An inquiry into factors influencing croplands abandonment by households in eMzitheni village, Eastern Cape

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DECLARATION A – PLAGIARISM

I, Lerato Mary-Gold Morajane, hereby attest that:

1. The research results presented in this dissertation are my own; all other sources are cited with due acknowledgment.
2. The information contained in this dissertation has never been used before towards any qualification at any higher learning institution.
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The following papers and conference submissions have resulted from this thesis:

Papers submitted to journals

1. Morajane L.M., Christian M., Zantsi S., and Kanayo O. 2025. Socio-economic determinants of cropland abandonment: evidence from eMzitheni, South Africa.

Submitted to Frontiers – proof of submission attached

2. Morajane L.M., Christian M., Zantsi S., and Kanayo O. 2025. Socio-economic determinants of cropland abandonment: evidence from eMzitheni, South Africa.

Submitted to Cogent Food & Agriculture – proof of submission attached

Conference

1. Morajane L.M., Christian M., Zantsi S., and Kanayo O. 2026. Socio-economic determinants of cropland abandonment: evidence from eMzitheni, South Africa.

Submitted to IFAMA 2026 Conference – proof of submission attached

DEDICATION

I dedicate this work to the Almighty God, my son, Thato, and my mother Mrs Hilda Sebenzile Morajane, who has supported me from the beginning of this journey and has served as my motivation to finish this course, and my late maternal grandmother, Mrs Evelyn Sithole, who rested before witnessing my varsity journey.

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ABSTRACT

Cropland abandonment is a complex phenomenon that continues to threaten food security and livelihoods of farming households in South Africa and elsewhere in the world, yet the factors influencing land abandonment are understudied. The aim of this study was to investigate the factors behind the abandonment of arable lands in the rural community of eMzitheni village in Mnquma Local Municipality of the Eastern Cape province and evaluate the consequences of cropland abandonment on food availability among households. A mixed-methods research approach was employed, involving structured and semi-structured questionnaires administered to 95 farming households, who were selected through purposive and stratified sampling method. A cross-sectional and exploratory research design was followed. Descriptive statistics were used to analyse household food production and associated characteristics, while a logit regression model identified factors influencing cropland abandonment. Thematic analysis was conducted to analyse households' perceptions, attitudes and lived experiences of cropland abandonment and the consequences of cropland abandonment on food availability. The results of the study showed that 54% of the participants were females. The findings revealed that adult participation in agricultural activities is high in eMzitheni, as the average mean age of the participants was 54 years, and their average farming experience 17 years. The study showed that 24% of the households indicated that they were solely dependent on agriculture for their livelihoods and 48% of the households indicated that they had slightly abandoned their croplands, with maize being the predominantly grown crop in the area. Among all tested variables, smartphone ownership showed a significant relationship ($p = 0.007$) with land abandonment, suggesting that increased access to digital and non-farm opportunities may influence livelihood diversification away from agriculture. The study also found that cropland abandonment negatively affected household food availability, reducing self-produced food supplies and increasing reliance on purchased food, thereby heightening vulnerability to food insecurity. The study recommended effective intervention against cropland abandonment in eMzitheni and similar rural areas require holistic, well-coordinated, and inclusive policies that combine economic incentives, environmental resilience, social empowerment, and institutional reform.

Keywords: Cropland abandonment; farming households; rural livelihoods; farming practices; logit regression

CHAPTER ONE

INTRODUCTION

1.1. Background to the study

Agriculture has a significant role in fostering rural economic development and guaranteeing food security (Masuku *et al*., 2017). Agriculture and allied activities provide the majority of rural households in Africa with a living (Poulsen *et al*., 2015). As rural communities develop, subsistence farming is essential to ensuring improved living conditions and food security (Department of Agriculture, Forestry and Fisheries, 2016). According to Mashamaite (2014), subsistence farming gives rural households food security by lowering food costs through better food supply, giving the impoverished job opportunities, educating family income, and supplying food for consumption. Subsistence farming allows the poor to enable themselves to make their living standards better and gives them a good chance at food security. However, many former small-scale farmers who once cultivated crops for subsistence and supplementary income have either experienced a decline in yields or have completely ceased farming activities (Hlophe-Ginindza and Mpandeli, 2020).

According to Stickler and Shackleton (2015), over the past 30 years, a number of studies conducted at the local level in South Africa have documented a decrease in field cultivation. The majority of research comes from the Eastern Cape province's former homelands, the Transkei and the Ciskei. Although much of the discourse in South Africa on land has been on the need to return land to black communities for redress as well as for residential and agricultural purposes, there is evidence that many rural communities are abandoning arable land (Blair *et al.,* 2018; Shackleton *et al.,* 2019). Abandoned land is defined as "land not subject to any cultivation practice (including conservation agriculture), nor intended for grazing". When certain farming regions become unviable under current land use and socioeconomic frameworks, it can lead to a process of marginalization caused by a confluence of social, economic, political, and environmental variables. This process is known as land abandonment (Filho *et al.,* 2017).

While the decline in agricultural production occurred in all forms of agriculture, that is, livestock and arable production, the decline in the latter has been reported to be more intense than that of livestock production (Shackleton *et al.,* 2019). In certain areas, it has been reported that rural households have completely abandoned field cultivation. For instance, available

evidence from Statistics South Africa's Agricultural Household Survey (2017), shows that over half a million rural South African agricultural households abandoned farming between 2011 and 2016, meaning that most of rural communities who are often poor are increasingly relying on food purchases, in the context of price hikes (Shackleton *et al.,* 2019). However, not all rural areas have departed from land-based livelihoods.

According to Shackleton and Luckert (2015), there are many interrelated factors contributing to the abandonment of arable croplands in rural South Africa. One commonly cited reason is the distance between homesteads and crop fields, which makes regular field management, especially during weeding periods, difficult and time-consuming. Consequently, crops are often inadequately maintained, leading to lower yields among communal farmers. Similarly, high production costs have been identified as a major deterrent to continued crop cultivation, particularly for households lacking cattle or sufficient family labour, forcing them to hire machinery and labour, which increases expenses (Zantsi and Bester, 2019).

Other scholars, including Qhapetshu and Mdoda (2020), have attributed the decline in cultivation to a combination of limited access to farming equipment, absence of extension services, inadequate water supply, restricted access to credit, scarcity of productive resources, and the growing impacts of climate change. Furthermore, Shackleton (2019) highlights that abandonment is also driven by poor institutional and state support, changing socio-cultural dynamics, urban aspirations, declining interest in agriculture among younger generations, crop destruction by unherded livestock, soil infertility, and environmental degradation. The increasing availability of non-agricultural income sources, such as social grants, has further reduced dependence on farming, enabling households to purchase food rather than produce it.

In response to these challenges, the South African government has implemented several policy interventions aimed at revitalizing agricultural productivity and addressing food insecurity in rural communities. One of the earliest frameworks, the Integrated Food Security Strategy (IFSS), sought to transition smallholder and communal farmers from subsistence to market-oriented production (Department of Agriculture, Forestry and Fisheries, 2002). Complementary initiatives such as Ilima/Letsema, Fetsa Tlala, and Siyazondla were subsequently launched to promote crop and livestock production in former homeland areas (Shackleton *et al*., 2019).

Specifically, the Fetsa Tlala Integrated Food Production Initiative, introduced in 2013 by the Department of Agriculture, Forestry and Fisheries (DAFF), aimed to enhance food availability and support the National Development Plan (NDP) goal of eradicating hunger by 2030. Its objectives included increasing the productive capacity of smallholder and subsistence farmers, improving access to fresh locally produced food, and creating opportunities for agricultural value chain development, small business growth, and employment generation within the agricultural sector (DAFF, 2017).

Overall, while government initiatives have made progress in policy formulation and programme design, the persistent structural, financial, and environmental barriers at the community level continue to limit their impact on reducing cropland abandonment.

1.2. Problem statement

According to the National Development Plan (NDP), one of the main industries for boosting rural economies and establishing thriving rural economies is agriculture (NPC, 2011). In order to overcome poverty, communities in former homelands need social, economic, and political chances, according to the NDP. In this regard, one of the main ways to combat rural poverty and unemployment was via irrigated agriculture, smallholder farming, dry land farming, and agricultural growth founded on effective land reform generally. According to the National Planning Commission (2011), agriculture has the potential to provide "1 million jobs by 2030" and is the main economic activity in rural regions.

Large-scale food production initiatives are also thought to be the answer to the problem of food security in rural households. They concentrate on maize, a staple food for the majority of rural households, for the same reason. One of the national policy priorities that is a component of the sustainable development goals that South Africa is committed to achieving as part of the United Nations resolution is food security. South Africa's policy vision places agriculture at the heart of inclusive rural development and household food security (Department of Agriculture, Forestry and Fisheries, 2014). Shackleton *et al*, (2019) stated that the decrease in agricultural production has led to the widespread abandonment of field cultivation in rural areas. In fact, between 2011 and 2016, over 500,000 rural South Africans stopped farming, leading to many impoverished communities relying on purchasing food, which has become increasingly unaffordable due to the economic changes. Agricultural extension based on educational strategy has reached a critical point under publicly funded systems, where market-driven agriculture has become the focal point over traditional yield increases (Suvedi, 2019).

Agricultural Extension officers are using technology creativity to include urban consumers while overlooking the needs of smallholder farmers (Suvedi, 2019).

Multiple, interlinked factors appear to be driving cropland abandonment: escalating input and mechanisation costs; labour shortages and youth out-migration; long distances between homesteads and fields; weak extension and credit access; insecure or ambiguous tenure; damage from free-roaming livestock; and growing climate risk (Department of Agriculture, Forestry and Fisheries, 2016). The evidence based guiding policy is thin in three ways. First, much of the available research is cross-sectional or historically specific, limiting contributing insight into the decision to stop cultivating and the conditions under which households re-enter production. Second, findings are rarely disaggregated to the micro-contexts that shape decisions in communal areas, such as plot distance, local grazing control, or programme implementation quality, thus making it difficult to identify who benefits and why (Qhapetshu and Mdoda, 2020). Third, evaluations of government support often track inputs delivered rather than outcomes achieved (continued cultivation, yields, or household food production), leaving the long-run livelihood effects uncertain.

Against this backdrop, there is a clear need for granular, place-based evidence from villages like eMzitheni in Mnquma Local Municipality. Specifically, there is a lack of (i) socio-economic and demographic characteristics of farming households, (ii) a profile of which households still produce their own food, (iii) robust identification of the household, institutional and environmental factors associated with cropland abandonment, and (iv) an assessment of households' perceptions, attitudes and lived experiences of cropland abandonment and (v) assessment of the consequences of cropland abandonment on food availability among households. Addressing these gaps will generate actionable insights for provincial and national policymakers seeking to reduce arable land abandonment, strengthen household food security, and realise the development promises attached to public agricultural support in South Africa's rural Eastern Cape province. Therefore, the purpose of this study was to contribute to closing these knowledge gaps by conducting household surveys among rural households in eMzitheni village in Mnquma Local Municipality.

1.3. Research aim

The aim of this study was to analyse the factors behind the abandonment of arable lands in the rural community of eMzitheni village in Mnquma in the Eastern Cape province of South Africa and evaluate the consequences of cropland abandonment on food availability among households.

1.4. Research objectives

The specific objectives of the study were:

i. To identify socio-economic characteristics of households in eMzitheni involved in crop production.
ii. To identify which households in eMzitheni produce their own food.
iii. To identify the factors influencing cropland abandonment in eMzitheni.
iv. To analyze households' perceptions, attitudes and lived experiences of cropland abandonment in eMzitheni.
v. To analyze the consequences of cropland abandonment on food availability among households.

1.5. Research questions

The study sought to answer the following questions:

i. What are the socio-economic characteristics of households involved in crop production in eMzitheni village?
ii. Which households in eMzitheni produce their own food?
iii. What are the factors influencing cropland abandonment in eMzitheni?
iv. What are the households' perceptions, attitudes and lived experiences of cropland abandonment in eMzitheni?
v. What are the consequences of cropland abandonment on food availability among households?

1.6. Significance of the study

This study contributes to a deeper understanding of the socio-economic, institutional, and environmental factors driving the abandonment of arable land in South Africa. While previous research has examined the issue at provincial or national levels, very little evidence exists at the micro level of specific villages. By focusing on eMzitheni village in Mnquma Local Municipality, this study offers context-specific, place-based evidence that can illuminate how household decisions, local conditions, and government interventions interact to shape

agricultural outcomes. The findings enrich the academic discourse on smallholder farming sustainability, land-use transition, and rural livelihoods in post-apartheid South Africa.

The insights could also help provincial departments of agriculture and local municipalities to develop context-sensitive strategies for reviving idle land and support household food production.

At a broader societal level, this research speaks directly to the challenge of rural food insecurity and poverty. Eastern Cape is among the provinces with the highest rates of malnutrition and unemployment, despite its vast tracts of arable land. Understanding why households are moving away from farming – and how state interventions can counter this trend – could inform practical strategies to improve household resilience, food self-sufficiency and income generation. Findings may also assist development agencies and non-governmental organisations working to promote community-based agricultural revitalisation.

By documenting the lived experiences, constraints, and aspirations of rural households, this study amplifies local voices often excluded from agricultural policy debates. It highlights the importance of participatory, inclusive approaches that recognize both gender and generational dynamics in farming decisions. The recommendations emerging from this research could therefore support more equitable and sustainable rural development, ensuring that interventions not only boost production but also strengthen community capacity and dignity.

1.7. Research scope

The study investigated factors influencing the abandonment of arable lands in the rural community of eMzitheni village in Mnquma and evaluated the consequences of cropland abandonment on food availability. The research scope was micro-level and specific to community, providing in-depth insights into the socio-economic, environmental and institutional dynamics shaping local agricultural disengagement in eMzitheni village.

1.8. Dissertation outline

This dissertation consists of five chapters. The first chapter is an introductory chapter that consists of the background of the study, problem statement, aim of the study, research objectives and questions. It also covers the significance of the study and its scope and limitations. Chapter Two is the literature review. This chapter reviews the existing body of literature on cropland abandonment, providing context for the study and highlighting the gaps identified in the problem statement. The research objectives are multifold: (1) to identify the

socio-economic characteristics of farming household heads, (2) to determine which households in eMzitheni produce their own food, (3) to examine the factors contributing to cropland abandonment in the area, (4) to assess households' perceptions, attitudes and lived experiences of cropland abandonment, and (5) the assess the consequences of cropland abandonment on food availability among households.

Chapter Three presents the research methodology, detailing the study area, research design, sampling procedures, data collection instruments, and the measures taken to ensure their validity and reliability. It also outlines the data analysis techniques and ethical considerations applied in the study. Chapter Four provides the results, organized according to the study objectives, and discusses both the descriptive and inferential analysis undertaken. Finally, Chapter Five serves as the concluding chapter, summarizing the key findings, presenting overall conclusions, and offering recommendations. A comprehensive reference list of all cited work is also included.

1.9. Definition of key terms

Cropland abandonment - Discontinuation of cultivation on previously farmed land due to socio-economic, environmental, or institutional constraints (Shackleton *et al.,* 2019).

Farming households - Family units whose livelihoods depend on agriculture for food and income (Fanzo *et al.,* 2020).

Rural livelihoods - The diverse means by which rural populations secure food, income, and wellbeing through combinations of farming, non-farm work and natural resource use (Ellis, 2000).

Farming practices - Methods and techniques used in crop and livestock production shaped by local conditions (Gwiriri *et al.,* 2021).

Logit regression - a statistical modelling technique used to estimate the probability of a binary outcome (such as cropland abandonment vs. continuation) based on multiple explanatory variables (Hosmer *et al.,* 2013).

1.10. Chapter summary

This chapter established the foundation of the study by contextualising the problem of cropland abandonment in rural South Africa, with a particular focus on eMzitheni village in Mnquma Local Municipality, Eastern Cape province. While the country is food secure at a national level, many rural households remain food insecure and increasingly rely on purchased food despite owning arable land. The chapter outlined how subsistence farming, once central to food security and livelihoods, has declined due to reduced yields and land abandonment. It also highlighted the significance of the study in generating village-level evidence to inform policy, identified the knowledge gaps that shaped the research problem, and presented the study's aim, objectives, and research questions. Furthermore, it clarified the study's importance, scope, providing a clear framework for addressing the identified gaps. The next chapter reviews existing literature on cropland abandonment and government initiatives to revitalise these lands.

CHAPTER TWO

LITERATURE REVIEW

2.1. Introduction

In order to place the study in the correct context of the body of existing knowledge, this chapter focused on analyzing the contributions of previous research that were connected to the primary research problem and objectives of this study. The chapter reviewed existing body of knowledge on the factors influencing cropland abandonment and households' perceptions and attitudes towards cropland abandonment.

2.2. Socio-economic characteristics of farming households

Globally, cropland abandonment has been widely documented as a response to interacting economic, institutional, and environmental pressures affecting smallholder and marginal farming systems. Studies across Europe, Asia, and sub-Saharan Africa show that declining farm profitability, limited access to capital and markets, ageing farming populations, labour outmigration, and increasing climate variability are key drivers pushing households away from agricultural production (MacDonald *et al*. 2000; Meyfroidt *et al.* 2018). In the context of developing countries, weak rural infrastructure, insecure land tenure, and insufficient state support further exacerbate abandonment trends by raising production risks and reducing incentives for long-term investment in cultivation (van Vliet *et al.* 2015).

A significant driver of agricultural abandonment in the Mnquma Local Municipality (Eastern Cape) is the lack of sufficient capital and attractive employment opportunities. Many farming households simply cannot finance ongoing cultivation and therefore shift toward non-agricultural income sources (Christian *et al*. 2020). In addition, inadequate storage infrastructure and limited access to formal markets discourage households from remaining engaged in production over the long term. The presence of fundamental utilities – such as reliable electricity, drinking water, and transport infrastructure – plays a critical role in enabling crop production. Households confronted with poor road links, weak transport networks and limited irrigation access are more likely to abandon their crop plots (Blair *et al*. 2018).

Due to the fact that much of the region's farming is rain-fed, irregular rainfall and water shortages pose serious obstacles to continuity of cultivation. Cropland abandonment among smallholder households is thus tied not only to socioeconomic constraints but also to environmental pressures. For example, Blair *et al*., (2018) report that high input costs (seeds,

fertilisers, draught power) and inadequate government support emerge repeatedly as major barriers to continuing field cultivation. Younger generations are increasingly disinclined to maintain farming as a livelihood due to difficult working conditions and perceptions of low profitability (Mograbi *et al*. 2019). Furthermore, shifting climate patterns, including prolonged droughts, erratic rainfall, and increased production risk, amplify negative perceptions and diminish the viability of small-scale cropping operations.

Broader reviews of agricultural land abandonment stress the multi-dimensional nature of the phenomenon. According to Prishchepov (2020), decisions to cease farming are not purely economic but also relate to institutional-context factors (such as land tenure and access to services), personal characteristics (age, education, succession), and changing livelihood options. In the South African communal context, Blair et al. (2018) found abandonment rates in former homelands ranged between 0.08 % to 0.28 % per year between 1950 and 2010 — with causes including deficiency of draught power, rainfall variability, ageing farmers, and youth disengagement. These findings reinforce the notion that infrastructural deficits (mechanisation, water control, roads) and socioeconomic transitions (labour migration, non-farm employment, shrinking farming returns) combine to encourage disengagement from crop production.

2.3. Households' own food production by smallholder farmers

2.3.2. Importance of household food production

Household food production is a cornerstone of rural food security and poverty alleviation, especially in marginal communities like eMzitheni village. In many rural parts of South Africa, households depend on home gardens or small-scale farming as a primary or supplementary food source. This practice ensures a steady supply of fresh vegetables, grains, and legumes, significantly improving nutritional intake (Fanzo *et al*. 2021; Kroll *et al*. 2022). It also reduces dependency on volatile market prices and provides some insulation against food shortages. Mulaudzi *et al.,* (2019) emphasize that these small food systems can alleviate hunger and enhance resilience during periods of economic instability or environmental stress.

Recent national evidence shows agriculturally active households often face lower per-capita food expenditure needs than non-agricultural households — consistent with own-production substituting for purchases and stabilising food access (Shiba *et al*. 2025). In the Eastern Cape province specifically, programme experiences from Ndabakazi ("Back to the Fields") illustrate how reviving field cultivation through local cooperatives and mechanisation can rebuild

household food availability and reduce reliance on markets, especially where cash incomes are thin (Zantsi and Xaba, 2025).

