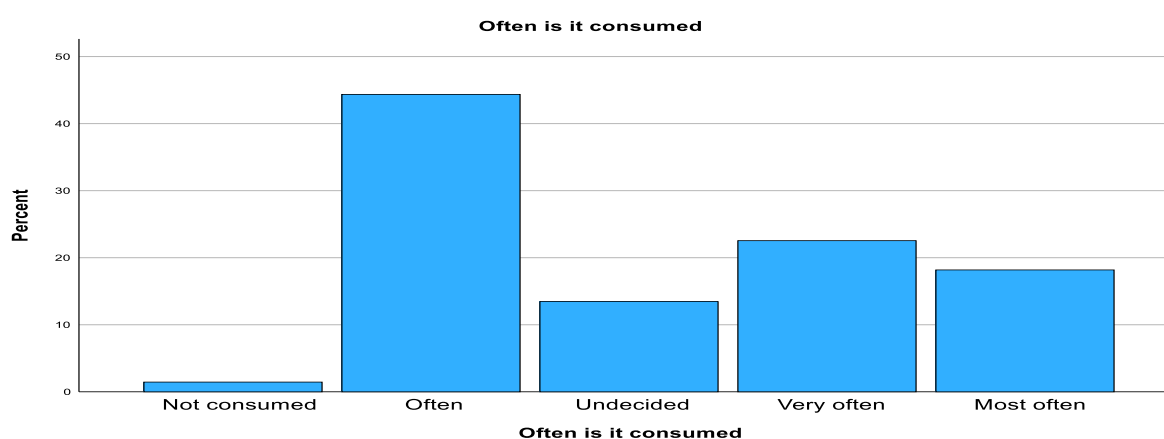


Figure 3: The Respondents' confirmation on how often the food is consumed in the study area

Source: Own survey (2025)

### 3.9 The respondents' ability to provide for their families in the study area

The ability of the participant to be able to provide for their families is illustrated in Table 5 below. The results show that 249 participants indicated that they were able to provide for their families, while 26 participants indicated that they could not provide for their families.

Table 5: The respondents' ability to provide for their families in the study area

Variables	Frequency	Percent
<b>Yes</b>	249	90.0
<b>No</b>	26	9.5
<b>Total</b>	275	100.0

Source: Own survey (2025)

### 3.10 The respondents’ assertion of the challenges faced when buying food for their families in the study area

Table 6 below indicates the respondents’ assertions of the challenges faced when buying food for their families in the study area. With the 275 respondents who participated in the study, 90.5% stated that they were facing challenges when buying food for their families, while 9.5% stated that they were not facing any challenges. The results are supported by the focus group discussion, where most of the participants indicated that they were facing challenges when buying food for their families.

Table 6: The respondents’ assertion of the challenges faced when buying food for their families in the study area

Variables	Frequency	Percent
Yes	249	90.5
No	26	9.5
<b>Total</b>	<b>275</b>	<b>100.0</b>

Source: Own survey (2025)

### 3.11 Challenges that participant faced when buying food for their families in the study area

The Challenges that participant faced when buying food for their families in the study area are indicated in Figure 4 below. Twenty-six (26) of the respondents stated that they were not facing any challenges, while twenty-three (23) of the participants stated that they were having financial problems. Moreover, eighty-five (85) respondents indicated that their challenge was the distance to the market or transport costs. While one of the respondents stated that they were facing the challenges of seasonal availability of food, two hundred and thirty-seven respondents stated that they were facing other challenges, and others were facing more than one challenge on the list above.

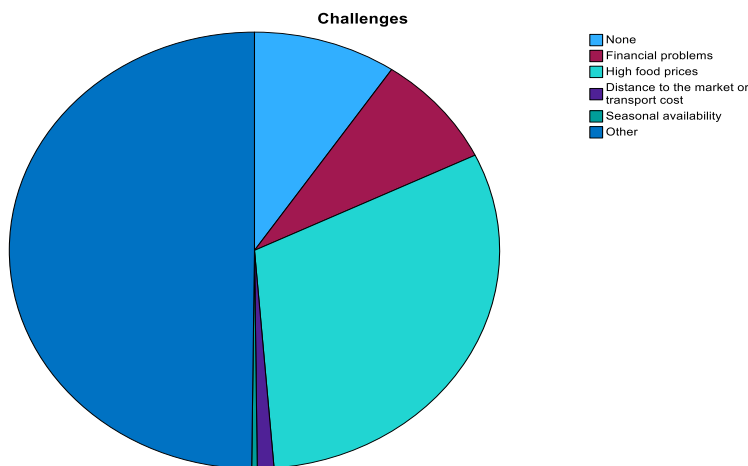


Figure 5: Challenges that participant faced when buying food for their families in the study area