Moreover, growing food at home is often rooted in tradition and community practices. It forms a vital part of social and economic systems in rural settings. Several studies note that household farming activities promote social cohesion, especially among women and the elderly, who often lead these efforts (Van den Berg and Makusha, 2020; Slater, 2020). According to De Cock *et al*., (2013), in regions where access to formal employment is limited, household food production not only feeds families but also gives them a sense of dignity and agency in providing for themselves.

2.3.2. Drivers behind household food self-sufficiency

Economic necessity is one of the major drivers that compel households to produce their own food. High food prices, rising unemployment, and limited government assistance make self-sufficiency appealing for low-income families. In their analysis, Aliber and Hart (2009) found that many rural South African households engage in subsistence farming primarily due to economic pressures. The availability of land and traditional agricultural knowledge also motivates rural households to farm. In some areas, ancestral ties to land and customary practices sustain farming activities regardless of profitability (Aliber and Hall, 2012).

Additionally, the implementation of government initiatives like the Integrated Food Security Strategy (IFSS) and One Household, One Garden program, reflects institutional support for household farming (DAFF, 2017; Masipa, 2017). These initiatives aim to promote food sovereignty and reduce rural poverty. However, the lack of consistency and monitoring in these programs limits their impact. Mmbengwa *et al.*, (2011) also argue that without sustainable support (such as input subsidies, training, and market access), most households struggle to maintain production beyond a few seasons.

In Ndabakazi, for instance, the Zanentlutha mechanisation push demonstrates that well-targeted local initiatives can reignite field cropping, yet sustainability hinges on fencing, traction access and recurring input support rather than once-off injections (Zantsi and Xaba, 2025). At a national scale, new evidence confirms that agriculturally active households structure their food budgets differently from non-agricultural peers, underscoring the role of self-provisioning in coping with price volatility (Shiba *et al*. 2025).

2.3.3. Challenges facing household agricultural activities

Despite its value, household food production faces numerous constraints that threaten its sustainability. Key challenges include poor access to quality seeds, irrigation, fertilizers, and tools. Gwiriri *et al*., (2021) note that many rural farmers rely on recycled seeds and rain-fed systems, which are increasingly unreliable due to climate change. Moreover, inadequate extension services mean households lack training in climate-smart agriculture or pest control, further reducing their productivity (Fanzo *et al*. 2021; Faber and Wenhold, 2007). These constraints prevent households from scaling or even maintaining small food plots effectively.

Labour shortages also undermine household farming, especially in households affected by illness, youth migration, or gender imbalances. Women-headed homes often carry the agricultural burden, which can be overwhelming without male labour or mechanization support (Mulaudzi *et al.* 2019; Altman *et al.* 2009). Additionally, infrastructure challenges such as poor road access and lack of storage make it difficult for surplus crops to reach local markets. According to Stats SA (2020), poor infrastructure is one of the top barriers to agricultural development in rural communities, ultimately discouraging continued engagement in food production. Field-level evidence from Ndabakazi highlights fencing theft, tractor-hire costs, and bureaucracy as persistent barriers to sustained production, even when inputs are provided (Zantsi and Xaba, 2025). Regionally, studies across South Africa show that as households purchase a larger share of food, the salience of reliable cash income rises, reducing incentives to maintain labour-intensive plots without supportive services (Dzanku, 2024).

2.3.4. Link between household food production and cropland abandonment

The gradual decline in household food production is closely linked to the phenomenon of cropland abandonment. Households that no longer find farming profitable or feasible often let their land lie fallow. Cousins (2015) explains that the high cost of agricultural inputs, coupled with low returns and market access difficulties, leads families to abandon cultivation altogether. This is especially true in areas where young people are disinterested in farming and seek urban employment instead (Fanzo *et al.* 2020). As a result, arable land in rural villages is underutilized, contributing to food insecurity and migration.

Youth disinterest, migration to towns, and the allure of wage jobs accelerate this shift; recent work documents deagrarianisation and the erosion of field cultivation in several Eastern Cape localities (Mkhongi, 2024). In Ndabakazi, long-term abandonment was partially reversed where institutional support aligned with local organisation, suggesting revival is possible when tenure, fencing, traction, and extension are addressed together (Zantsi and Xaba, 2025).

Nationally, new expenditure data confirm that agricultural engagement reshapes household food spending patterns, consistent with own-production buffering purchases — implying that declines in home production can raise food-budget pressure (Shiba *et al*. 2025).

Structural issues such as land tenure insecurity, climate variability, and fragmented agricultural policies further exacerbate cropland abandonment. Without access to secure land titles or long-term investment opportunities, households see little value in continued farming (Aliber and Hall, 2012; Slater, 2020). This detachment from land often results in the erosion of traditional agricultural knowledge and a weakening of communal farming identities. Understanding the factors driving the abandonment of home food production is essential for reversing food insecurity trends in areas like eMzitheni.

2.4. Abandonment of croplands

2.4.1. Economic and labour constraints

Economic viability is one of the foremost factors influencing cropland abandonment. For many households, the costs of inputs such as seeds, fertilizers, and water exceed the potential returns from farming, particularly when markets are distant or prices are unstable (Mmbengwa *et al*. 2011). This economic imbalance discourages continued cultivation, especially when farming is not subsidized or supported by reliable infrastructure. Households often shift focus to alternative income sources, such as social grants or remittances, rather than farming, which is labour-intensive and risky (Altman *et al*. 2009). Case evidence from Ndabakazi shows that even with seed/fertiliser support, the cost and logistics of tractor services and lack of fencing can push fields back into fallow (Zantsi and Xaba, 2025).

At the same time, national consumption studies emphasise households' growing reliance on purchased food, reinforcing the economic calculus to prioritise cash-earning over labour-intensive cultivation unless programmes materially lower production costs (Shiba *et al*., 2025; Dzanku, 2024). Labour shortages further compound the issue. As young people migrate to urban areas in search of employment, the agricultural burden falls on elderly individuals who may lack the physical strength to farm effectively (Slater, 2020). Mulaudzi *et al.* (2019) observed that female-headed households in rural areas often lack both labour and technical support, leading to abandoned land. In some cases, households that once relied on communal labour systems have lost those networks, making solo farming increasingly unfeasible (De Cock *et al*. 2013).

2.4.2. Environmental and climatic factors

Environmental changes, including soil degradation, erratic rainfall, and prolonged droughts, have had a devastating impact on rural agriculture. According to Masipa (2017), climate change is among the leading causes of land abandonment in Eastern and Southern Africa. As rainfall becomes less predictable, traditional rain-fed systems become unreliable, leaving farmers unable to plan planting or harvesting seasons effectively (Fanzo *et al*. 2021). In response, some households choose not to risk their limited resources on uncertain outcomes, opting instead to let fields lie fallow.

Furthermore, land degradation from overuse, lack of crop rotation, and deforestation contributes to declining soil fertility. Without access to fertilizers or agro-ecological knowledge, many smallholder farmers find it nearly impossible to rehabilitate their land. Gwiriri *et al.* (2021) report that the cumulative effect of such environmental stressors leads to a sense of hopelessness among farmers, prompting the decision to abandon agricultural efforts. In Eastern Cape case sites, these environmental stressors have interacted with weak institutions to produce long spells of abandonment; revival efforts worked best where climate risk management and infrastructure (e.g., fencing, water access) were bundled (Zantsi and Xaba, 2025). This loss of productive land exacerbates poverty and reduces local food security, creating a negative feedback loop in vulnerable communities (Aliber and Hart, 2009).

2.4.3. Social and cultural influences

Cultural and generational shifts also play a major role in cropland abandonment. Younger generations in villages like eMzitheni are increasingly disconnected from agricultural traditions. They are more likely to aspire toward formal employment in cities rather than continue subsistence farming, which is often viewed as unprofitable and physically demanding (Kroll *et al*. 2022; Slater, 2020). The loss of interest in farming is not just an economic issue but also a cultural one, signalling a shift in rural identity and lifestyle preferences.

Land tenure insecurity discourages long-term investment in land cultivation. In communal areas, households may not hold formal title deeds, which reduces their willingness to invest in infrastructure like irrigation or fencing (Cousins, 2015). Disputes over land ownership or boundaries further complicate agricultural planning. Van den Berg and Makusha (2020) suggest that without proper land governance and support for youth-led agriculture, the trend of cropland abandonment is likely to persist and even increase in coming years. Qualitative work around Ndabakazi documents similar shifts — households move from land-based to non-farm

and even non-labour livelihoods as grants become central, with field cropping disappearing first and gardens declining later (Mdoda and Aliber, 2015).

2.5. Households' perceptions and attitudes on cropland abandonment

The socio-economic constraints that households in eMzitheni face significantly shape how they perceive the sustainability of continued agricultural production. Recent studies on rain-fed agriculture in the Mnquma and Mbashe Local Municipalities highlight that smallholder farmers frequently discontinue farming due to rising input costs, low profitability, and persistent poverty coupled with unemployment (Christian *et al*. 2020). Many households find that the returns from small-scale crop production fail to cover production expenses, particularly in contexts where land parcels are small and productivity limited. Restricted access to nearby markets further diminishes profitability, discouraging households from remaining in agricultural production and reinforcing perceptions of farming as an unsustainable livelihood option (Christian *et al*. 2020; Dube and Moyo, 2021).

A key barrier to sustained engagement in agriculture is the lack of accessible credit and financial services. Limited access to microfinance, production loans, and formal agricultural credit prevents households from investing in mechanisation, high-quality inputs, or irrigation systems, leaving them trapped in a low-productivity cycle. Consequently, farming is often regarded as a high-risk, low-return enterprise (Katengeza *et al*. 2019; Aliber and Hall, 2020). This dynamic creates a self-reinforcing cycle of economic hardship, where poverty and financial exclusion reduce investment capacity, which in turn perpetuates low output and further discourages agricultural participation (Blair *et al*. 2018; Moyo and Ravhuhali, 2022).

Beyond financial barriers, environmental degradation poses a serious constraint to continued cultivation in eMzitheni. Continuous cropping, poor fallowing, and overgrazing have led to soil erosion, nutrient depletion, and declining fertility, mirroring broader trends in the Eastern Cape's communal areas. Studies by Li *et al.,* (2025) show that soil degradation directly correlates with diminishing yields, a pattern consistent across different agro-ecological regions. Although their work focused on Northeast Guangdong province, similar processes, declining organic matter, compaction, and topsoil loss, are evident in eMzitheni's communal fields (Blair *et al*. 2018; Aliber *et al*. 2023).

Climate variability further compounds these challenges. Increasingly unpredictable rainfall and extended dry periods undermine crop reliability and increase production risk. Han and Song (2021) argue that recurring water scarcity, driven by both climatic shifts and inadequate irrigation infrastructure, compels farmers to reconsider the viability of continued cultivation. Similarly, Magrabi *et al*. (2019) and Ziervogel *et al*. (2022) report that rain-fed systems across the Eastern Cape are especially vulnerable to drought, leading many households to view temporary or permanent agricultural abandonment as a rational adaptation to adverse environmental conditions. Over time, these climatic stressors, when combined with low soil fertility, erode both productivity and household confidence in the future of farming as a sustainable livelihood.

Government policy frameworks also strongly influence household attitudes toward agricultural land use. Blair *et al*. (2018) noted that uncertainty surrounding land reform processes discourages smallholders from making long-term investments in soil conservation or infrastructure. In areas such as Mnquma, unresolved tenure issues and the lingering effects of historical land dispossession undermine perceptions of ownership security and reduce incentives to invest in production (Aliber and Hall, 2020). Further, Moyo and Ravhuhali (2022) found that bureaucratic bottlenecks frequently prevent state agricultural funding and subsidies from reaching the poorest producers. The result is that households most in need of assistance remain excluded from programmes designed to alleviate production costs or improve market access. Similarly, Sihlobo (2023) argues that inconsistent implementation of agricultural support schemes and unfavourable trade policies expose smallholder farmers to volatile market conditions, further diminishing their ability to sustain production.

2.6. Consequences of cropland abandonment on food availability among households

Food availability forms the supply-side foundation of food security, referring to the quantity of food accessible to a household through own-production, market purchases, and transfers (FAO, 2019). For many rural households, especially in smallholder and communal settings, own agricultural production remains the principal source of food. Consequently, the abandonment of cropland has direct implications for household-level food supply and broader community resilience (Blair *et al.,* 2018).

The most immediate effect of cropland abandonment is the decline in self-produced staples such as maize, sorghum, and legumes. In South Africa’s communal areas, field abandonment

has been linked to declining grain self-sufficiency and reduced capacity to maintain household stocks, especially during the lean season (Blair *et al.,* 2018). Similar evidence from Asia and the global South indicates that the loss of active cultivation results in a reduced household food supply and increased dependence on purchased foods, thereby heightening vulnerability to food insecurity (Bista *et al*., 2021; Han *et al*., 2025).

Abandonment often coincides with the neglect of home gardens and intercropping systems that provide dietary diversity and micronutrients. According to Akmal *et al*., (2025), land-use change and field withdrawal, tend to reduce the local availability of nutrient-dense crops — particularly fruits, vegetables, and legumes – thereby compromising household dietary quality. When widespread, cropland abandonment leads to lower aggregate production and reduced local market supply, which can cause price increases for staples and amplify seasonal food shortages. Han *et al*., (2025) estimate that large-scale abandonment can lead to millions of tonnes in potential grain losses globally, underscoring the systemic threat to food availability in poorly integrated rural markets. In South African contexts where transport and storage infrastructure remain weak, these deficits disproportionately affect low-income households (Fischer *et al*., 2023).

As households abandon farming, labour is reallocated toward non-agricultural activities, often in urban areas or informal sectors. While this diversification may improve cash income, it also reduces physical control over food sources and exposes households to market volatility (Deng *et al*., 2021). In regions like the Eastern Cape, where alternative employment is limited, this shift may worsen food insecurity rather than alleviate it (Fischer *et al*., 2023).

Abandoned fields are prone to soil erosion, nutrient depletion, and invasive species encroachment, which further constrain future cultivation (Blair *et al.,* 2018). Over time, this creates a feedback loop where degraded land becomes increasingly difficult to restore, locking households into long-term food deficits (Zheng *et al*., 2023).

Cropland abandonment is often an adaptive response to erratic rainfall and prolonged droughts that make smallholder production risky. Han and Song (2021) highlight that rainfall unpredictability and water scarcity compel farmers to re-evaluate the long-term feasibility of cultivation. In South Africa's Eastern Cape province, recurrent droughts have been shown to precipitate temporary or permanent withdrawal from farming, with consequent declines in staple food availability (Ziervogel *et al.,* 2022). While abandonment is generally associated

with reduced food availability, some research indicates context-dependent outcomes. Deng *et al.* (2021) found that in certain cases, the selective abandonment of marginal plots allowed for productivity improvements on remaining land, potentially offsetting food losses. Moreover, where policies support land restoration or recultivation, abandoned land can contribute to long-term ecological and food system resilience (Zheng *et al*., 2023).

2.7. Theoretical framework

2.7.1. Sustainable livelihoods framework

This study adopts the Sustainable Livelihoods Framework (Figure 2.1) to analyse cropland abandonment. The Sustainable Livelihoods Framework (SLF), developed by DFID (1999) and conceptualised by Scoones (1998), provides a holistic model for analysing how rural households access and mobilise different forms of capital — natural, human, social, physical, and financial — to sustain their livelihoods. A livelihood is sustainable when it can cope with shocks, adapt to stresses, and maintain assets over time (Ellis, 2000).

In the context of cropland abandonment, the SLF helps explain how the erosion or inaccessibility of livelihood assets leads to the withdrawal from agriculture. For example:

- Natural capital depletion (e.g., soil infertility, water scarcity, and drought) makes cultivation less productive (Masipa, 2017).
- Financial capital constraints (e.g., lack of credit, high input costs) limit the ability to sustain farming operations (Zantsi and Bester, 2019).
- Human and social capital—education, skills, and cooperative networks—affect farmers' capacity to adapt and innovate (Aliber and Hart, 2009; Gwiriri *et al*. 2021).
- Weak institutional and physical capital (extension services, mechanisation, and infrastructure) often undermine resilience.

The SLF therefore, situates cropland abandonment as a symptom of livelihood vulnerability, is a coping strategy adopted when agriculture no longer secures food or income. It highlights the importance of strengthening households' asset bases and institutional support systems to prevent further disengagement from farming.

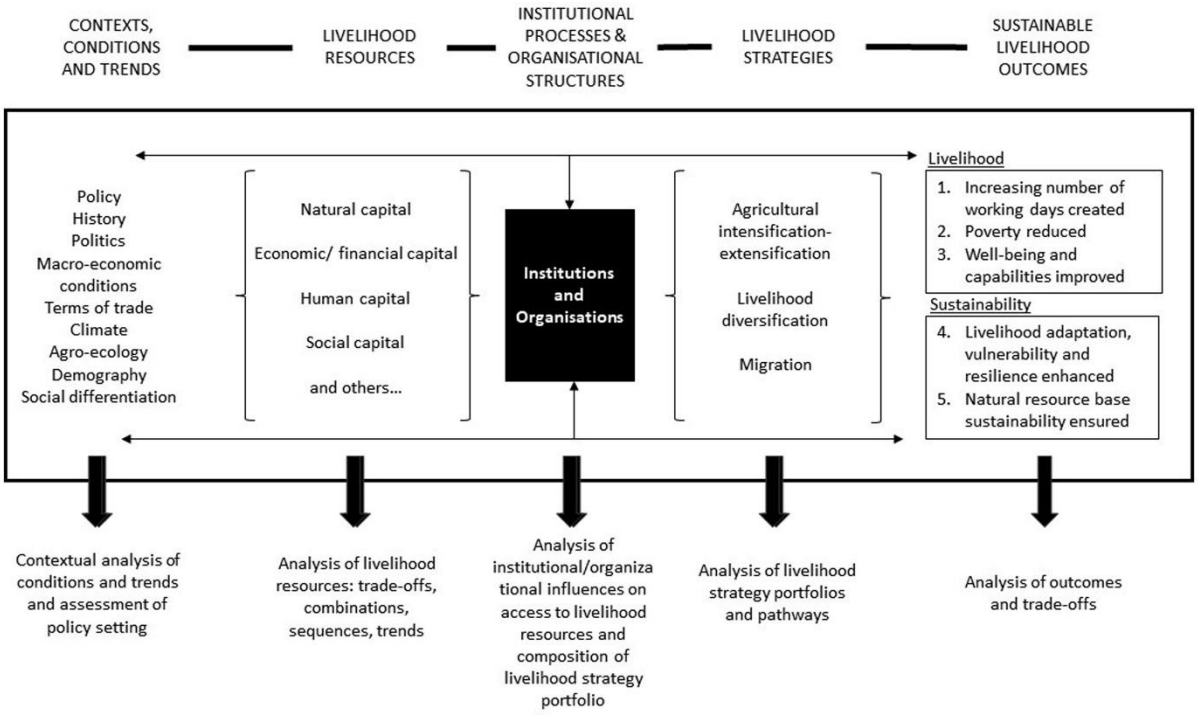

Figure 2. 1: Sustainable rural livelihoods: a framework for analysis

Source: Scoones, 1998

2.7.2. Theory of planned behavior (TPB)

While the SLF focuses on livelihood systems, the theory of planned behaviour (TPB) (Ajzen, 1991) offers a psychological perspective on individual decision-making. TPB posits that a person's behaviour is driven by three core components: attitude toward the behaviour, subjective norms, and perceived behavioural control. These jointly shape behavioural intentions and, ultimately, actions.

Applied to cropland abandonment, the TPB helps explain the micro-level cognitive and social factors influencing a farmer's decision to continue or cease cultivation: If farmers perceive farming as unprofitable, labour-intensive, or less prestigious, their attitudes toward continued cultivation may become negative. Studies in the Eastern Cape province of South Africa show that youth often view farming as a low-status occupation, discouraging engagement (Shackleton *et al.,* 2019) social influence from peers, family, or community leaders shapes behaviour. If the dominant norm shifts toward non-farming livelihoods or migration, individual farmers are more likely to follow suit (Mdoda and Qhapetshu, 2020). When farmers feel constrained by lack of capital, inputs, or state support, they perceive limited control over production outcomes and may abandon cultivation.

TPB thus situates cropland abandonment as a behavioural outcome resulting from changing perceptions, attitudes, and social expectations. Integrating TPB with SLF reveals that not only material deprivation (lack of assets) but also psychological and normative shifts influence the decision to stop farming.

2.7.3. Political ecology theory

The Political ecology theory (PET) offers a broader structural and power-based lens, linking environmental issues to political and economic systems (Blaikie and Brookfield, 2015; Robbins, 2012). PET argues that resource degradation and land-use change are not merely ecological problems, but are deeply embedded in historical inequalities, governance failures, and socio-political dynamics.

In the case of cropland abandonment in South Africa, PET highlights how historical land dispossession, fragmented land tenure systems, and inadequate post-apartheid rural development policies shape farmers' ability and willingness to cultivate. Former homeland areas such as the Transkei and Ciskei are characterised by overcrowded land, weak property rights, and poor agricultural infrastructure (Cousins, 2015). These structural constraints limit local autonomy and discourage investment in long-term cultivation.

Moreover, PET draws attention to how state policies and global economic forces, such as agricultural market liberalisation and declining state support, affect rural livelihoods (Bryant & Bailey, 1997). The failure of government initiatives like CASP, Ilima/Letsema, and Fetsa Tlala to address deep-rooted institutional weaknesses reflects how power relations and policy priorities shape outcomes on the ground (Gwiriri *et al*. 2021). Thus, cropland abandonment can also be seen as a political outcome, reflecting unequal access to resources, policy inefficiencies, and marginalisation of smallholder farmers.

2.8. Conceptual Framework for the factors influencing cropland abandonment

In eMzitheni, a complex interplay of economic, environmental, and socio-political factors influences household decisions regarding agricultural activity and shapes perceptions of farming abandonment as illustrated in Figure 2.2. The economic feasibility of smallholder farming is increasingly undermined by high input costs, declining profitability, and limited access to credit and markets. These challenges constrain households' ability to sustain

production and invest in improved practices (Christian *et al*., 2020; Dube and Moyo, 2021). In many parts of the Eastern Cape province, the cost of seed, fertiliser, and mechanisation services far exceeds the potential revenue from small-scale maize or vegetable production, especially when farm-gate prices are depressed by intermediaries and transport inefficiencies (Aliber and Hall, 2020; Moyo and Ravhuhali, 2022). Consequently, many households perceive farming as economically unsustainable, preferring to diversify into wage labour, informal trade, or social grants to secure livelihoods (Katengeza *et al*., 2019).

Environmental stressors further compound these economic pressures. Water scarcity, erratic rainfall patterns, and declining soil fertility have been widely identified as primary drivers of agricultural decline in rain-fed systems (Blair *et al.,* 2018; Han and Song, 2021). In eMzitheni, prolonged droughts and unreliable rainfall have resulted in reduced yields and increased crop failure risks, discouraging reinvestment in cultivation. The degradation of soil through erosion, nutrient depletion, and overgrazing also undermines land productivity, thereby reinforcing household perceptions that agriculture yields diminishing returns (Li *et al.,* 2025; Ziervogel *et al.,* 2022). These environmental limitations not only diminish farm output but also exacerbate economic vulnerability, trapping households in a cycle of low productivity and limited resilience (Mograbi *et al.,* 2019).

Institutional and policy shortcomings have further accelerated this shift away from farming. Weak state support, uncertain land reform processes, and inconsistent agricultural policies reduce confidence in the long-term viability of farming as a livelihood (Moyo and Ravhuhali, 2022; Aliber and Hall, 2020). Farmers frequently cite limited access to extension services, poor coordination of input-subsidy programmes, and inadequate financial inclusion mechanisms as major deterrents to continued cultivation (Sihlobo, 2023). Similarly, bureaucratic bottlenecks in agricultural funding schemes prevent targeted support from reaching the most vulnerable producers, intensifying household perceptions that government interventions are ineffective or inequitable (Fischer *et al.,* 2023).

As shown in Figure 2.2, cultural and demographic shifts also play a crucial role. As younger generations migrate to urban areas in search of employment and modern livelihoods, the labour force available for farming declines, and traditional agricultural knowledge becomes devalued (Mograbi *et al.,* 2019; Dube and Moyo, 2021). The growing perception that agriculture is a low-status, high-risk occupation contributes to its neglect, particularly among youth (Sibanda and Mutambara, 2023). Over time, this generational disengagement from agriculture erodes

intergenerational knowledge transfer and reinforces the perception of farming as an outdated and economically unviable practice (Blair *et al.*, 2018).

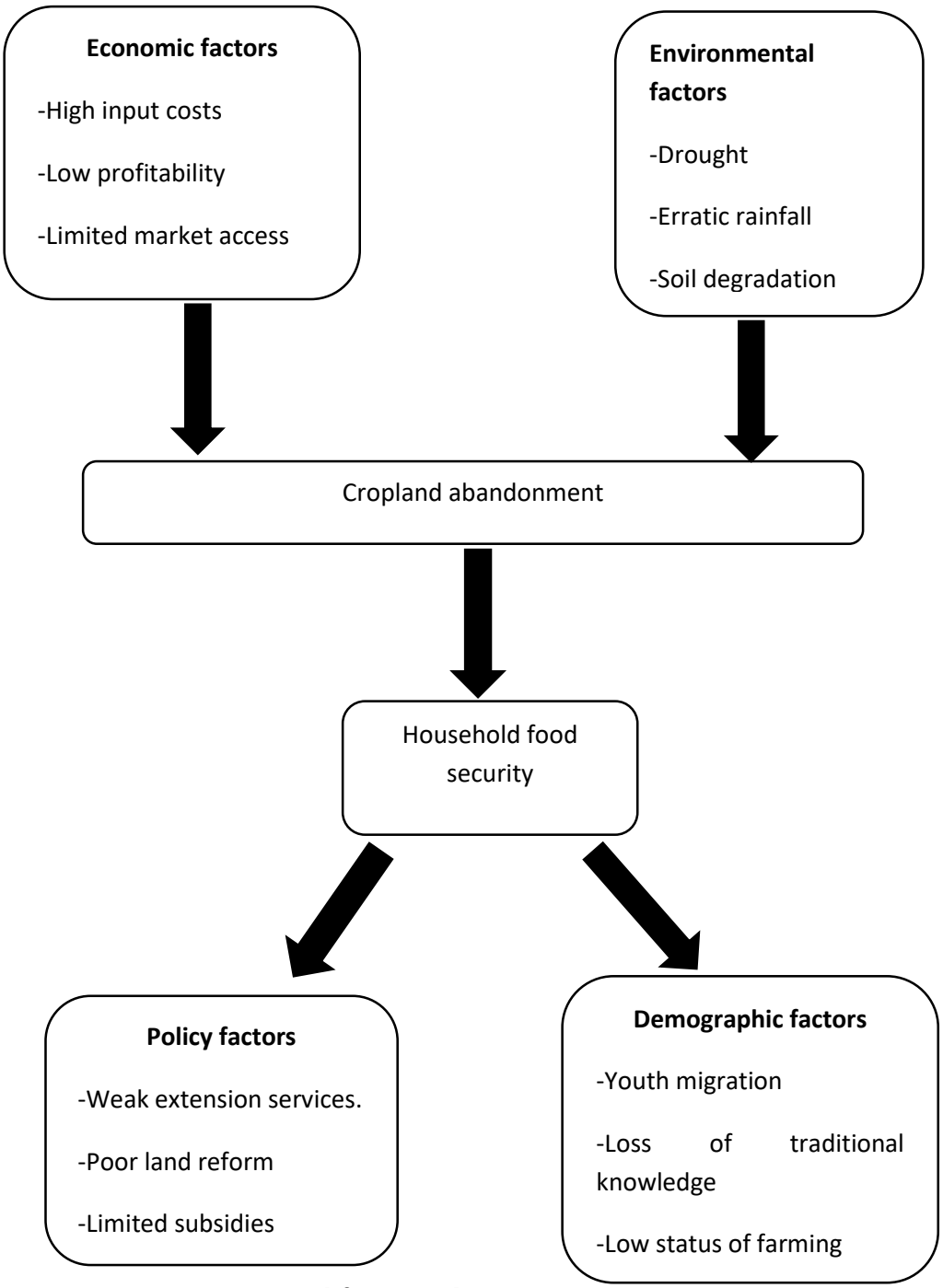

Figure 2. 2: Conceptual framework

Source: Own conceptualization

2.7. Chapter summary

This chapter reviewed existing literature on the factors influencing cropland abandonment and the role of government farming programmes in supporting rural livelihoods. It emphasized that household food production is vital for food security and poverty reduction but is increasingly constrained by limited resources, weak institutional support, climate change, and labour shortages. Cropland abandonment, often driven by economic unviability, environmental stress, and changing cultural attitudes, is further accelerated by youth migration and insecure land tenure. The chapter also examined households' perceptions, attitudes and lived experiences of cropland abandonment and the consequences of cropland abandonment on household food availability. The following chapter, (Chapter 3), sets out the study design, sampling, and analytical approaches used to empirically investigate these relationships.

CHAPTER THREE

METHODOLOGY

3.1. Introduction

This chapter describes the research design and methodological approach used to examine the factors contributing to cropland abandonment among households in eMzitheni, Eastern Cape province, South Africa. A cross-sectional survey design was adopted to collect data at a single point in time, providing a snapshot of household heads' current views and experiences. The study integrated both qualitative and quantitative methods, using structured and semi-structured questionnaires administered in English to gather information on socio-economic characteristics, determinants of cropland abandonment, and perceptions of cropland abandonment by households and the consequences of cropland abandonment on food availability. Data analysis involved the application of descriptive statistics, thematic analysis, and regression models to generate meaningful insights. Ethical standards, including informed consent, confidentiality, anonymity, and voluntary participation, were strictly upheld to maintain the credibility and integrity of the research process.

3.2. Description of the study area

The study was conducted in eMzitheni village in Mnquma Local Municipality in Amathole District in the Eastern Cape province. With 6,562,053 people (12.7% of the total population), the Eastern Cape province is the third biggest in South Africa, after KwaZulu-Natal and Gauteng, which have estimated populations of 10,267,300 people (10.8%) and 12,272,263 million (23.7% of the national total), respectively. There are eight districts and 42 metropolitan municipalities in the province. For most households in this province, agriculture is their primary source of income (Statistics South Africa, 2020). Butterworth, one of the oldest former Transkei towns established in the late 1800s, is located approximately 100 km from East London along the N2 route to Durban. The town falls under the Mnquma Local Municipality within the Amathole District Municipality. It is surrounded by townships, informal settlements, and several villages, including Ndabakazi, which consists of five villages, namely: Ejojweni, Komkhulu, eLengeni, eMzitheni, and Happy Valley. This study was conducted in eMzitheni village. eMzitheni village was selected due to its high prevalence of smallholder farming and visible evidence of cropland underutilisation.

Figure 3. 1: Map of Mnquma Local Municipality

Source: Mnquma.gov.za, 2025

3.3. Research approach

This study adopted a mixed-methods research design that integrated both quantitative and qualitative approaches to examine the factors contributing to cropland abandonment in eMzitheni, Eastern Cape province. The use of this approach enabled the combination of statistical data with in-depth qualitative insights, thereby enhancing the comprehensiveness and depth of the analysis. The quantitative component involved collecting numerical data on the socio-economic characteristics of household heads and households' own food production. Descriptive statistics were utilised to summarise the data, while inferential techniques such as binary and linear regression were applied to identify factors influencing cropland abandonment. In contrast, the qualitative component focused on exploring the perceptions and attitudes of cropland abandonment and the consequences thereof on food availability. Open-ended questions in the questionnaire captured detailed household responses, which were analysed thematically to reveal underlying experiences, attitudes, and perceptions. Through this integration of methods, the study produced both statistically grounded findings and significant contextual insights into the dynamics of smallholder farming in eMzitheni, leading to a more holistic understanding of the issue.

3.4. Research paradigm

This study is grounded in the pragmatic research paradigm, which provides the philosophical foundation for using both qualitative and quantitative research methods to investigate the complex phenomenon of cropland abandonment in eMzitheni Village, Mnquma Local Municipality. Pragmatism is concerned primarily with the practical application of knowledge and focuses on finding workable solutions to real-world problems rather than being confined to any single philosophical or methodological tradition (Creswell and Clark, 2017; Morgan, 2007). It recognizes that truth is not absolute but is instead judged by the usefulness and applicability of ideas in addressing specific contexts and issues (Dewey, 1938).

3.5. Research design

This was a cross-sectional and exploratory study. Additionally, the study used quantitative and qualitative methods. The research design that was used for the study is the Mixed methods approach. Inquiry methods like surveys and experiments are used in quantitative research, according to Apuke (2017), which also involves the collection of data using pre-selected instruments that provide statistical data. Qualitative research was used to achieve objective 4, which was to analyse households' perceptions, attitudes and lived experiences of cropland abandonment, and objective 5, which was to analyse the consequences of cropland abandonment on food availability among households. Surveys were conducted using questionnaires, therefore, farming household heads were the unit of analysis for this research study.

3.6. Sampling procedure and sample size

This study employed a stratified purposive sampling technique, which was well-suited to the mixed-methods design adopted. The sampling framework was designed to achieve broad and meaningful representation of households in eMzitheni by taking into account variables such as geographical distribution, land tenure status, and livelihood patterns. Stratification ensured that important subgroups within the population were adequately represented, while purposive selection allowed the inclusion of participants with relevant experiences and insights on cropland abandonment. This dual approach enabled the collection of complementary quantitative and qualitative data — the former through structured questionnaires and the latter via semi-structured interviews. Ensuring that the sample was both representative and information-rich enhanced the credibility, validity, and dependability of the study's results.

A total of 95 households were sampled from various sections of eMzitheni, where cropland abandonment was visibly evident. This sample size was deemed appropriate for facilitating in-depth qualitative engagement through interviews and ensuring adequate statistical power for quantitative analysis. The determination of the final sample was influenced by practical factors such as time constraints, accessibility, and resource availability, as well as the need to make comparative analyses between households that had abandoned croplands and those that continued active cultivation.

The study initially had a sample of 138 farming households. However, it ended with 95 respondents who participated in the study. The sample size was determined through the use of the Slovin's formula as shown below. The confidence level of 95% was used in the calculation of the sample size with margin of error of 5% (0.05). The target population of 210 household leaders was used.

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

$$= \frac{210}{1+(210)(0.05)^2}$$

$$= 137.70$$

= 138 farming households

The study, however, managed to reach 95 farming households in the study area, due to the study being limited to one village and time constraints due to language barrier.

3.7. Data collection

To comprehensively understand the factors influencing cropland abandonment in eMzitheni, the study relied on primary data collection through a combination of structured household surveys, semi-structured interviews, and focus group discussions. A total of 95 households participated in the research. Structured questionnaires, containing both closed- and open-ended questions, were used to gather detailed information on demographic profiles, socio-economic conditions, farming experience, and household perceptions regarding cropland abandonment.

In addition, semi-structured interviews were carried out with key informants, such as elderly residents, and local community leaders, to gain deeper insights into the historical, socio-economic, and cultural contexts influencing land-use decisions. Focus group discussions were further organized to encourage collective reflection among participants and to corroborate

emerging themes identified from the survey data. Overall, the final sample of 95 households offered adequate representation of the eMzitheni community, thereby ensuring statistical reliability and enabling robust interpretation of both quantitative and qualitative findings.

To verify the validity and efficacy of the questionnaire, 10 farming households first participated in a pre-test. The researchers were able to identify questions that could've led to biased responses and those that were perplexing to respondents, due to feedback from the pre-testing exercise. Researchers and enumerators then reviewed, polished, and distributed the completed questionnaires.

3.8. Data analysis

The study collected household data and analysed it through the use of the Stata version 14 software. Descriptive statistics were used to analyse and present findings for the study. Descriptive analysis includes mean, frequency tables, mode, median, standard deviation, pie charts and bar graphs. Table 1 below summarizes the data required and analytical tools that were used.

Table 3. 1: Summary of study objectives and analytical tools.

Specific objectives	**Data required**	**Analytical tool**
1. To identify socio-economic characteristics of households involved in crop production.	Demographic characteristics (e.g., age, gender, education level, marital status, farming experience, etc.).	Descriptive statistics
2. To identify which households in eMzitheni produce their own food.	Types of food items consumed by households, Crops grown per household, Expenditure on foodstuff consumed.	Descriptive statistics (mean, median, mode, etc.) Frequency and % to distribution across households
3. To identify the factors influencing cropland abandonment in eMzitheni.	Independent variables: Socio-demographic factors (access to market, input costs, land tenure, access to credit, drought, etc.) Dependent variable: (0 = abandonment and 1 = not abandoned)	Logit regression model
4. To analyze households' perceptions, attitudes and lived experiences of cropland abandonment in eMzitheni.	Qualitative interview data	Thematic analysis
5. To analyze the consequences of cropland abandonment on food availability among households.	Qualitative interview data	Thematic analysis

Source: Author's compilation, 2024.

Model specification on the factors influencing cropland abandonment

Binary regression is a model that draws conclusion when dependent variables are binary. This made it suitable and perfect to analyze this objective, as per Table 3.2 below. Respondents were asked if they had completely abandoned their croplands or fields and the possible outcomes were yes (for abandoned) and no (not abandoned). Socioeconomic and demographic characteristics were the independent variables. This made it easier to understand and predict the factors that influenced abandonment of croplands. This model was expressed using the formula below.

$$logit\ (P) = 0\ + B1\ X1\ +\ B2\ X2\ +\ B3\ X3\ (\text{Age}) +\ B4\ X4\ +\ \ldots\ldots\ Bn\ Xn \qquad (3)$$

Logit (P) = Abandonment or non-abandonment of croplands

B_0 = Intercept

$B_1, B_2, B_3 \ldots B_n$ = Coefficients

$X_1, X_2, X_3 \ldots X_n$ = Independent variables (education, experience, gender, income, marital status, etc.).

Table 3. 2: Explanatory variables used in the binary logit model and their expected outcome.

Variable name	**Type of measurement**	**Prior expectations**
Dependent variable		
Abandoned/not abandoned	Binary logistic regression model (No = 0; Yes = 1) (Dummy)	
Independent/ predictor variables		
Age of a farmer	Actual number in years (Continuous)	+
Gender of HH	Farmer's sex (Male = 0; female = 1, prefer not to say=3) (Dummy)	+/-
Marital status	Marital status (categorical)	+/-
Level of education	Level of education (Categorical)	+
Farm status	If the farm operates full time (0) or part time (1)	+
Household size	Total number of individuals living in a unit (Continuous)	+
Major source of income	Categorical (farming =0, employment =1 and pension =2)	+
Average monthly income	Average monthly income of the household	+/-
Access to credit/loan	If a farmer has access or not (Yes = 1; No = 0) (Dummy)	-
Land size	Number of hectares that each household owns (Continuous)	+/-

+/- represents the direction of influence (either positive or negative) **Source**: Author, 2025

3.9. Reliability and validity

In this study, measures were taken to ensure both the validity and reliability of the data collection instrument. Validity refers to the extent to which the questionnaire accurately captures what it is intended to measure. To achieve this, the pre-designed questionnaire was reviewed for face and content validity by the supervisor and other agricultural experts. Reliability, which concerns the consistency of the instrument in producing accurate results,

was also assessed. A pre-test was conducted with 10 farming household heads in eMzitheni prior to the main survey. The test–retest method was applied, where the same respondents completed the questionnaire twice within a two-week interval. The responses were then correlated to calculate the reliability coefficient, and any items identified as unclear by the participants were revised accordingly.

3.10. Ethical consideration

This study ensured informed consent (Appendix A) before data collection and that no harm will be endured by the research participants during the data collection process. The study also adhered to several ethical principles associated with collection of data from human participants, such as confidentiality of data, anonymity of respondents and voluntary participation (Appendix B). Prior to data collection, ethical clearance and approval was obtained from the University of Mpumalanga's research committee (see appendix C for ethical clearance certificate UMP/MORAJANE202125521/SAS/MSC/2024/01). The study considered the following research ethical principles:

The anonymity and confidentiality of participants were strictly maintained throughout the study. This meant that identifying information — such as names or contact numbers—was neither collected nor disclosed. Only proof of participation, indicated by a signed consent form, was kept for record purposes, and this information was not shared with any external parties to uphold confidentiality (Hoft, 2021). Participants were not required to reveal personal details and chose to take part voluntarily by signing the consent form, which validated their participation in the research. Their involvement was limited solely to completing the questionnaires provided.