Source: Own survey (2025)

### 3.12 The respondent’s strategies employed in addressing the challenges faced when accessing food for their families in the study area

Figure 5 below shows The respondent’s strategies employed in addressing the challenges faced when accessing food for their families in the study area, with the two hundredth and seventy-five response 9.8 percent stated that they were not using any means, while 3.3 percent stated that they were being assistant by their relatives, moreover, 9.8 percent indicated that they were growing their own food, those that were compering prices when buying food were 8.7. While 0.4 percent indicated that they were considering Community-Supported Agriculture (CSA), furthermore, 0.4 percent indicated that they were freezing leftovers, while 1.1 percent stated that they were cooking at home more frequently. While 1.1 percent of the respondents stated they were considering store-brand products, 6.5 percent indicated that they plan and make grocery lists when buying food, and 59.3 percent indicated they were using more than one of the means or other means that were not stated on the pie chart above.

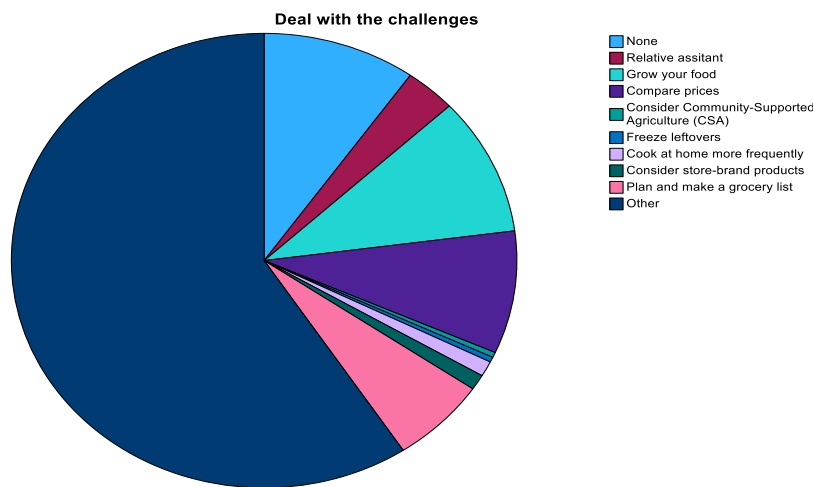


Figure 6: The respondents’ strategies employed in addressing the challenges faced when accessing food for their families in the study area

Source: Own survey (2025)

## 4. Conclusion and Recommendations

The study aimed to determine the food security status of smallholder farmers in the study area and to examine the challenges they face in their efforts to achieve household food security. The study was conducted at the Gert Sibande district, which is one of the three district municipalities in Mpumalanga

province, South Africa. A random sampling procedure was employed to sample the 275 smallholder farmers who participated in the study. Information was gathered using structured questionnaires that were internationally split into two sections: one collecting data on the food security status. More data was gathered using a transect walk and focus group discussions. The data was analyzed using descriptive statistics. As per results, as much as smallholder farmers in Gert Sibande District strive to produce enough food to feed their families, household food insecurity and the unsustainable means of livelihood among smallholder farmers are the biggest challenges. The majority of the farmers in the Gert Sibande district are faced with challenges such as a rise in food prices, financial constraints, and very high transport costs. While all these are most of the smallholder farmers (264) consume vegetables, 248 consume cereals and tubers. Therefore, it is recommended that future research examines the potential of young farmer in the study area towards their contribution to ensure food security among households.

### **Acknowledgements**

The authors would like to appreciate the NRF postgraduate scholarship for funding their attendance at the AGRICO 2025 Conference, also to appreciate the University of Mpumalanga for the ethical clearance approval for the study.

### **Declaration of Interest Statement**

The authors declare that they have no conflict of interest.