Voluntary participation and informed consent were fundamental ethical principles observed in this study, ensuring that no participant was coerced into taking part. Each respondent was fully informed about the study's objectives, their expected contribution, and the nature of their involvement before consenting to participate (Bhandari, 2023). The researcher clearly explained the purpose and procedures of the study, after which participants willingly signed consent forms prior to answering the questionnaire.

The principle of non-maleficence — ensuring that participants are not harmed in any way— was also upheld (Varkey, 2020). The study involved only verbal communication and the completion of questionnaires, without any form of physical exertion or exposure to danger. All

interactions took place in familiar, comfortable environments to safeguard the emotional and psychological well-being of participants. As a result, respondents were not subjected to any physical or psychological harm during the research process.

3.11. Chapter summary

This chapter detailed the methodology used to study cropland abandonment and its consequences on food availability among households in eMzitheni village, Mnquma Local Municipality. From a target population of 210 households, 95 were selected through purposive stratification using Slovin's formula. A mixed-methods approach was adopted, with surveys and semi-structured questionnaires providing both quantitative and qualitative data. Descriptive statistics and Logit models were applied using SPSS 29 to analyse household food production, abandonment factors, and perceptions of cropland abandonment by households. Ethical principles — including informed consent, voluntary participation, confidentiality, and beneficence — were observed, with clearance obtained from the University of Mpumalanga's Research Committee.

CHAPTER FOUR

RESULTS AND DISCUSSION

4.1. Introduction

This chapter presents the study's findings derived from the comprehensive array of methodologies detailed in the preceding chapter (Chapter Three). The research questions that guided the study were effectively addressed within this chapter. Additionally, this chapter will proceed to analyse the findings across various dimensions, encompassing the demographic information of the survey respondents, the identification of households that produce their own food in eMzitheni, factors influencing cropland abandonment, perceptions and attitudes of households on cropland abandonment and the consequences of cropland abandonment on food availability.

4.2. Demographics and socio-economic characteristics of households

This section of this chapter focused on the demographic information of all the participants, and their socio-economic characteristics. A sample of 95 participants was interviewed to get an understanding of the dynamics of their livelihoods. The demographics studied included participants' gender, age, marital status, education level, household size, and years of farming experience (Table 4.1).

Table 4. 1: Demographic and socio-economic profile of sampled farming household heads

Variables		**Frequency**	**Percentage**
Gender	Male	44	46%
	Female	51	54%
Farming status	Full time	48	51%
	Part time	47	49%
Membership in a coop	Yes	23	24%
	No	72	76%
	Yes	46	48%

Access to Extension services	No	49		52%	
		Mean	**Std. Dev**	**Min**	**Max**
Respondent's age		54.21	15.95	20	85
Years of farming experience		17.48	13.87	1	60
Number of people in the household		5.07	2.56	1	12
Income from crop sales		R7542,86	3539,57	R0	R254000
Income from livestock sales		R5280,22	1487,74	R0	R83000
Salary/Wages		R20175,82	5948,16	R0	R300000
Social grant		R13327,91	1720,99	R0	R55200
Remittance		R2919,78	1375,61	R0	R120000

Source: Survey, 2025.

4.2.1. Age of household head

The household head's age can be used as a proxy to explain the farmers experience in farming. Age is a critical variable in understanding cropland abandonment because it significantly influences farmers' labour capacity, decision-making, risk perception, and willingness to engage in agricultural production. In rural contexts like eMzitheni, older farmers often dominate agricultural activity due to the outmigration of younger generations to urban areas, resulting in an ageing farming population with declining physical ability to maintain cultivation (Slater, 2020; Mulaudzi *et al*., 2019).

The results in Table 4.1 reveal that youth participation in agriculture is very low in eMzitheni. The average farmers' age is 54 years, with the youngest household head being 20 and the oldest 85 years old. It was discovered during the study that elderly participation in agriculture is largely driven by reliance on farming and old-age grants as their primary means of survival. In contrast, many young people are either pursuing education or migrating to urban areas in search

of formal employment opportunities. The findings revealed that respondents aged between 45 and 55 years are the majority of farmers in eMzitheni, as they feed their families with these agricultural produces, and farming is also their only source of income.

Several studies confirm that youth disengagement from agriculture is a growing concern, driven by aspirations for formal employment, urban migration, and perceptions of farming as an unprofitable or laborious livelihood *(*Sinyolo and Mudhara, 2018; Ngcamu and Chari, 2020). According to Stats SA (2020) and Shackleton *et al.* (2019), the majority of active farmers in former homeland areas fall within the 45–60 age range, as these individuals depend on farming and social grants for survival. Older farmers continue to farm primarily for subsistence, using agriculture as a coping mechanism to supplement limited cash income from old-age pensions (Aliber and Hart, 2009; D'Haese *et al.,* 2013*)*. Conversely, young people are increasingly absent from agricultural activities, preferring educational and employment opportunities in urban centres, which contributes to the aging farming population and rising cropland abandonment (Blair *et al.,* 2018). The dominance of middle-aged and elderly farmers in eMzitheni thus reflects a broader structural shift in rural livelihoods, where agriculture has become a survivalist rather than a generationally sustainable occupation.

4.2.2. Gender of household heads

Gender is an important aspect in a household when it comes to decision-making, especially in rural settings. Gender of the household head is an important variable in this study because it influences access to productive resources, decision-making power, and participation in agricultural activities, all of which affect the likelihood of cropland abandonment. In many rural settings, including eMzitheni, gender roles and inequalities shape how households engage with land and farming systems (FAO, 2019).

Female-headed households often face greater structural constraints in accessing land, credit, extension services, and labour compared to their male counterparts, which can limit their ability to sustain crop production (Makate *et al*., 2019; Doss and Meinzen-Dick, 2020). This marginalisation increases the vulnerability of women farmers to agricultural disengagement, especially when farming becomes economically unviable or physically demanding. Conversely, male-headed households may have greater access to capital and physical assets, allowing them to invest more consistently in agricultural production and land maintenance (Mutenje *et al.,* 2020).

The findings in Table 4.1 reveal that 54% respondents were females and 46% males. The results highlight the participation of both youth and older individuals in agricultural activities within the study area. Interviews revealed that women often engage in farming due to circumstances such as being single parents after the loss of a spouse, having partners who migrated to urban areas for formal employment, or simply being unmarried. These findings align with Kalungu *et al.,* (2013), who noted that women are more actively involved in farming. Their roles are commonly linked to tasks like weeding, planting, and harvesting, while men typically handle responsibilities such as repairing irrigation systems, managing pests and diseases, and caring for larger livestock such as cattle and goats. Women, however, are mainly responsible for smaller livestock, including chickens and ducks.

4.2.3. Farming status

Whether a household head is engaged in full-time or part-time farming, is a crucial variable in understanding cropland abandonment, as it reflects the household's level of commitment, dependency, and investment in agricultural production. Full-time farmers typically rely heavily on farming for their livelihoods, making them more likely to maintain active cultivation and invest in inputs, while part-time farmers may prioritize off-farm income sources and are therefore more prone to land abandonment when faced with production risks or low returns (Jayne *et al*., 2019; Aliber and Hall, 2021).

According to Moyo and Ravhuhali (2022), part-time farming has become increasingly common among smallholder households in South Africa's communal areas, largely due to declining profitability, high input costs, and improved access to non-agricultural employment. This shift has contributed to a gradual deagrarianisation process, where households reduce their agricultural engagement or abandon cropland altogether. Blair *et al.,* (2018) similarly found that when farming becomes a supplementary rather than primary livelihood, land is often left fallow due to limited labour allocation, capital investment, and time availability.

The findings in Table 4.1 reveal that 51% of the respondents were full-time farmers, while 49% were part-time farmers. This near-even distribution suggests a dual livelihood orientation within the eMzitheni village, where some households depend primarily on farming as their main source of income and food, while others engage in agriculture alongside non-farming or off-farm activities. Such a pattern is consistent with national and regional trends in rural South Africa, where smallholder farmers increasingly combine farming with other income-generating

pursuits due to economic insecurity, limited agricultural profitability, and changing livelihood priorities (Aliber and Hart, 2009; Hebinck and Cousins, 2013).

Full-time farmers typically rely on crop and livestock production as their main livelihood source, dedicating most of their time and household labour to agricultural activities. Studies show that full-time farmers often possess greater agricultural experience, access to land, and social networks that support sustained cultivation (Van Averbeke and Mohamed, 2006). However, even full-time farmers in communal areas face challenges such as inadequate access to mechanisation, declining soil fertility, and weak market linkages (Shackleton *et al.*, 2019). These constraints reduce productivity and can increase vulnerability to external shocks like drought or price fluctuations (Masipa, 2017).

In the context of cropland abandonment, full-time farmers are generally more motivated to maintain cultivation but may still abandon fields if returns diminish or support is insufficient. According to Zantsi and Bester (2019), even dedicated full-time farmers in the Eastern Cape province have increasingly left fields fallow due to the high costs of inputs, lack of extension support, and declining profitability.

The finding that nearly half (49%) of the respondents were part-time farmers indicates that many households treat farming as a supplementary livelihood activity, rather than their primary occupation. This reflects a broader trend of livelihood diversification among rural households, as people pursue wage labour, social grants, or small businesses, to sustain their families (Ellis, 2000; Altman *et al.,* 2009). In South Africa's former homelands, such as the Eastern Cape, part-time farming is increasingly common because off-farm income sources are often more reliable than small-scale agriculture, which is exposed to climatic and economic risks (Cousins, 2015; Gwiriri *et al.* 2021).

Part-time farmers typically cultivate smaller plots or engage in seasonal farming when time, labour, or resources allow. As Mmbengwa *et al.* (2011) note, these farmers often lack sustained access to inputs, training, and markets, which affects their productivity and discourages continuous engagement. Consequently, part-time farmers are statistically more likely to abandon croplands when competing livelihood priorities or external shocks make farming less feasible.

4.2.4. Farming experience in years

In this study, variable farming experience measured the number of years a farmer has been engaged in farming. It can be hypothesized that farmers with more experience are likely to allocate resources efficiently and continue to produce. Farming experience, measured in years, is a vital variable in this study because it reflects the accumulated knowledge, skills, and adaptive capacity of household heads in managing agricultural risks and maintaining crop production. Experienced farmers are generally more familiar with local climatic conditions, soil characteristics, and cultivation techniques, which enables them to make better-informed decisions about crop management and resource use (Makate *et al*., 2019; Dube & Moyo, 2021).

According to Blair *et al.,* (2018), farmers with longer experience tend to possess greater resilience and are less likely to abandon their land, as they have developed coping mechanisms to deal with droughts, pests, and market fluctuations. Conversely, inexperienced or younger farmers may lack the technical expertise and institutional support to sustain production under challenging environmental and economic conditions, leading to higher rates of land abandonment (Jayne *et al*., 2019).

The results in Table 4.1 show that the mean value for farming experience in the study area was 17 years with a standard deviation of 13.87. Experience is valuable as it enables individuals to contribute informed opinions and make decisions based on prior knowledge. Findings show that farming household heads possessed considerable farming experience, which was expected to translate into better production outcomes and market participation. Greater experience often motivates farmers to pursue profit-oriented initiatives that can expand their enterprises and enhance earnings (Andaregie *et al*., 2021). This may also encourage them to join cooperatives, thereby gaining access to broader markets and improving marketing skills. Maspaitella *et al.* (2018) further note that collaboration among farmers with varying levels of experience can help address marketing challenges by fostering innovative strategies. Conversely, Mulaudzi *et al*. (2024) argues that long-serving smallholder farmers may resist adopting modern marketing approaches, preferring instead to rely on traditional methods with which they are more familiar.

4.2.5. Marital status of household heads

The marital status of household head is usually used to determine the stability of a household in African families. It is believed that married household heads tend to be more stable in

farming activities than unmarried heads. If this holds true, the marital status of household heads could affect cropland abandonment in the study area. In this study, farming households' marital status was categorsied into four: (1) Married, (2) single, (3) Widowed and (4) Divorced. The results are presented in Figure 5. Marital status of the household head is an important variable in this study because it influences labour availability, decision-making dynamics, and access to economic and social resources that affect agricultural engagement and the likelihood of cropland abandonment. Married household heads often benefit from shared labour, pooled income, and joint decision-making, which can enhance the household's capacity to sustain cultivation (Aliber and Hall, 2021; Dube and Moyo, 2021). In contrast, single, widowed, or divorced household heads may face greater challenges in maintaining cropland due to limited household labour and reduced access to financial or social support networks.

According to Makate *et al*., (2019), marital status affects household resilience and farming intensity, as married farmers tend to invest more in agricultural activities because of household responsibilities and the need to ensure family food security. Similarly, Jayne *et al*., (2019) found that marital status correlates with farm productivity and the ability to withstand economic shocks, since dual-adult households are better positioned to diversify income sources and reinvest in farming.

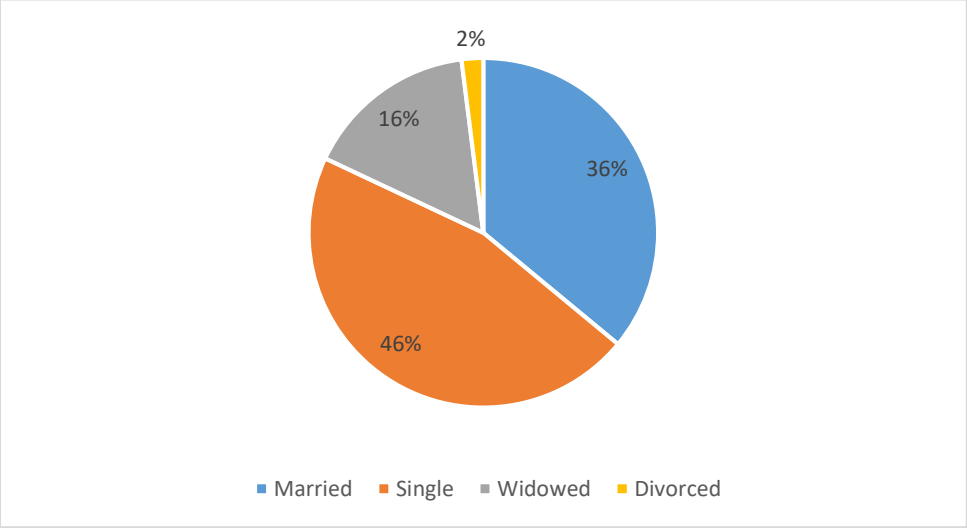

Figure 4. 1: Marital status of household heads in eMzitheni

The results in Figure 4.1 reveal that 36% of the participants were married, and during the interviews it was also discovered that their spouses assisted them in their farming engagements. The study consisted of 46% of single respondents, and some of them had their children and other household members assisting them in the farm in terms of weeding, planting, harvesting

and selling of produce. 16% of the respondents were widowed and only 2% were divorced. According to De Cock *et al.* (2013), married households tend to have greater labour capacity because both partners contribute to agricultural and domestic responsibilities, thereby improving productivity and reducing the likelihood of cropland abandonment. Similarly, Van Averbeke and Mohamed (2006) found that in South African communal areas, married couples frequently pool labour and income resources, which enhances their resilience to farming challenges such as input shortages and climate variability.

The study also found that 46% of respondents were single, many of whom relied on their children or extended family members to assist with farming tasks. This observation is supported by Altman *et al.,* (2009), who notes that in rural South Africa, household members, particularly women and children, form the backbone of agricultural labour, especially in subsistence-oriented systems where hired labour is unaffordable. Family labour remains an essential component of smallholder farming, with intergenerational cooperation ensuring the continuity of agricultural practices (Mulaudzi *et al.,* 2019).

Furthermore, 16% of the respondents were widowed, and 2% divorced, indicating that a smaller proportion of households operate with limited adult labour support. Literature shows that widowhood often leads to decreased farm productivity due to reduced access to physical labour and decision-making power (Doss *et al.,* 2015). In patriarchal rural contexts like the Eastern Cape province, widowed women may face additional challenges such as restricted access to communal land and agricultural inputs (Aliber and Hall, 2012). These constraints can diminish their ability to maintain consistent cultivation and may contribute to the gradual abandonment of cropland.

4.2.6. Respondents' highest level of education

The level of education attained by a household head is important in farming given that it plays a crucial role in the adoption of new technologies. In this study, participants were asked to indicate their level of education based on the categories ranging from no formal education to tertiary education. Figure 4.2 gives a profile of the household educational levels in showing the general literacy levels in the area.

The highest level of education of a household head is a key variable in this study because education shapes farmers' decision-making capacity, adoption of innovations, and access to agricultural information, all of which directly influence the likelihood of cropland

abandonment. Educated farmers are generally more likely to adopt modern farming technologies, access extension services, and apply improved management practices that enhance productivity and reduce the risk of land being left fallow (Makate *et al*. 2019; Gwiriri *et al*. 2021).

According to Aliber and Hall (2021), education enhances human capital, which enables smallholder farmers to engage more effectively with agricultural institutions and markets. Higher educational attainment is associated with better record-keeping, strategic farm planning, and responsiveness to environmental or market changes. In contrast, limited education often restricts access to information and limits participation in formal agricultural programmes, thereby increasing vulnerability to production shocks and discouraging continued cultivation (Moyo and Ravhuhali, 2022).

However, some studies also note a dual effect. Jayne *et al*. (2019) observed that better-educated individuals may be more likely to pursue non-farm employment, which can lead to labour diversion from agriculture and, consequently, higher rates of cropland abandonment. This dynamic is particularly evident in rural South Africa, where youth and educated household heads increasingly prefer wage employment over subsistence farming (Blair *et al.*, 2018).

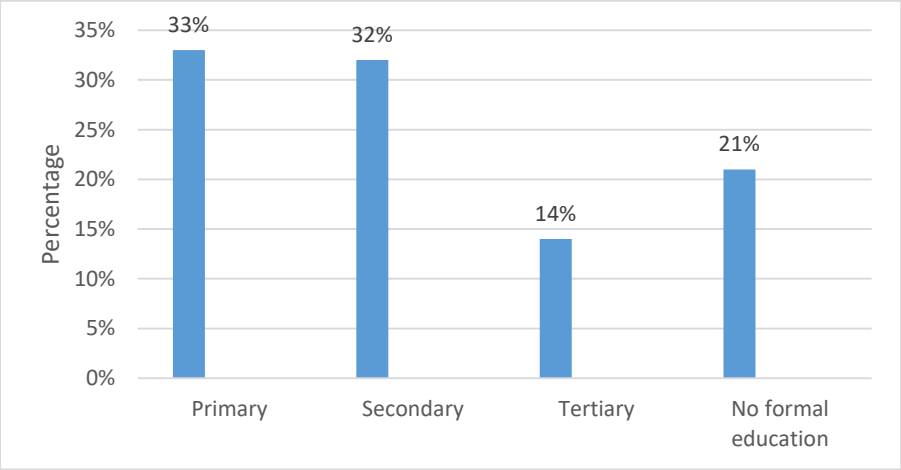

Figure 4. 2: Highest level of education of household heads

The results in Figure 4.2 show a huge percentage of respondents who attained education only up to primary school level, followed by secondary school. Figure 4.2 shows that 33% of the respondents had their highest level of education as primary, 32% had completed secondary education and only 14% had gone up to tertiary level. However, 21% of the respondents did not receive formal education at all. Education is important for the farming household heads to

make informed decisions about their produce and how they can turn their farms into agribusinesses. With enough knowledge, household heads would not only be farming to provide for their families but would collaborate with other farmers and share knowledge on how they can participate in the market and sell their produce to make an income for their homes.

This finding aligns with previous studies showing that limited educational attainment is common among smallholder farmers in South Africa's rural areas and has significant implications for agricultural productivity and decision-making (Aliber and Hart, 2009; Van Averbeke and Mohamed, 2006*)*. Education enhances farmers' ability to access, interpret, and apply agricultural information, adopt new technologies, and engage with markets effectively (Machingura, 2012; Doss, 2018). Farmers with higher education levels are better equipped to manage farm resources efficiently, diversify income sources, and transform subsistence farming into viable agribusiness ventures (Gwiriri *et al.* 2021). Conversely, low education levels often limit awareness of support programmes, record-keeping, and market participation, reinforcing dependence on traditional farming methods and subsistence-level production (Shackleton *et al.* 2019). Therefore, the prevalence of low educational attainment among respondents underscores the need for targeted agricultural extension services and farmer training to build knowledge and business skills necessary for sustainable and market-oriented farming in rural Eastern Cape.