## References

- Adhikari, G. P. (2021). Calculating the Sample Size in Quantitative Studies. *Scholars Journal* (10.3126/scholars.v4i1.42458), 14-29.
- Bese, D. D. (2020). *Sustainable farmer livelihoods and enhancing food security in Mbashe Municipality, Eastern Cape Province, South Africa*. Bloemfontein: Thesis PHILOSOPHIAE DOCTOR in the Centre for Sustainable Agriculture and Rural Development, Faculty of Natural and Agricultural Sciences, University of the Free State, South Africa.
- Beyene, S. (2023). The impact of food insecurity on health outcomes: empirical evidence from sub-Saharan African countries. *BMC Public Health*, 23, 338.
- Biénabe, E. e. (2018). Small-scale farmers and the food system in South Africa. *Journal of Rural Studies*, 57, 241-253.
- Bjoenlund, V., Bjoenlund, H., & Van Rooyen, A. F. (2020). Why agriculture production in Sub-Saharan Africa remains low compared to the rest of the world- a holistic perspective. *INTERNATIONAL JOURNAL OF WATER RESOURCES DEVELOPMENT*, 36(1), 20-53.
- Charlton, K., & Rose, D. (2002). Prevalence of household food poverty in South Africa: results from a large, nationally representative survey. *Public Health Nutrition*, 5(3), 383-9.
- DALRRD, & Department of Agriculture, Land Reform and Rural Development (2023). *Newsletter: National Livestock Statistics*.
- Department, Department of Cooperation, Governance and Traditional Affairs. (2022). *Profile and analysis district development model: Gert Sibande district, Mpumalanga*.
- Dhillon, R., & Moncur, Q. (2023). Small-Scale Farming: A Review of Challenges and Potential Opportunities Offered by Technological Advancements. *Sustainability*, 15(21), 1-16.
- FAO. (2017). *The state of food security and nutrition in the world 2017*. Retrieved from Retrieved from: <http://www.fao.org/state-of-food-security-nurition/en/>
- FAO, I. U. (2023). *The State of Food Security and Nutrition in the World 2023*. FAO, IFAD, UNICEF, WFP, and WHO.
- Food Security Information Network (2024). *Global Report on Food Crises (GRFC) 2024*. Rome.
- George, T. (2023). *Mixed Methods Research | Definition, Guide & Examples*. Scribbr. Retrieved June 22, 2023, from <https://www.scribbr.com/methodology/mixed-methods-research/>
- Jessup-Varnum, M. (2018). Food Security and the Sustainable Livelihood Approach to Development in Uganda. *University Honors Theses*, 556.
- Mbajiorgu, D. G., & Odeku, K. O. (2022). Fighting food insecurity, hunger, and poverty: the content and context of the socio-economic right of access to sufficient food in South Africa. *Obiter*, 43(3), 467-488.

- McCarthy, U., Ismail, U., Badia, M. R., Samuel, M., O, D. C., & Ktenioudaki, A. (2018). Global Food Security – Issues, Challenges and Technological Solutions. *Trends in Food Science and Technology*, 77, 11-20.
- Mpumalanga, M. (2012). *municipalities*.
- SA, S. (2020). *General Household Survey 2019*.
- Sambo, T. A., Oguttu, J. W., & Mbombo-Dweba, T. P. (2022). Analysis of the dietary diversity status of agricultural households in the Nkomazi Local Municipality, South Africa. *Agriculture & Food Security*, 1-12.
- Siciko, S. (2023). *Food Security in South African households: A case study of rural Limpopo*.
- Simelane, T., Mutanga, S., Hongoro, C., Mjimba, V., Zuma, K., Kajombo, R., . . . Tshitang, F. (2023). *National Food and Nutrition Security Survey: Provincial Report: Mpumalanga Province*. Pretoria: HSRC.
- Statistics, South Africa. (2021). *Focus on food inadequacy and hunger in South Africa in 2021*. Department of Statistics South Africa.
- Statistics, South Africa. (2022). *Statistics by place*.
- UNCTAD, United Nations Trade and Development. (2022). *Now 8 billion and counting: Where the world's population has grown most and why that matters*. Retrieved November 15, 2022, from <https://unctad.org/data-visualization/now-8-billion-and-counting-where-worlds-population-has-grown-most-and-why>
- Wills, G., Patel, L., van der Berg, S., & Mpeti, B. (2020). Household resource flows and food poverty during South Africa's lockdown: Short-term policy implications for three channels of social protection. *SSRN*, 1-46.
- Zenda, M. (2024). A systematic literature review on the impact of climate change on the livelihoods of smallholder farmers in South Africa. *ScienceDirect*, 1-13.