4.2.7. Number of people living in the household

Availability of labour to carry out "labour-intensive" agricultural operations is greatly influenced by household size. In this study, household size was considered as the number of individuals who resides with the respondent. The distribution of respondents by their household size is presented in Table 4.1. Household size is an important variable in this study because it directly affects labour availability, food demand, and resource allocation, all of which influence the likelihood of cropland abandonment among rural households. Larger households typically provide more family labour, which can enhance the capacity to sustain agricultural activities and maintain croplands under cultivation (Aliber and Hall, 2021; Dube and Moyo, 2021). In contrast, smaller households may face labour shortages, especially in labour intensive smallholder systems, making it difficult to continue farming, particularly when mechanisation is limited (Mulaudzi *et al*., 2019).

According to Makate *et al*. (2019), household size is a significant determinant of farm productivity and land-use decisions in smallholder agriculture. Households with more members can divide tasks efficiently, allocate labour to different farming activities, and reduce production costs. Similarly, Jayne *et al*. (2019) note that larger households are more likely to diversify their livelihood strategies, including maintaining subsistence production for food security.

However, the relationship is not always positive. Blair *et al.,* (2018) found that when household dependency ratios are high, such as when most members are children, elderly, or unemployed adults, labour availability for farming may still be low despite a large household size. Moreover, larger households have greater consumption needs, which can strain limited financial and food resources, sometimes leading to prioritisation of off-farm income rather than agricultural production (Moyo and Ravhuhali, 2022).

The results in Table 4.1 revealed that the average household size of households in eMzitheni is 5, with the minimum of 1 person in the house and maximum of 12 people in one household. The findings show that a significant proportion of respondents have relatively large household sizes. Insights from the focus group discussions further revealed that farming is primarily undertaken to secure both food and income for the family. This suggests that the high level of agricultural participation in the study area is largely driven by its dual role as a source of household sustenance and livelihood.

This aligns with findings from other studies in rural South Africa, where extended family structures remain common and household farming is often a collective activity aimed at ensuring both food security and income generation (Aliber and Hart, 2009; Shackleton *et al.*, 2019). Larger households tend to have greater access to family labour, which is crucial for labour-intensive tasks such as planting, weeding, and harvesting, thereby enhancing participation in smallholder agriculture (Van Averbeke and Mohamed, 2006; Gwiriri *et al.* 2021). However, large household sizes also increase food consumption needs, which can create pressure to maintain farming activities for subsistence and to supplement household income. According to Altman *et al.,* (2009), households in former homeland areas frequently rely on agriculture as both a coping and livelihood strategy, especially where formal employment opportunities are scarce. Similarly, D'Haese *et al.,* (2013) note that smallholder farming in South Africa often serves a dual function, providing food for household consumption while generating modest cash income from surplus sales. Therefore, the relatively large household

sizes observed in eMzitheni likely sustain high levels of agricultural engagement, as farming remains a critical livelihood pillar that supports both nutritional and economic needs.

4.2.8. Membership in a cooperative

The study findings revealed that only 24% of respondents are members of agricultural cooperatives, while a significant majority (76%) are not affiliated with any cooperative organisation. This indicates limited participation in collective farming structures within eMzitheni, which has implications for both agricultural productivity and the sustainability of household livelihoods.

Low cooperative membership suggests that most households operate independently, relying on individual resources for production inputs, marketing, and knowledge exchange. This isolation often restricts access to shared infrastructure, bulk purchasing power, and formal market channels, which are key benefits typically associated with cooperative participation (Ortmann and King, 2007; Dube and Moyo, 2021). Cooperatives serve as important vehicles for improving smallholder farmers' bargaining power, market access, and financial inclusion, enabling members to pool risks and resources that would otherwise be unattainable for individuals (Verhofstadt and Maertens, 2015).

In rural South Africa, however, low cooperative membership is a common phenomenon. Studies by Magingxa and Kamara (2003) and Shumeta (2020) attribute this to weak institutional support, lack of trust in cooperative management, and limited awareness of cooperative benefits. Furthermore, bureaucratic inefficiencies and politicisation of local cooperatives have undermined their credibility, discouraging participation (Moyo and Ravhuhali, 2022).

The limited engagement with cooperatives in eMzitheni may also reflect broader socio-economic barriers. Households with low education levels, limited financial capacity, and poor access to information are less likely to join such associations (Ortmann and King, 2007). Additionally, distance to cooperative offices, poor transport infrastructure, and fragmented land ownership patterns may further discourage participation, particularly in sparsely populated rural areas (Aliber and Hall, 2021).

The 24% membership rate, although modest, highlights that a minority of households recognise the potential advantages of cooperative structures. These members may have greater access to

collective resources, extension support, and input subsidies, which could enhance productivity and reduce the likelihood of cropland abandonment. Conversely, the overwhelming 76% non-membership rate underscores a missed opportunity for leveraging group-based support systems to strengthen household resilience and food security.

Encouraging cooperative formation and strengthening existing ones could therefore play a pivotal role in revitalising smallholder farming in eMzitheni. As Verhofstadt and Maertens (2015) argue, effective cooperatives improve not only production outcomes but also social cohesion and local capacity building, both critical for addressing rural development challenges.

4.2.9. Access to extension services

The findings in Table 4.1 revealed that 48% of respondents had access to agricultural extension services, while a slightly higher proportion (52%) reported no access to such support. This uneven distribution suggests that extension service delivery in eMzitheni remains limited and inconsistent, constraining farmers' ability to access technical knowledge, training, and resources necessary for improving productivity and sustaining agricultural engagement.

Extension services are vital for disseminating agricultural innovations, promoting climate-smart farming practices, and providing technical assistance to smallholder farmers (Anderson and Feder, 2007; Davis *et al*., 2020). Access to reliable extension support enhances farmers' awareness of new technologies, crop management techniques, and market opportunities, thereby reducing the likelihood of cropland abandonment (Gwiriri *et al.* 2021). Conversely, the absence of such services can lead to poor decision-making, low yields, and increased vulnerability to environmental and economic shocks, prompting farmers to abandon cultivation altogether (Blair *et al.*, 2018).

The finding that more than half of the respondents (52%) lack access to extension support aligns with national patterns observed across South Africa's communal areas, where extension systems often suffer from staff shortages, inadequate resources, and logistical challenges (Department of Agriculture, Forestry and Fisheries [DAFF], 2017). According to Aliber and Hall (2021), extension officers are frequently overstretched, covering vast geographic areas with limited capacity to offer regular or personalised advice to smallholder farmers.

Moreover, the unequal access to extension services in eMzitheni may also reflect socio-economic and institutional disparities. Farmers with higher education levels, cooperative membership, or stronger social connections tend to have better access to extension support (Makate *et al*., 2019; Moyo and Ravhuhali, 2022). Those without such networks, often poorer or more remote households remain excluded, which perpetuates inequality in farming knowledge and productivity outcomes.

The limited reach of extension services also undermines the success of government initiatives such as the Comprehensive Agricultural Support Programme (CASP) and Ilima/Letsema, which depend on effective extension delivery for implementation (DAFF, 2017). Without regular engagement, farmers struggle to adopt improved inputs, irrigation techniques, or pest management strategies, reducing the overall resilience of smallholder systems.

In the context of eMzitheni, the finding that fewer than half of the farmers benefit from extension services underscores the need for strengthening extension infrastructure, improving staff-to-farmer ratios, and adopting participatory approaches that bring services closer to rural communities. Expanding digital and community-based extension models could help bridge this gap, improving farmers' adaptive capacity and reducing the incidence of cropland abandonment.

4.2.10. Credit uptake and reasons

The findings of this study show that only 20% of respondents had accessed credit in the past 12 months, while a substantial 80% reported not taking any form of loan or credit. This indicates that access to formal and informal credit remains limited among rural households in eMzitheni, which has significant implications for smallholder agricultural productivity and livelihood sustainability.

The main reasons cited by respondents for not taking credit included fear of repayment difficulties due to unemployment, inability to afford high interest rates, and a perceived lack of need for borrowing. These reasons reflect widespread financial insecurity and a cautious attitude toward debt, particularly in low-income, rural contexts where income streams are unstable. Such reluctance is consistent with findings from Aliber and Hall (2021), who observed that many smallholder farmers in South Africa are risk-averse when it comes to borrowing, especially in areas with limited financial literacy and irregular incomes. Similarly,

Dube and Moyo (2021) found that rural households often avoid credit markets because they associate borrowing with potential asset loss or indebtedness.

Among those who did access credit, the majority (68%) took small loans of less than R2,500, while 26% borrowed amounts between R2,501 and R10,000, and only 6% accessed loans exceeding R10,000. These figures illustrate that even among credit users, borrowing capacity is low, suggesting constrained access to formal financial institutions or limited eligibility for larger loans. According to Mago and Hofisi (2016), most smallholder farmers in South Africa rely on informal lending sources, such as stokvels or local savings groups, because formal credit systems often require collateral, credit history, or proof of income that poor rural farmers cannot provide.

Regarding the purpose of credit, the study found that 37% of borrowers used loans for farming-related activities (e.g., purchasing inputs, hiring labour, or repairing equipment), while 63% used credit for non-agricultural household needs, such as food purchases, school fees, or health expenses. This pattern aligns with findings by Ortmann and King (2007) and Moyo and Ravhuhali (2022), who note that rural credit is frequently diverted from productive agricultural uses to immediate consumption needs, especially in contexts of widespread poverty and limited livelihood diversification. The dominance of non-farming credit usage also suggests that agricultural credit systems are either inaccessible or unattractive due to high risks, low returns, and inconsistent support for smallholder farming.

The low rate of credit uptake (20%) highlights a key structural barrier to agricultural revitalisation in eMzitheni. Access to affordable and appropriate credit is critical for enabling smallholder farmers to purchase inputs, adopt improved technologies, and expand production (Katengeza *et al*. 2019; Gwiriri *et al*. 2021). Without it, households remain locked in a cycle of low productivity, limited investment, and eventual cropland abandonment. The findings underscore the need for inclusive financial services, tailored microcredit schemes, and interest-subsidised agricultural loans designed for low-income rural communities.

4.2.11. Land abandonment

The findings on Figure 4.3 revealed that none of the respondents in eMzitheni had completely abandoned their crop fields, indicating that total agricultural disengagement is rare within the community. However, the data showed varying degrees of land-use intensity: 48% of

respondents reported that they had partially abandoned their fields, cultivating only some portions of their land; 22% stated that they actively used all their crop fields; and 30% reported that they did not possess crop fields but maintained home gardens instead. These findings highlight a continuation of agricultural engagement, ranging from full-scale farming to partial or subsistence-level cultivation.

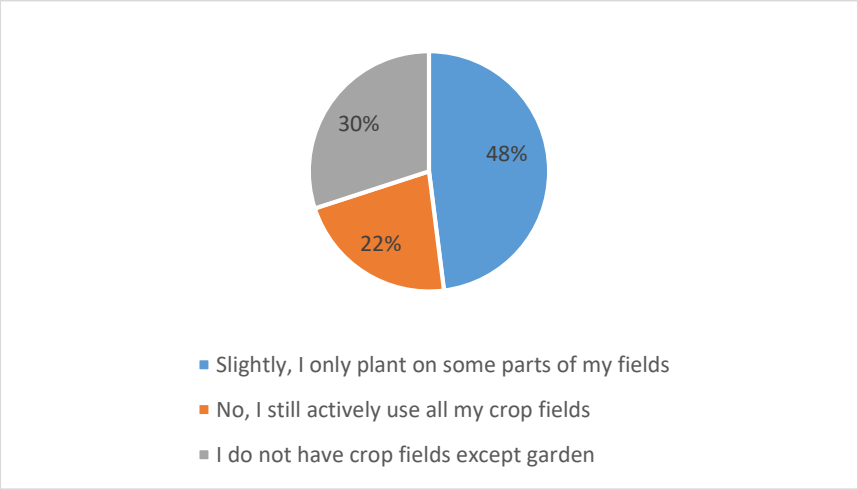

Figure 4. 3: Abandonment of croplands in eMzitheni village

The high proportion of respondents (48%) who reported partial abandonment suggests that many households are struggling to maintain full-scale crop production, likely due to a combination of economic, environmental, and institutional constraints. Similar patterns have been observed in other parts of the Eastern Cape, where households reduce the cultivated area as a coping mechanism in response to rising input costs, water scarcity, and declining soil fertility (Blair *et al.*, 2018; Dube and Moyo, 2021). This "partial farming" phenomenon reflects an adaptive strategy that allows households to maintain some level of food production while minimizing risk and labour costs (Mulaudzi *et al.*, 2019).

The 22% of respondents who still actively cultivate all their fields likely represent households with relatively better access to agricultural resources, such as labour, credit, or extension services, or those with stronger farming motivation and resilience. Studies by Makate *et al.*, (2019) and Gwiriri *et al.*, (2021) suggest that continued full engagement in cultivation is often associated with higher farming experience, access to mechanisation, and participation in cooperatives or community-based farming networks. These households tend to demonstrate stronger adaptive capacity and commitment to maintaining agriculture as a primary livelihood activity.

Meanwhile, the 30% of respondents who rely solely on home gardens reflect a broader trend of de-agrarianisation, where households shift from field-based production to smaller, manageable plots around their homesteads (Fanzo *et al.* 2021; Aliber and Hall, 2021). Home gardens, while smaller in scale, play an essential role in household food security, particularly for vegetable production and daily nutrition (Mulaudzi *et al*. 2019). However, the shift from field cultivation to gardens indicates a contraction in agricultural intensity, which may lead to reduced household food self-sufficiency and greater dependence on purchased food over time (Shiba *et al.* 2025).

Overall, these findings suggest that cropland abandonment in eMzitheni is partial and gradual rather than absolute, aligning with broader rural trends in South Africa's communal areas. The persistence of partial cultivation reflects both the resilience of smallholder farmers, who continue to farm despite constraints, and the structural challenges that limit full agricultural engagement, such as labour shortages, input costs, and unpredictable rainfall (Masipa, 2017; Ziervogel *et al.*, 2022). To sustain production and prevent further abandonment, interventions that enhance access to inputs, mechanisation, and water management systems are critical.

4.2.12. Reasons for abandonment

The data presented in Figure 4.4 illustrate the perceived reasons for cropland abandonment among households in eMzitheni. The results indicate that economic difficulties (63%), migration of the rural population (47%), and insufficient water supply (46%) were identified as the most prominent factors contributing to cropland abandonment. Other notable reasons included lack of infrastructure (37%), soil degradation (33%), aging or lack of labour (29%), and limited access to markets (22%). These findings reveal that both economic and environmental constraints, as well as demographic shifts, play critical roles in shaping farming behaviour and influencing land-use decisions in rural communities.

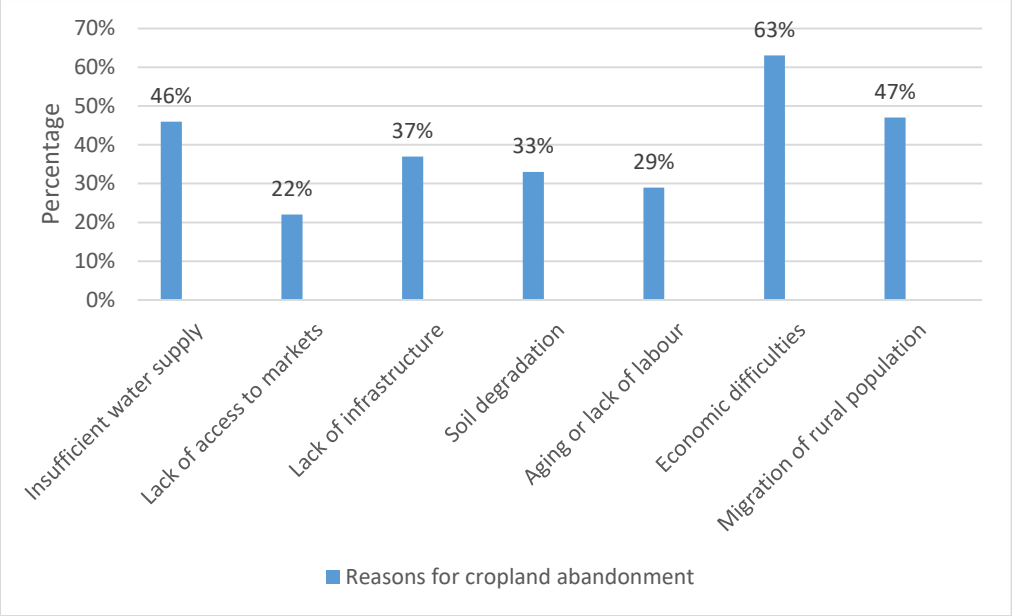

Figure 4. 4: Reasons for cropland abandonment in eMzitheni village

The finding that economic difficulties are the leading driver (63%) aligns with evidence from several South African and international studies which emphasise that smallholder farmers often abandon their fields due to financial insecurity, rising input costs, and low returns on agricultural investment (Blair *et al.*, 2018; Dube and Moyo, 2021). Persistent poverty and high unemployment levels in rural areas limit households' ability to purchase quality seeds, fertilisers, or hire labour, making continued cultivation economically unviable (Christian *et al.*, 2020). As such, farming is increasingly perceived as a high-risk and low-profit activity, leading to gradual disengagement from crop production.

Migration of the rural population (47%) was the second most cited reason for cropland abandonment. Labour migration, particularly of the younger generation to urban areas in search of employment, has significantly reduced the available agricultural workforce in communal villages (Moyo and Ravhuhali, 2022). This demographic trend contributes to the aging of the farming population, leaving elderly individuals unable to maintain large-scale cultivation. Studies in the Eastern Cape and Limpopo provinces have reported similar findings, where youth disinterest in agriculture has led to underutilisation of arable land and partial abandonment (Gwiriri *et al.* 2021; Mulaudzi *et al.* 2019).

Water scarcity (46%) also emerged as a critical constraint, reflecting the semi-arid climatic conditions and poor irrigation infrastructure in the region. The absence of reliable water sources limits productivity and increases the risk of crop failure, particularly under rain-fed systems

(Masipa, 2017). This is consistent with findings from Han and Song (2021), who argue that unpredictable rainfall and prolonged droughts have compelled many rural farmers to reduce cultivation areas or cease farming altogether. The problem is exacerbated by inadequate government investment in small-scale irrigation and water management systems.

The lack of infrastructure (37%) and limited access to markets (22%) further constrain agricultural activity. Poor road networks, storage facilities, and transport systems make it difficult for farmers to sell their produce, thereby reducing profitability and market participation (Ortmann and King, 2007; Aliber and Hall, 2021). This lack of infrastructure not only discourages commercial production but also reinforces the perception that farming is an unsustainable livelihood.

Soil degradation (33%) and aging or lack of labour (29%) were also highlighted as contributing factors. Continuous cultivation without soil conservation measures has led to declining soil fertility, which reduces yields and discourages continued use of cropland (Li *et al.*, 2025). Furthermore, the aging of farmers and the limited involvement of younger family members in farming exacerbate labour shortages, leading to gradual field neglect.

Overall, the findings demonstrate that cropland abandonment in eMzitheni is a multifactorial process driven by a complex interplay of economic stress, environmental degradation, and socio-demographic changes. The evidence supports previous research suggesting that sustainable rural development requires integrated interventions, including improved access to credit, investment in irrigation, youth inclusion in farming, and better infrastructure—to revitalise smallholder agriculture and curb the ongoing decline in land utilisation (Makate *et al.*, 2019; Aliber and Hall, 2021).

4.2.13. Household Income sources in eMzitheni

The findings on household income sources in eMzitheni, presented in Table 4.1 reveal a diversified yet uneven distribution of earnings among rural households. Over the past 12 months, the average household income was derived from salary/wages (R20,175.82), social grants (R13,327.91), crop sales (R7,542.86), livestock sales (R5,280.22), and remittances (R2,919.78). These results highlight the multiplicity of livelihood strategies typical of rural households, where agricultural and non-agricultural income sources coexist, but with varying levels of contribution and stability.

Dominance of Wage and Salary Income

The largest share of household income was R20,175.82 from salaries and wages which indicates that off-farm employment remains the principal source of livelihood for many households in eMzitheni. This pattern reflects a broader trend across rural South Africa, where de-agrarianisation and the shift toward non-farm income have become defining features of rural economies (Aliber and Hall, 2021; Mkhongi, 2024). The dependence on wage income demonstrates both the limited profitability of smallholder farming and the economic necessity of engaging in off-farm labour to sustain household consumption and meet social obligations.

However, reliance on wage income also introduces vulnerability, particularly when employment opportunities are seasonal, low-paying, or geographically distant. According to Dube and Moyo (2021), households relying primarily on wages are more likely to neglect agricultural land, as off-farm work reduces the time and labour available for cultivation, thereby contributing to cropland abandonment.

Social Grants as a Key Livelihood Pillar

The findings also show that social grants contribute significantly (R13,327.91) to household income, underscoring their central role in sustaining rural livelihoods. This aligns with national statistics showing that social assistance, particularly old-age pensions and child support grants, forms a critical income stream in poor rural communities (Stats SA, 2023). Social grants are often used for daily household expenses, food purchases, and schooling costs, with occasional investment in small-scale farming activities (Moyo and Ravhuhali, 2022).

While grants provide crucial income stability, they are not designed for productive investment, and thus their economic impact on agriculture remains limited. As noted by Shiba *et al.,* (2025), many rural households use grants to cushion against poverty rather than as a source of capital for farming. Consequently, the grant-dependent livelihood structure may sustain consumption but does little to promote agricultural revitalisation or rural economic growth.

Agricultural Income: Crop and Livestock Sales

Agricultural activities contributed modestly to total household income, with R7,542.86 from crop sales and R5,280.22 from livestock sales. These figures suggest that farming remains a secondary livelihood activity, primarily geared toward subsistence rather than commercial

purposes. The relatively low income from both crops and livestock reflects structural challenges such as small land sizes, inadequate market access, input shortages, and poor infrastructure (Blair *et al.*, 2018; Zantsi and Xaba, 2025).

Crop sales, although modest, indicate some level of market participation, likely through local informal markets. However, income variability due to rain-fed dependence and limited irrigation constrains the potential for consistent production and sales. Similarly, livestock income, though slightly lower, demonstrates the importance of mixed farming systems in buffering households against crop failure. According to Yobe *et al.,* (2019), livestock serve as both a store of wealth and a risk management tool, often sold during times of financial stress.

Overall, the limited financial returns from agriculture may discourage households from maintaining or expanding cultivated land, leading to gradual cropland abandonment, especially when alternative income sources are more reliable.

Remittances: Declining Yet Supplementary Income

Households also reported receiving an average of R2,919.78 in remittances, reflecting continued, though diminishing, linkages between rural and urban economies. Traditionally, remittances from migrant workers have played a major role in rural livelihoods; however, their contribution has declined due to high urban unemployment and rising living costs in cities (Aliber and Hall, 2021). While remittances can support food purchases and schooling, their low levels in eMzitheni suggest that migration no longer guarantees financial support, limiting households' ability to invest in farming or productive assets.

Implications for Rural Livelihoods and Cropland Abandonment

The income structure observed in eMzitheni reflects a dual livelihood economy, where agriculture coexists with non-agricultural income but plays a diminishing role in household sustenance. The dominance of salaries and grants over agricultural income points to rural livelihood diversification driven by necessity, as households adapt to uncertain farming conditions. However, this shift also implies reduced labour and investment in agriculture, which may accelerate cropland abandonment and undermine local food security (Dube and Moyo, 2021; Blair *et al.*, 2018).

4.3. Food production by households

Own food production, encompassing both crop and livestock farming, plays a vital role in enhancing household food security, income diversification, and rural resilience, particularly in resource-constrained rural settings such as eMzitheni. The production of food for household consumption allows families to meet their nutritional needs, reduce dependence on external food markets, and mitigate the effects of poverty and price shocks.

Contribution to Food Security and Nutrition

Household-level food production directly contributes to food availability and dietary diversity. By producing staples such as maize, beans, spinach, and cabbage, households ensure consistent access to essential food items without relying solely on market purchases. This is particularly important in rural South Africa, where food prices and unemployment rates remain high (Aliber and Hall, 2021). According to Fanzo *et al.,* (2021), self-produced food improves dietary quality by providing access to fresh, diverse, and nutrient-rich foods, especially vegetables and animal proteins that may otherwise be unaffordable. In this way, own food production acts as a buffer against food insecurity, especially during periods of economic hardship or environmental stress.

Income Diversification and Economic Stability

Beyond direct consumption, surplus crops and livestock products (e.g., eggs, milk, meat, vegetables) can be sold, providing a supplementary income stream. This diversification of income reduces household vulnerability to financial shocks and supports broader livelihood security (Makate *et al.,* 2019). Dube and Moyo (2021) note that households engaging in both crop and livestock farming are better positioned to withstand risks such as drought, pest outbreaks, or market fluctuations because they do not depend on a single income source. Furthermore, livestock often serve as a form of rural savings or capital, which can be liquidated during crises to pay for food, education, or health costs (Yobe *et al.* 2019).

Social and Cultural Significance

In many South African rural communities, own food production is embedded in social and cultural practices. Livestock ownership, in particular, is linked to status, identity, and community participation (Shackleton *et al.,* 2019). Animals such as cattle and goats are used

in traditional ceremonies, marriages, and as symbols of wealth, underscoring their non-monetary importance. Moreover, the intergenerational transmission of farming knowledge reinforces community cohesion and cultural continuity, ensuring that traditional agricultural practices remain integral to rural livelihoods.

Environmental and Sustainability Implications

Own food production, especially when managed using traditional, low-input methods, can contribute to agroecological sustainability. Integrated crop-livestock systems promote nutrient cycling, soil fertility, and diversified farm output (Gwiriri *et al.* 2021). For instance, livestock manure can be used as an organic fertiliser for crop fields, while crop residues can serve as animal feed, creating a mutually reinforcing relationship that enhances long-term productivity. However, unsustainable practices such as overgrazing, continuous cropping, and poor land management can lead to soil degradation and reduced yields, which threaten both environmental and food system stability (Li *et al.* 2025).

Implications for Policy and Rural Development

The persistence of household food production underscores the need for policy interventions that strengthen smallholder agriculture. Providing access to irrigation, extension services, and affordable credit can help households expand production, improve productivity, and reduce reliance on purchased food (Ortmann and King, 2007; Moyo and Ravhuhali, 2022). Encouraging agro-processing and local market development can also increase profitability, making smallholder farming a more sustainable livelihood option.

4.3.1. Crops grown by households

The results presented in Figure 4.5 show the distribution of major crops cultivated by households in eMzitheni. The findings reveal that maize (72%) was the most widely grown crop, followed by spinach (66%), cabbage (53%), potato (47%), and beans (45%). Other crops grown in smaller proportions included pumpkin (36%), onion (34%), butternut (24%), carrot (17%), pepper (15%), and tomato (12%). These statistics indicate that crop production in the study area is dominated by staple and vegetable crops, reflecting a strong orientation toward subsistence food production and household-level consumption rather than commercial farming.

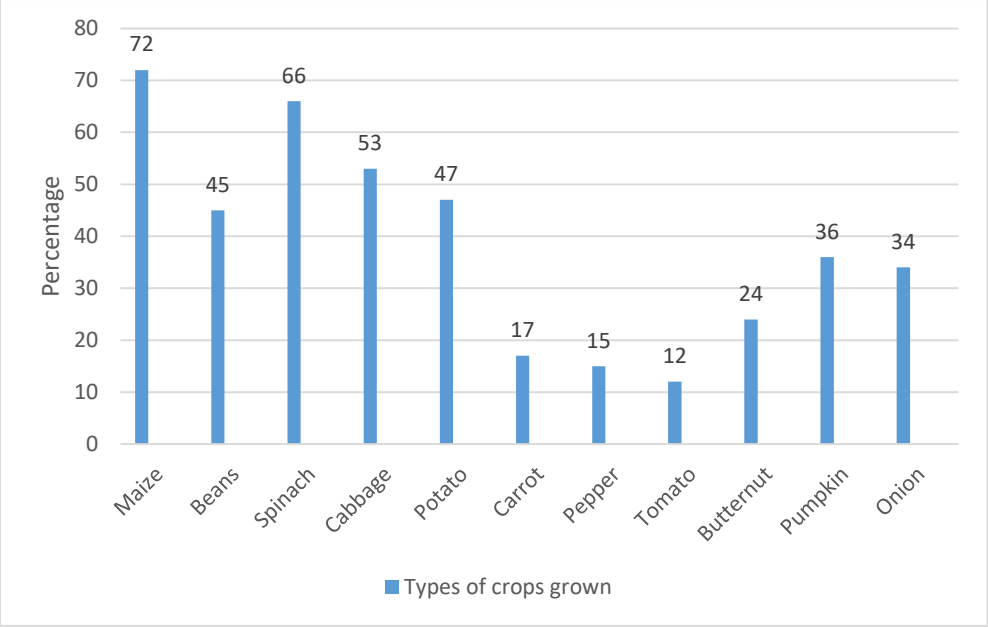

Figure 4. 5: Types of crops grown by households in eMzitheni in 2025

The dominance of maize highlights its role as a staple food crop and an essential component of food security in rural South Africa. Maize is widely cultivated due to its adaptability to local climatic conditions, its role as a dietary staple, and its relatively low input requirements (Fanzo *et al.*, 2021; Dube and Moyo, 2021). In many rural households, maize forms the foundation of daily meals, either as maize meal or porridge, and its cultivation significantly contributes to reducing dependency on purchased food. This pattern aligns with findings by Shiba *et al.*, (2025), who noted that smallholder farmers in the Eastern Cape continue to prioritise maize due to its cultural, economic, and food security significance.

The high prevalence of spinach (66%) and cabbage (53%) production underscores the importance of leafy vegetables in improving dietary diversity and household nutrition. These vegetables are essential sources of vitamins and minerals and can be harvested multiple times within a season, providing a continuous food supply (Fanzo *et al.*, 2021). Households often consume these vegetables directly, with any surplus sold locally, indicating that horticultural production plays a dual role in nutrition and income generation. Similarly, potatoes (47%) and beans (45%) are important components of the local diet, providing carbohydrates and proteins respectively, thereby contributing to balanced household nutrition (Makate *et al.*, 2019).

Crops such as pumpkins (36%), onions (34%), butternut (24%), and tomatoes (12%) are mainly produced for domestic use and local market exchange. These crops diversify household diets and support year-round food availability, especially when combined with home garden

production. The inclusion of these crops in smallholder systems aligns with findings by Aliber and Hall (2021), who argue that crop diversification is a key resilience strategy among rural households to buffer against climatic variability and market fluctuations. However, the lower production levels of carrots (17%), peppers (15%), and tomatoes (12%) may reflect challenges such as limited access to irrigation, high input costs, and pest management constraints, which are common barriers in small-scale vegetable farming (Gwiriri *et al.* 2021).

In terms of consumption patterns, most households reported consuming what they produced, particularly staples and vegetables, which form the basis of household diets. This reflects a subsistence-oriented production system in which farming primarily serves to meet domestic food needs rather than generate income. Such systems are typical in rural South Africa, where market access is limited, and households rely heavily on their own production to secure food (Blair *et al.*, 2018). The combination of staple crops and horticultural produce thus enhances both food quantity and quality, while helping households mitigate the effects of economic instability and rising food prices (Moyo and Ravhuhali, 2022).

4.3.2. Livestock ownership

The results presented in Figure 4.6 show the types of livestock kept by households in eMzitheni. The findings indicate that pigs (44%) were the most commonly owned livestock, followed by chickens (40%), cattle (37%), goats (37%), and sheep (32%). These results demonstrate that livestock farming forms an important component of household livelihoods in eMzitheni, complementing crop cultivation by providing food, income, and draught power.

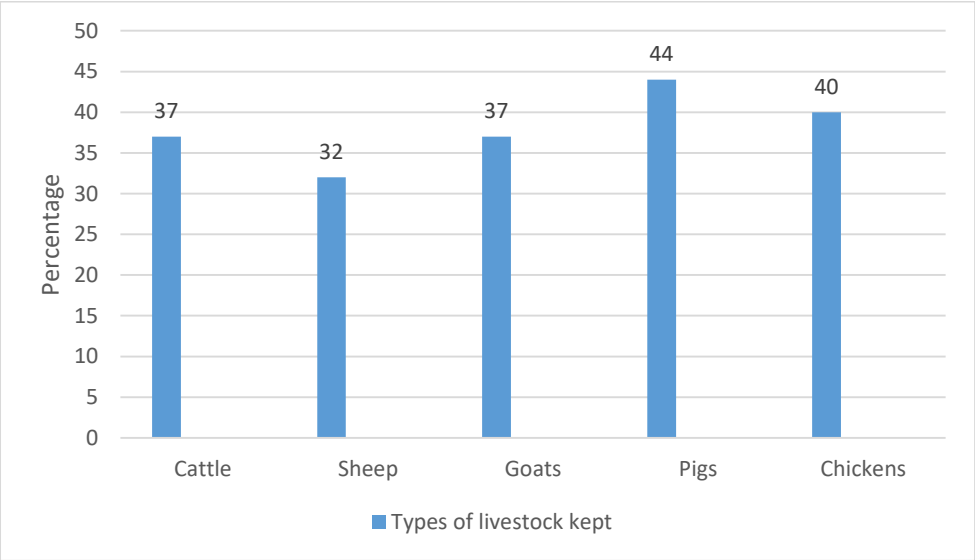

Figure 4. 6: Types of livestock kept by households in eMzitheni in 2025

The relatively high ownership of cattle and goats (both 37%) suggests that livestock production plays both economic and functional roles in sustaining rural livelihoods. Cattle ownership, in particular, has practical implications for agricultural labour and land-use sustainability, as it provides animal traction, a traditional and affordable means of ploughing and transporting produce. The use of animal traction can substantially reduce cropland abandonment by lowering dependence on costly mechanised services such as tractors, which are often unaffordable or inaccessible to smallholder farmers (Mmbengwa *et al.*, 2011; Zantsi and Xaba, 2025). In many parts of the Eastern Cape, the shortage of draught power has been identified as one of the leading causes of cropland neglect (Blair *et al.*, 2018). Thus, households owning cattle or donkeys are more likely to maintain cultivation because they can prepare land without incurring external costs.

The ownership of goats and sheep also contributes indirectly to sustaining agricultural systems. While these animals are not typically used for traction, they provide income through sales and manure for soil fertility enhancement, which can support continued cultivation (Moyo and Ravhuhali, 2022). Goats and sheep are relatively resilient under harsh climatic conditions, making them important assets for diversifying livelihoods and reducing vulnerability to droughts and crop failures (Yobe *et al.* 2019).

The high proportion of pigs (44%) and chickens (40%) reflects the significance of small livestock in ensuring household food security and nutrition. These animals provide easily accessible sources of protein and can be sold to generate cash for household needs. According to Fanzo *et al.*, (2021), small livestock farming enhances dietary diversity and provides a reliable income stream, particularly for women-headed households, who often manage poultry and piggery projects. However, since pigs and chickens are not used for traction, their role in directly influencing land cultivation is limited, they mainly serve a subsistence and income-support function rather than addressing constraints related to cropland abandonment.

The findings highlight a critical linkage between livestock ownership and cropland use. Households that own cattle are better positioned to plough their fields regularly, maintain productivity, and avoid the gradual abandonment of arable land. Conversely, households without access to livestock traction often struggle to prepare land in time for planting seasons, leading to partial or complete field abandonment (Dube and Moyo, 2021). This pattern has been widely documented in communal areas across South Africa, where mechanisation programmes often fail to reach small-scale farmers, and traditional draught power remains a

key determinant of continued agricultural engagement (Zantsi and Bester, 2019; Blair *et al.*, 2018).

4.4. Household expenditure on food

The findings of this study reveal distinct patterns of household expenditure in eMzitheni, reflecting both economic priorities and livelihood strategies among rural households. On average, respondents reported spending R14,296.70 on groceries, R6,492.31 on farming, R4,230.51 on funerals, R2,218.68 on entertainment, and R2,052.20 on savings in the last 12 months. These figures suggest that most household income is directed toward basic consumption needs and social obligations, with comparatively limited expenditure allocated to productive or investment-related activities such as farming and savings.

4.4.1. High Expenditure on Groceries

The largest share of household spending which was R14,296.70 was on groceries, this indicates a heavy dependence on purchased food, despite some households engaging in crop or livestock production. This pattern is consistent with national findings showing that rural households increasingly rely on food purchases due to declining agricultural activity, small land sizes, and inconsistent yields (Shiba *et al.*, 2025). Such dependence highlights a shift from subsistence-based to market-dependent food systems, which can increase vulnerability to food price fluctuations and economic shocks (Dube and Moyo, 2021).

In contexts like eMzitheni, where smallholder agriculture is constrained by limited access to irrigation, inputs, and extension services, households often find it easier or more reliable to purchase food than to produce it (Blair *et al.*, 2018). This reliance, however, can erode food self-sufficiency and exacerbate food insecurity, particularly when income sources are unstable.

4.4.2. Moderate Expenditure on Farming

An average annual expenditure of R6,492.31 on farming suggests that while some households remain engaged in crop and livestock production, investment levels are modest. Limited financial commitment to farming often reflects constrained capital access and low expected returns from small-scale agriculture (Aliber and Hall, 2021). Many rural households rely on social grants or informal employment, which restricts their ability to purchase inputs such as seeds, fertiliser, and fencing materials (Moyo and Ravhuhali, 2022).

According to Makate *et al.*, (2019), smallholder farmers tend to underinvest in agriculture when faced with unpredictable weather conditions, limited access to credit, and high production costs. This moderate spending pattern in eMzitheni thus mirrors broader challenges faced by communal farmers across South Africa, where financial and institutional barriers inhibit agricultural reinvestment, ultimately contributing to partial or full cropland abandonment.

4.4.3. Significant Expenditure on Funerals

The reported average expenditure of R4,230.51 on funerals underscores the cultural and social significance of burial practices in rural communities. In South Africa, funerals are not only family obligations but also important social events that reinforce community cohesion and cultural identity (Posel *et al.*, 2020). Expenditure on funerals often takes precedence over economic investments because of societal expectations and the importance of maintaining dignity in death.

However, such high spending on non-productive social functions can strain household budgets and divert funds away from agricultural reinvestment or savings (Aliber and Hall, 2021). This pattern illustrates how social obligations may indirectly contribute to agricultural decline, as households prioritise social expenditures over farming.

4.4.4. Limited Spending on Entertainment and Savings

The relatively low expenditure on entertainment (R2,218.68) and savings (R2,052.20) reflects the limited disposable income available to most rural households. These figures highlight the financial precarity that characterises many smallholder communities, where income is often used for immediate survival rather than long-term accumulation or recreation (Yobe *et al.* 2019). The minimal savings also point to the absence of formal financial inclusion, as many households lack access to reliable banking or credit systems, forcing them to depend on informal saving mechanisms such as stokvels or livestock assets (Mmbengwa *et al.* 2011).

Low savings capacity has important implications for agricultural sustainability: without financial reserves, households struggle to recover from production shocks, replace inputs, or expand operations. As Gwiriri *et al.*, (2021) note, liquidity constraints are among the most persistent barriers to the adoption of improved agricultural practices and technologies.

4.4.5. Implications for Rural Livelihoods and Cropland Abandonment

Overall, the household expenditure data suggest that economic vulnerability and competing financial priorities shape livelihood choices in eMzitheni. The dominance of consumption-related expenses (especially groceries and funerals) over productive investment (farming and savings) implies that agriculture is increasingly seen as a secondary or supplementary livelihood, not the main economic pillar. This aligns with findings from the Eastern Cape, where households often rely more on social grants and wage remittances than on farming, contributing to de-agrarianisation and cropland abandonment (Blair *et al.*, 2018; Mkhongi, 2024).

4.5. Factors influencing cropland abandonment

Table 4.2 presents the results of a binary logistic regression (logit model), examining the factors influencing cropland abandonment among farming households in eMzitheni village, Eastern Cape province. The dependent variable was whether a household had abandoned its cropland (coded as 1 = abandoned, 0 = not abandoned). The analysis included socio-economic, demographic, and technological variables to determine their influence on the likelihood of cropland abandonment. The results indicate that most independent variables were statistically insignificant ($p > 0.05$), suggesting that no single demographic or socioeconomic characteristic overwhelmingly determines cropland abandonment in isolation. However, one variable, smartphone ownership, was statistically significant ($p = 0.007$) and positively associated with cropland abandonment. The constant term ($p = 0.003$) was also significant, indicating that even in the absence of other explanatory variables, a baseline tendency toward cropland abandonment exists among households.

Table 4. 2: Factors influencing cropland abandonment in eMzitheini

Variable	**Coefficient**	**Standard error**	**p-value**
Farming status	.124	.180	0.490
Farming experience (years)	-.000	.007	0.976
Age (years)	-.012	.008	0.137
Gender	.170	.184	0.358
Marital status	-.171	.123	0.171

Highest education level	-.133	.108	0.221
Household size	-.013	.036	0.703
Electricity access	.134	.481	0.781
Cellphone ownership	-.249	.438	0.571
Smartphone ownership	.559	.203	0.007
Constant	3.010	.969	0.003

Source: Author's compilation, 2025.

4.5.1 Farming status

Farming status ($p = 0.490$, $\beta = 0.125$) - the coefficient for this parameter was positive but statistically insignificant, implying that being an active farmer does not significantly reduce or increase the likelihood of cropland abandonment. This may suggest that while some households continue small-scale farming, it is often intermittent and low intensity, with many shifting to alternative income sources (Christian *et al.* 2020; Dube and Moyo, 2021). Prior research in Mnquma and Mbashe, similarly found that farming engagement alone does not ensure land utilization due to limited profitability and poor input access.

4.5.2 Farming experience

Farming experience ($p = 0.976$, $\beta = –0.0002$) showed a negative but highly insignificant relationship with cropland abandonment, implying that longer experience does not significantly influence decisions to continue or stop cultivation. Although prior studies suggest that experienced farmers tend to sustain farming activities longer (Blair *et al.* 2018), the current finding may reflect structural barriers such as poor market access, climate stress, and low mechanization that undermine the benefits of experience (Moyo and Ravhuhali, 2022).

4.5.3 Age of household heads

Age ($p = 0.137$, $\beta = –0.0127$) was negatively associated with cropland abandonment, although not statistically significant. This suggests that older farmers are less likely to abandon cultivation, possibly due to their stronger attachment to agricultural traditions and land stewardship (Mograbi *et al.* 2019). Younger generations, by contrast, are increasingly disengaged from agriculture due to urban migration and perceived low returns (Sibanda and Mutambara, 2023).

4.5.4 Gender

The positive but insignificant coefficient of gender ($p = 0.358$, $\beta = 0.171$) indicated that gender differences do not significantly influence cropland abandonment. Although literature often highlights that female-headed households face resource constraints leading to lower land use intensity (Dube and Moyo, 2021; Blair *et al.* 2018), the absence of a significant gender effect here may suggest that both male and female farmers in eMzitheni experience similar structural barriers, such as lack of credit and extension services (Moyo and Ravhuhali, 2022).

4.5.5 Marital status

The coefficient of marital status ($p = 0.171$, $\beta = –0.171$) was negative but not significant, implying that married individuals are slightly less likely to abandon cropland, possibly due to larger household labour pools and joint decision-making. This is consistent with findings by Aliber and Hall (2020), who observed that marital households often have more stability and shared investment in agricultural activities. However, the weak significance suggests that marriage alone is insufficient to overcome broader economic and infrastructural challenges affecting farming continuity.

4.5.6 Education level

Education ($p = 0.221$, $\beta = –0.133$) showed a negative, non-significant relationship with cropland abandonment, suggesting that higher education marginally reduces the likelihood of land abandonment. This may reflect that educated individuals are more aware of improved farming techniques or climate adaptation measures (Han and Song, 2021). However, contradictory evidence exists, better-educated individuals may prefer non-agricultural employment, leading to land neglect (Mograbi *et al.* 2019). Hence, the influence of education on farming decisions appears context dependent.

4.5.7 Household size

Household size had a negative but insignificant coefficient ($p = 0.703$, $\beta = –0.014$), implying that larger families are marginally less likely to abandon cropland, likely because of increased labour availability. This finding aligns with earlier observations that household labour influences land use intensity (Dube and Moyo, 2021). However, the lack of significance suggests that labour availability alone does not guarantee active cultivation without adequate financial capital and equipment.

4.5.8 Electricity access

The positive but insignificant relationship ($p = 0.781$, $\beta = 0.134$) of access to electricity indicates that having access to electricity does not significantly affect cropland abandonment. This may suggest that electrification, while improving living standards, does not directly translate into increased agricultural productivity unless linked to irrigation or processing facilities (Sihlobo, 2023).

4.5.9 Cellphone ownership

The negative but insignificant coefficient ($p = 0.571$, $\beta = –0.249$) suggests that basic cellphone ownership may slightly reduce cropland abandonment, possibly by improving information flow about markets or weather conditions. However, the lack of statistical significance indicates that basic mobile access alone is not transformative in promoting active farming (Moyo and Ravhuhali, 2022).

4.5.10 Smartphone ownership

Smartphone ownership ($p = 0.007$, $\beta = 0.560$) was statistically significant ($p < 0.01$) and positively associated with cropland abandonment. This suggests that households with smartphones are more likely to abandon cultivation. A possible interpretation is that smartphone access may facilitate exposure to non-agricultural opportunities (urban jobs, remittance networks, or social grants) and shift aspirations away from farming (Sibanda and Mutambara, 2023). This finding aligns with studies indicating that digital connectivity can promote livelihood diversification but may simultaneously reduce engagement in traditional agriculture (Dube and Moyo, 2021). Conversely, other scholars argue that digital technology can enhance agricultural participation through access to price information and mobile-based extension services (Han and Song, 2021), suggesting that the relationship may depend on how smartphones are used.

4.6. Households' perceptions, attitudes and lived experiences of croplands abandonment

During the data collection process, the researchers were able to gather 23 farming household heads for a focus group discussion to obtain this qualitative data. Most households in eMzitheni perceive cropland abandonment as an unavoidable response to economic hardship and environmental constraints. Respondents commonly cited financial limitations, rising input costs, and unpredictable rainfall as the key barriers to maintaining active cultivation. Many

participants expressed that crop production had become "too expensive to sustain" or “not worth the effort”, especially when market returns were low and government support minimal.

This perception is consistent with findings from Christian *et al.*, (2020), who observed that smallholder farmers in Mnquma and Mbashe municipalities often regard farming as a high-risk and low-return activity. Similarly, Blair *et al.*, (2018) noted that the increasing cost of fertilizers, seed, and labour, combined with poor access to extension services, fosters disillusionment with agriculture. Households in eMzitheni expressed similar sentiments, linking agricultural disengagement to persistent poverty, limited market access, and unreliable state assistance.

Furthermore, perceptions of land productivity have shifted. Several respondents described their fields as “no longer fertile” due to soil degradation and erosion. These environmental perceptions are supported by broader regional studies, such as those of Han and Song (2021) and Ziervogel, New and Chinvenga (2022), who highlight how climate variability and declining soil quality reduce the viability of rain-fed smallholder systems in the Eastern Cape. As a result, cropland abandonment is seen as a rational adaptation strategy to deteriorating environmental and economic conditions.

While many households expressed regret over leaving their land fallow, attitudes toward farming are increasingly ambivalent and pragmatic. Older respondents often conveyed nostalgia and emotional attachment to farming as part of cultural identity, while younger members viewed it as laborious, unprofitable, and outdated. This generational divide mirrors findings by Mograbi *et al.*, (2019) and Sibanda and Mutambara (2023), who argue that youth attitudes toward agriculture are shaped by perceptions of prestige, mobility, and economic opportunity outside farming.

Some respondents viewed cropland abandonment as a temporary measure, contingent on improved access to capital or rainfall recovery, while others considered it permanent, driven by a lack of motivation or migration to urban centres. Attitudinal differences also reflected gendered experiences: women often expressed frustration over their limited decision-making power and access to land or inputs, consistent with Dube and Moyo (2021) and Moyo and Ravhuhali (2022), who identified gender inequalities as major barriers to sustainable land use.

Overall, these attitudes reflect a shift from subsistence-oriented optimism to cautious disengagement. Where farming once symbolised resilience and self-sufficiency, it is now increasingly associated with risk, uncertainty, and limited returns. However, this shift is not purely negative; some households expressed relief that land abandonment allowed them to pursue wage employment or social grant opportunities, which they perceived as more stable income sources.

The lived experiences of cropland abandonment in eMzitheni revealed both economic vulnerability and social adaptation. Many participants described the initial years after abandonment as marked by food insecurity and a loss of independence, as households became more reliant on purchased food or remittances. This resonates with the work of Aliber and Hall (2020), who found that agricultural disengagement can deepen dependence on social grants, especially among rural households in South Africa's former homelands.

However, over time, some households adapted by diversifying livelihoods, engaging in petty trade, livestock keeping, and casual labour. Randela *et al.,* (2021) and Fischer *et al.,* (2023) also observed this pattern, where smallholders transition from crop-based subsistence to multi-income survival strategies, balancing farming with non-farm work to reduce risk.

Emotionally, participants reported mixed feelings about leaving land idle. Older farmers often described a sense of loss and shame, reflecting the deep cultural association between land and identity. In contrast, younger respondents viewed abandonment as liberation from unprofitable work, signalling evolving social meanings of rural life. This aligns with Dube and Moyo (2021), who argue that agricultural withdrawal in post-apartheid rural contexts can simultaneously represent economic decline and social transformation.

Furthermore, households emphasized the lack of institutional support as a lived frustration. Respondents described failed promises of agricultural subsidies and difficulties accessing extension services, echoing national critiques of ineffective smallholder support policies (Moyo and Ravhuhali, 2022; Sihlobo, 2023). This absence of assistance reinforced feelings of neglect and hopelessness regarding the future of farming.

4.7. The consequences of cropland abandonment on food availability among households

The majority of households in eMzitheni reported that cropland abandonment has diminished their ability to produce staple foods, particularly maize, beans, and vegetables, which were once the main sources of household nutrition. Prior to abandonment, even small harvests contributed to self-provisioning, enabling households to reduce expenditure on basic food items. However, as more fields lie fallow, families increasingly purchase food from local shops, often at higher prices and with lower nutritional quality.

This pattern mirrors findings by Aliber and Hall (2020) and Dube and Moyo (2021), who observed that rural households withdrawing from crop production face rising dependency on market-based food systems, making them more vulnerable to price fluctuations and income instability. In eMzitheni, the decline in self-sufficiency is particularly concerning given the high unemployment rate and limited wage income opportunities. Consequently, even moderate food price increases can significantly affect household consumption levels.

The loss of own-produced food also erodes traditional reciprocal food-sharing networks within the community. Respondents reported fewer opportunities for exchanging surplus produce or engaging in communal storage, practices that historically strengthened social resilience. This breakdown of social exchange systems reinforces the individualization of food insecurity, as each household must now rely on cash rather than collective support.

Households reported a growing dependence on government social grants and remittances to meet food needs. According to the income data (see Table 4.1 on income sources), social grants are the second-largest income source after wages and salaries, highlighting the critical welfare safety net in the absence of productive agriculture. Respondents emphasized that monthly grants are used primarily for purchasing maize meal, vegetables, and cooking oil, indicating that agricultural decline has transformed consumption patterns from self-produced to purchased staples.

While grants provide short-term relief, they are insufficient to ensure dietary adequacy or stability, especially in larger households. This aligns with findings by Fischer *et al.*, (2023) and Randela *et al.*, (2021), who observed that grant-dependent households often experience seasonal food shortages and lower dietary.

4.8. Chapter summary

This chapter reported the survey performance, sample profile, and key empirical findings for eMzitheni. The study achieved a 68.8% response rate (95/138), which is acceptable by survey standards and comparable to similar agricultural household studies. Production systems were mixed: maize remained the anchor crop alongside widely grown vegetables (spinach, cabbage, potatoes), while livestock portfolios were diversified, especially pigs and chickens, with cattle, goats and sheep also present, signalling risk-spreading under rain-fed, resource-constrained conditions. Income data showed households relied primarily on wages/salaries and social grants.

The logit model of cropland abandonment found most household and resource variables statistically insignificant; however, smartphone ownership was positively associated with abandonment ($p = 0.007$), plausibly capturing exposure to non-farm opportunities and livelihood diversification. Qualitative results deepened this picture: households framed abandonment as a pragmatic response to high input costs, weak profitability, unreliable rainfall, and limited institutional support, with older farmers expressing attachment to land and younger members favouring off-farm pathways. The next chapter synthesizes these findings into conclusions and actionable recommendations for strengthening household food availability and reducing cropland abandonment in eMzitheni.

CHAPTER 5

SUMMARY, CONCLUSIONS & RECOMMENDATIONS

5.1. Introduction

This research was carried out in eMzitheni village, located in the Eastern Cape province of South Africa, with the primary goal of examining the factors contributing to cropland abandonment. The study pursued five specific objectives: to identify socio-economic characteristics of households in eMzitheni involved in crop production, to identify households engaged in own-food production, to determine the factors leading to cropland abandonment in eMzitheni, to analyse households' perceptions, attitudes and lived experiences of cropland abandonment and the consequences of cropland abandonment on food availability among households. A mixed-method approach anchored in a descriptive survey design was used for data collection. A total of 95 farming households were selected through purposive stratification as respondents, and data were gathered through structured and semi-structured questionnaires. The collected data were analysed using both descriptive and inferential statistical techniques with the aid of SPSS version 29 software.

5.2. Summary of the study

The research on cropland abandonment in eMzitheni village was conducted through a mixed-methods approach, integrating both quantitative and qualitative methodologies to capture the multifaceted nature of rural agricultural decline. A cross-sectional survey design was employed to collect data from 95 households, selected through stratified purposive sampling to ensure diversity across demographic and livelihood characteristics. Structured questionnaires gathered quantitative data on socio-economic factors, land use, and household food production, while semi-structured interviews and focus group discussions provided qualitative insights into household perceptions, attitudes, and lived experiences of cropland abandonment. Prior to the main data collection, the questionnaire was pre-tested to ensure validity and reliability, and ethical clearance was obtained from the University of Mpumalanga.

Quantitative data were analysed using SPSS software, employing descriptive statistics to profile households and binary logistic regression to identify determinants of cropland abandonment. Qualitative data from interviews and focus groups were subjected to thematic analysis, allowing the researcher to interpret the underlying reasons, perceptions, and consequences associated with agricultural disengagement. The study area, eMzitheni village in

Mnquma Local Municipality, Eastern Cape, was selected due to its high prevalence of smallholder farming and visible evidence of cropland underutilisation.

By integrating both data types, the research provided a comprehensive and context-specific analysis of the social, economic, and environmental factors influencing land abandonment and its impact on household food security. Quantitative findings established measurable relationships between variables such as age, education, and access to services, while qualitative narratives illuminated deeper community experiences and constraints. This methodological combination ensured that the study not only identified statistical trends but also captured the lived realities shaping agricultural practices in eMzitheni village.

From 95 surveyed households, farming in eMzitheni is predominantly undertaken by women (54%) and older adults (mean age 54), with substantial experience (mean 17 years) and larger households (mean 5 members). Livelihoods show a dual orientation: 51% full-time vs 49% part-time farmers. Production is mainly subsistence-leaning, centred on maize and common vegetables (spinach, cabbage, potatoes), alongside diversified livestock holdings, especially pigs and chickens, as risk-spreading assets. Cash income portfolios are dominated by wages/salaries and social grants, while crop and livestock sales contribute modestly. Regression results indicated that most demographic and resource variables were not significant predictors of cropland abandonment; however, smartphone ownership showed a positive, significant association with abandonment ($p = 0.007$), suggesting links to non-farm opportunities and changing aspirations. Qualitative evidence underscores that households view abandonment as a pragmatic response to high input costs, weak profitability, rainfall uncertainty, and limited institutional support; consequences include reduced self-provisioning, greater reliance on purchased foods and grants, and erosion of reciprocal sharing networks, heightening vulnerability to price and climate shocks.

5.3. Conclusion

This study set out to investigate the complex phenomenon of cropland abandonment in eMzitheni village, Eastern Cape, through a mixed-methods approach that combined quantitative and qualitative evidence. The overarching aim was to understand the socio-economic and environmental drivers behind agricultural disengagement and its implications for rural food security. The findings reveal that cropland abandonment is not a singular process

but a multifaceted outcome shaped by economic hardship, labour shortages, institutional weaknesses, and changing household priorities.

Research Question 1: What are the socio-economic characteristics of households involved in crop production in eMzitheni village?

The study found that households in eMzitheni are predominantly low-income, with limited access to productive resources and essential services. Most household heads were middle-aged or elderly, with relatively low levels of formal education. A majority of respondents were unemployed, relying heavily on social grants and remittances as their main sources of income. Only a small proportion were members of cooperatives or had access to extension services. These socio-economic conditions significantly constrain households' ability to invest in or sustain crop production (Christian *et al*., 2020; Blair *et al.*, 2018).

Research Question 2: Which households in eMzitheni produce their own food?

The results indicated that households producing their own food tended to be those with access to small plots or home gardens, rather than extensive croplands. About 30% reported relying mainly on garden cultivation, while others practiced partial cropping on abandoned fields. These households primarily grew staples such as maize, beans, and vegetables for self-consumption. The findings underscore the continuing importance of subsistence production for food security, despite declining engagement in large-scale field cultivation (Fanzo *et al.*, 2021; Mulaudzi *et al*., 2019).

Research Question 3: What are the factors influencing cropland abandonment in eMzitheni?

Multiple interrelated factors emerged as contributors to cropland abandonment. High input costs, limited access to credit**,** labour shortages, and climatic challenges, especially erratic rainfall and drought, were the most frequently cited drivers. Institutional weaknesses, such as the absence of reliable extension services and poor market access, further discouraged cultivation. Socio-demographic factors like ageing farmers**,** youth migration, and gendered labour burdens also contributed to reduced farming activity. Regression results showed that variables such as smartphone ownership were positively associated with active farming, suggesting the potential of digital connectivity for improving agricultural engagement (Zantsi and Bester, 2019; Masipa, 2017).

Research Question 4: What are the households' perceptions, attitudes, and lived experiences of cropland abandonment in eMzitheni?

Households generally perceived farming as a high-risk, low-return activity, constrained by limited institutional support and poor profitability. Many viewed abandonment as a rational adaptation to harsh economic and environmental realities. Qualitative findings revealed feelings of disillusionment and dependency, as some households shifted towards non-agricultural livelihoods or social grants**.** Older residents expressed regret over the decline in communal farming culture, while youth often regarded agriculture as an undesirable occupation. This demonstrates a shift in livelihood aspirations from land-based to cash-based systems (Shackleton *et al.,* 2019; Moyo and Ravhuhali, 2022).

Research Question 5: What are the consequences of cropland abandonment on food availability among households?

The study revealed that cropland abandonment has led to a decline in household-level food self-sufficiency, increasing reliance on purchased food. This shift has heightened vulnerability to food price fluctuations and reduced access to diverse diets. Furthermore, land degradation and soil erosion on unused fields have decreased the long-term potential for re-cultivation. In areas where households maintained gardens or livestock, food availability remained relatively stable, underscoring the importance of integrated crop-livestock systems for resilience (Blair *et al.,* 2018; Han *et al.,* 2025).

In conclusion, the study demonstrates that cropland abandonment in eMzitheni is driven by a combination of economic, institutional, environmental, and socio-cultural factors, all of which interact to shape household decisions regarding land use. The erosion of agricultural livelihoods has profound implications for food security**,** rural sustainability, and intergenerational continuity in farming knowledge**.** Reviving smallholder production in such contexts requires holistic policy interventions**,** including improved access to inputs and credit, revitalized extension services, land tenure security, and youth engagement in agriculture.

Ultimately, addressing cropland abandonment in eMzitheni and similar rural communities will not only strengthen local food systems but also contribute to broader national goals of poverty alleviation, employment creation, and sustainable rural development**.**

5.4. Recommendations for policy

A number of suggestions were made in light of the study's findings to help farming households, policymakers, and development professionals manage cropland abandonment. The study's primary results and conclusions support the following recommendations:

5.4.1 Rural infrastructure investment

The government, through the Department of Rural Development and Land Reform (DRDALR) and local municipalities, should prioritise rural infrastructure investment, especially road rehabilitation, small-scale irrigation schemes, and storage facilities. Improved market linkages will reduce post-harvest losses, enhance profitability, and incentivise continued land cultivation.

5.4.2 Provision of rural credit scheme

Government ought to introduce targeted rural credit schemes and input subsidy programmes tailored to communal farmers. Public-private partnerships with microfinance institutions and cooperatives could expand credit coverage and offer low-interest loans. Extension officers should help farmers with financial literacy and enterprise management to ensure sustainable use of funds.

5.4.3 Provision of climate smart subsidy

Implementation of climate-smart agriculture initiatives that will promote drought-tolerant crops, soil conservation, water harvesting, and agroecological techniques. Training farmers in integrated soil fertility management, mulching and intercropping can improve yields and resilience. Investment in community-level irrigation and rainwater harvesting infrastructure should also be prioritised.

5.4.4 Strengthening and decentralizing agricultural extension services

Government ought to strengthen the agricultural extension system by increasing staffing levels, mobility and community outreach. Extension services should be decentralized to village levels and incorporate participatory learning approaches that blend indigenous knowledge with scientific methods. Digital platforms and smartphone-based advisory tools can improve communication and technical support in remote areas.

5.4.5 Enhancing land tenure security and post-settlement support

Government should accelerate land tenure clarification and registration in communal areas to provide farmers with secure, transferable use rights. This will encourage investment in fencing, irrigation, and conservation. Land reform policies must move beyond redistribution to ensure post-settlement support, including mentorship and access to production inputs.

5.4.6 Promoting youth and gender empowerment

Launch youth-oriented agricultural empowerment programmes, including skills training, start-up grants, and incubation projects in crop and livestock farming. Promote gender-inclusive policies that enhance women's access to land, finance, and training. Schools and TVET colleges should integrate agribusiness education to reposition farming as a viable career.

In addition to empowering youth and women in agriculture, abandoned but still arable land in eMzitheni and similar rural areas should be rehabilitated and brought back into productive use through community-driven initiatives. This can be achieved by establishing land rehabilitation programmes, including communal ploughing schemes, conservation agriculture projects, and reforestation of degraded areas, supported by government and local development agencies. Such interventions would not only restore land productivity but also create employment opportunities, particularly for rural youth and women.

Traditional leaders, chiefs, and tribal authorities have a critical role to play in coordinating these efforts, as they are custodians of communal land. Their involvement is essential for mediating land use conflicts, identifying abandoned parcels, and facilitating equitable access to land for motivated young and female farmers. Chiefs and tribal councils can also mobilize community participation in land restoration activities and ensure transparent allocation of reclaimed land for productive purposes.

Moreover, government should provide fencing support and land protection infrastructure to secure rehabilitated fields from livestock intrusion and theft. Fencing subsidies or communal fencing programmes could significantly encourage households to reinvest in farming and safeguard their produce. Integrating these measures with youth-oriented agricultural empowerment programmes, start-up grants, and agribusiness incubation projects would ensure that reclaimed land is not only restored but also utilized sustainably for both crop and livestock production.

5.5. Study limitations

The study did not employ drone imagery, satellite data, or remote sensing techniques to map and quantify the spatial extent or patterns of land abandonment. As a result, the analysis relied solely on self-reported and observational data from households, which may not fully capture the geographical distribution, temporal dynamics, or intensity of abandonment. The research was confined to a micro-level analysis within eMzitheni village, which provides rich contextual understanding but limits the external validity of the findings. Socio-economic, environmental,

and institutional conditions vary widely across the Eastern Cape and other provinces, meaning the patterns observed in eMzitheni may not be directly generalisable to other communal areas.

This study adopted a cross-sectional design, capturing data at a single point in time. While effective for identifying correlations and immediate factors influencing cropland abandonment, it does not account for longitudinal changes or seasonal variations in land-use behaviour. Although the study aimed to include 138 households, only 95 respondents ultimately participated due to time constraints, language barriers, and accessibility challenges. This smaller sample size, while sufficient for descriptive and regression analysis, may limit statistical power and reduce the representativeness of the findings for the wider population of Mnquma Municipality.

Much of the information on farming practices, income, and land use was based on self-reported responses, which may be subject to recall bias or social desirability effects. Respondents might have over- or under-reported certain aspects of their farming activities, land abandonment decisions, or household food production.

5.6. Suggested areas for future research

Building on the findings of this study, several areas warrant further investigation to deepen understanding of cropland abandonment and inform more effective interventions in eMzitheni and similar rural contexts:

Future research should adopt long-term, longitudinal designs to track changes in land-use patterns, household livelihoods, and agricultural behaviour over time. Such studies would reveal the temporal dynamics of cropland abandonment and re-cultivation — distinguishing between temporary fallowing and permanent disengagement. Longitudinal analysis would also enable researchers to assess the effects of climate variability, migration trends, and policy interventions on farming persistence or withdrawal. Integrating geospatial technologies, such as remote sensing, drone imagery, and GIS, would allow for accurate mapping and quantification of abandoned cropland. Spatial data could be combined with household-level information to identify hotspots of abandonment, assess land degradation, and monitor vegetation recovery or encroachment. This approach would enhance precision and facilitate evidence-based planning for land restoration and agricultural revitalisation programmes.

Further research should assess the effectiveness of agricultural support programmes, such as Ilima/Letsema, CASP, and Fetsa Tlala**,** in curbing land abandonment and improving smallholder resilience. Evaluating how policy design, implementation, and institutional coordination influence household farming decisions would help refine strategies for inclusive and sustainable rural development. Mixed-method policy evaluation frameworks could bridge the gap between community realities and institutional performance. Given the observed ageing farmer population and youth disinterest in agriculture, future studies should focus on the socio-cultural and economic factors that influence young people's and women's participation in farming. Research could explore innovative approaches to youth empowerment, agripreneurship, and gender-responsive support mechanisms that make farming more attractive, profitable, and socially valued in rural communities.

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APPENDICES

Appendix A: Informed consent

An Inquiry into Factors Influencing Croplands Abandonment by Households in eMzitheni Village, Eastern Cape

CONSENT SLOT

Dear participant,

I would like to request your voluntary participation in the study on the topic indicated above. As you agree to participate in this study, please note that you are free to withdraw from the study at any given point in time you feel like withdrawing. Your views and responses will be treated with strict secrecy and confidence. Furthermore, your identification will not be revealed at any point in time. The information you provide to us as you participate in this study will be used for the writing of a thesis and/or for publications.

Signature of participant: ……. Date: …….....

Name of the investigator: …….....

Signature of the investigator: ……. Date: ……...

RESEACHERS

This research project involves two researchers, namely:

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INSTRUCTIONS

1. From the questionnaire items below, tick (√) in the appropriate box with the answer you want to give.
2. Tick (√) one box per item.

Appendix B: Questionnaire

QUESTIONNAIRE

Topic: **An inquiry into factors influencing croplands abandonment by households in eMzitheni village, Eastern Cape**

Dear participant

The purpose of the questionnaire is to collect data that would help to investigate the abandonment of arable crop lands and government efforts to revamp arable crop lands for food security in rural communities in the Eastern Cape. Thank you for assisting us with this important information. Anonymity will always be preserved, and the data collected for this study will be kept private. You may opt out of this study at any time; participation is entirely optional.

Yours faithfully

Researcher: Lerato Mary-Gold Morajane

Tel (work): 013 002 0269

Mobile: 0636368415

E-mail: 202125521@ump.ac.za

Instructions for completion

1. Please answer all questions honestly
2. You are allowed to tick more than one box, where applicable

Interview No
District municipality
Local municipality
Village
Date

SECTION A: DEMOGRAPHICS AND SOCIO-ECONOMIC STATUS OF HOUSEHOLD HEADS

A.1. Are you a full-time or part-time farmer?

Full-time ☐ Part-time ☐

A.2 How long have you been farming ☐ years?

A.4. What is your age ☐ years?

A.5.What is your gender?

1 = Male ☐ 0 = Female ☐ 2 = Prefer not to say ☐

A.6. What is your marital status?

1 = Single ☐ 2 = Married ☐ 3 = Widowed ☐ 4 = Divorced ☐

A.7.What is the highest level of education you have completed?

0 = No formal education ☐ 1= Primary ☐ 2 = Secondary ☐ 3 = Tertiary ☐

Other specify) ……

A.8. How many people living on the household, including yourself?.....

A.9. How many houses does this household have?.....

A.10. Do you have electricity? (Y/N).....

A.11. Do you have a cellphone? (Y/N).....

If yes, is it a smartphone? (Y/N).....

If it is a smartphone, what do you use it for?.....

Use	**Y/N**
Online banking	
Using agricultural App	
Taking photos/videos for farm-related purposes	
Education or online learning (e.g., farming courses)	
Listening to music or entertainment	

A.12. In the last 12 months, how much were the HH cash income from different sources?

Source	**Amount**
Livestock	
Crop	
Wage	
Farm labour	
Casual labour	
Social grant	
Remittance	

A.13. In the last 12 months, what did you spend your cash income on?

Item	**Amount**
Farm	
Food	
Funeral	
Savings	
Entertainment	
Rituals	
Education	

A.14. In the past week (last 7 days), how many times did you consume the following?

Item	**Frequency**	**Source** (farm/bought)
Meat		
Milk		
Eggs		
Vegetables		

A.15. Other than farmland, what other fixed assets are available for your use?

Fixed farm asset	**No. available**	**Acq. Method (Code)**	**Payment**		**Method code**
			Amt. (Rands)	**Period (Code)**	
Tractor					1. Inheritance 2. Purchased 3. Rented 5. Government alloc
Work cow					
Work horse					

Work donkey					
Vehicle					

SECTION B: LIVESTOCK PRODUCTION

B.1. Do you keep any livestock? If Y, which ones and how many of each do you keep at present, how many do you wish to keep, how many we kept 10 years ago and reason for the difference, if nay?

Livestock	**Y/N**	**Number**			**Reason for difference between No. kept and No. wished to keep.**
		Kept at present	**Wish to keep**	**Kept 10 years ago**	
Cattle					
Sheep					
Goats					
Pigs					
Chicken					

B.2. In the last 12 months, did you acquire any animal under each livestock (Y/N)? If Y, what is method of acquisition, how many animals and how much did you spend, total under each livestock?

Livestock	**Y/N**	**Method (Code)**	**No. Animals**	**Amt.**	**Channel**	**Method Code**
Cattle						1. Purchased 2. Inheritance 3. Lobola 4. Exchange/barter 5. Donation **If purchased,** 1. Cooperative 2. Village referrals 3. Farm
Sheep						
Goats						
Pigs						
Chicken						
Other1						
Other2						

B.3. In cases of cattle, sheep, goats and pigs how many animals in each category do you have today by sex and age range?

Livestock	**Age range**	**Sex**	
		Male (No.)	**Female (No.)**
Cattle	<2 yrs		
	>2 yrs		
Sheep	**<6 mths**		
	>6 mths		
Goats	<6 mths		

	>6 mths		
Pigs	**<5 mths**		
	>5 mths		

B.4. In the last 12 months, for each livestock category, how many animals did you sell, how much did you realize,how many would you have liked to sell? If you sold less than you would have liked to sell, what is the reason?

Livestock	**Sold**		**Marketing Channel**	**Wished to sell**	
	No.	**Amt. realized**		**No.**	**Reason for difference**
Cattle					
Sheep					
Goats					
Pigs					
Chicken					

B.5. If you produced milk, wool or egg, how many out of 10 portions of each did you sell within specified period, how much did you realize? How many portions out of 10 would you have liked to sell? What is the reason for difference, if any?

Product	**Sold**		**Wished to sell**		**Marketing channel**
	No. out of 10	**Amt. realized**	**No. out of 10**	**Reason for difference**	
Milk (7 days)					
Wool (12 months)					
Egg (7 days)					

B.6. Where is the source of feed for the livestock?

1= Community grazing ☐ 2 = Road side grazing ☐ 3= River side grazing ☐
4 = Supplementation ☐ 5. Crop residue ☐

B.7. Ways of grazing in this area?

1 = Sheep graze separately ☐ 2 = Sheep mixed with other livestock ☐

B.8. What source of water do you have for animal watering?

1 = Borehole ☐ 2 = Dam ☐ 3 = River ☐ 4 = Windmill ☐ 5 = Others (Specify)……

B.9. Do you experience feed shortage? 1 = Yes ☐ 2 = No ☐

B.10. What did you do when there was shortage? 1 = Sold animals ☐ 2 = Slaughtered ☐ 3 = Did nothing ☐

B.11. Do you supplement your flock? 1 = Yes ☐ 2 = No ☐

SECTION C: CROP PRODUCTION

C.1. Do you have individual HH **RAIN FED** plot of any of listed crops (Y/N)? If Y, what are area, rank in terms of cash income (1 most important), rank in terms of food security (1 most important) for each crop?

Crop	**Y/N**	**Area (Ha) planted**	**Rank in terms of cash**	**Rank in terms of food**
Maize				
Beans				
Spinach				
Cabbage				
Potato				
Carrot				
Pepper				
Tomato				
Butternut				
Pumpkin				
Onion				

C.2. Do you have individual HH **IRRIGATED** plot of any of listed crops (Y/N)? If Y, what are area, rank in terms of cash income (1 most important), rank in terms of food security (1 most important) for each crop?

Crop	**Y/N**	**Area (Ha) planted**	**Rank in terms of cash**	**Rank in terms of food**
Maize				
Beans				
Spinach				
Cabbage				
Potato				
Carrot				
Pepper				
Tomato				
Butternut				

Pumpkin				
Onion				

C.3. Do you belong to a **cooperative** that grows any of the listed crops in group (Y/N)?

C.4. In the last season, how much of each crop did you harvest from **INDIVIDUAL HH** plot? How many portions of harvest did you sell? How many portions would you have wished to sell, what is reason for difference, if any?

Crop	**Qty harvested (include measurements)**	**Channel**	**Sold**		**Wished to sell**	
			Portion out of 10	**Amt. realized**	**Portion out of 10**	**Reason for difference**
Maize						
Beans						
Spinach						
Cabbage						
Potato						
Carrot						
Pepper						
Tomato						
Butternut						
Pumpkin						
Onion						

C.5. In the last season, did you use hired labour for any crop in **INDIVIDUAL HH** plot of any crop (Y/N)? If Y, for what activity (mostly),what gender of hired labour mostly, what source of hired labour? Did you use as much hired labour as you wanted (Y/N)? If N, what is the reason?

Crop	**Used hired labour?**				**Used as much as wanted?**		Codes
	Y/N	**Activity (Code)**	**Gender (M/F)**	**Source (Code)**	**Y/N**	**Reason, if N**	
Maize							**Activity** 1. Land preparation 2. Planting 3. Weeding 4. Harvesting 5. Chemical application 6. Transportation **Source** 1. Village
Beans							
Spinach							
Cabbage							
Potato							
Carrot							
Pepper							
Tomato							

Butternut							2. Lesotho
Pumpkin							
Onion							
Other1							
Other2							

C.6. If you applied any of listed inputs to **INDIVIDUAL HH** plot of any crop how much did you spend on each input?

Crop	**Hired labor**	**Seed**	**Fertlizer**	**Chemical**	**Other2**
Maize					
Beans					
Spinach					
Cabbage					
Potato					
Carrot					
Pepper					
Tomato					
Butternut					
Pumpkin					
Onion					

SECTION D: ABANDONMENT OF CROP LANDS

D.1. How much farmland by type is available to you to use today, currently in use, how did you acquire it, how much do you pay per period?

Farmland type	**Total Area (Ha)**	**Total Area Used (Ha)**	**Area Wish Used (Ha)**	**If you wish to keep more, For what purpose?**	**Method of Acq**
Rain fed arable					
Irrigated arable					

D.2. Is farmland of each type available sufficient for you (Y/N)? if N, what is the reason?

Farmland type	**Y/N**	**If N, Reason**
Rain fed arable		
Irrigated arable		

D.3. Have you observed an increase in the abandonment of crop land your area in the past decade?
Yes ☐ No ☐ Not sure ☐
D.4. What do you think are the primary reasons for the abandonment of arable lands in your area? (Select all that apply)

Reason	**Y/N**
Economic difficulties	
Lack of access to markets	
Soil degradation	
Climate change	
Insufficient water supply	
Migration of rural population	
Other……	

D.5. To what extent do you believe that climate change has contributed to the abandonment of crop lands?
Slightly ☐ moderate ☐ Significantly ☐
D.6 Do you believe that a household can solely live by farming without additional income from grants or wage labour?

Partially ☐ Not at all ☐

SECTION E: GOVERNMENT EFFORTS & INSTITUTIONAL SUPPORT

E.1. Are you aware of any government initiatives aimed at revitalizing abandoned arable lands in your area (Y/N)? if Y, which of the following efforts have been implemented?

Government effort	**Y/N**
Financial support	
Technical support and training	
Provision of irrigation facility	

Masilime programme/related project	
Provision of farm inputs such as tractor	
Market access programme	
Other……	

E.2. How effective do you believe these programmes are in addressing land abandonment and subsequently food security?

Very effective ☐ neutral ☐ Ineffective ☐

E.3 Please explain your answer in E.2

E.4. Did you take credit in the last 12 months (Y/N)? if Y, for what purpose, how much, from what source, for what period, and what is interest?

Y/N			**Purpose** 1. Farming 2. Wedding 3. Funeral 4. Education 5. Building 6. Ritual/sangoma 7. Food 8. Entertainment 9. Transport 10. Furniture 11. ----------	**Source** 1. Stokvel 2. Mashonisa 3. Friends/relatives/neighbours 4. Bank
Purpose (Code)				
Amount				
Source (Code)				
Period (Code)				
Interest	Rate (%)			
	Per (Code)			

E.5. Did you take enough loan (Y/N)?--------; if N, what is the reason?----------
---

E.6. Have you benefited from any government program that aims at revamping land?

1 = Yes ☐ 0 = No ☐

E.7. If yes, please explain

Year	**Received From**	**Money (R)**	**Other goods / Services**

E.8. Are you aware of extension officers in the area?

E.9. How far are the extension officers from you? …… km

E.10. How often do the extension officer's visit? (Tick the appropriate)

Weekly ☐ Monthly ☐ Quarterly ☐ Annually Other, specify = …….

E.11. Are you satisfied with this visitation period? (Tick the appropriate)

Yes ☐ No ☐

----------END……..

Appendix C: Ethics certificate

UNIVERSITY OF MPUMALANGA

Creating Opportunities

MEK Ngcobo

School of Agricultural Sciences

Mbombela Campus.

Dear **Lerato Mary-Gold Morajane (202125521).**

Protocol Reference Number: UMP/MORAJANE202125521/SAS/MSC/2024/01

Project Title: An Inquiry into Factors Influencing Croplands Abandonment by Households in eMzitheni Village, Eastern Cape.

Approval Notification: In response to your application received on **31/03/2025**, The Research Ethics Committee: Faculty Research Ethics Committee has considered the above mentioned application and the protocol has been granted **FULL APPROVAL**.

Any alteration/s to the approved research protocol i.e. Questionnaire/Interviews Schedule, Informed Consent form, Title of the project, Location of the study, Research Approach and methods must be reviewed and approved through the amendment/ modification prior to its implementation. In case you have further queries, please quote the above reference number.
PLEASE NOTE: Research data should be stored securely in the School/ division for a period of 5 years. The Ethical Clearance certificate is only valid for a period of 3 years from date of issue. Thereafter, Recertification must be applied for on an annual basis.

Wishing you the best with your study.

Yours faithfully,

.....

MEK Ngcobo (Chair)

Cc: Research Office Administrator: .....

Cc: Faculty Research Committee Chair: .....

DECLARATION OF INVESTGATOR(S)

I/We fully understand the conditions under which I am/we are authorised to carry out the abovementioned research and guarantee to ensure compliance with these conditions. I agree to completion of a yearly progress report.

....

Signature Date

PLEASE QUOTE THE PROTOCOL NUMBER ON ALL ENQUIRIES

Appendix D: Letter to Municipality

Date: 06 December 2024

To:
The Office of the Director
Department of Agriculture
Eastern Cape Provincial Government
Bhisho 5605

Subject: Request for permission to conduct a survey study on An inquiry into factors influencing croplands abandonment by households in eMzitheni village, Eastern Cape.

Dear Director, I trust this letter finds you well. My name is Lerato Mary-Gold Morajane, and I am a Master of Science in Agriculture candidate at the University of Mpumalanga. I am writing to respectfully request permission to conduct a survey study as part of my research titled, "**An inquiry into factors influencing croplands abandonment by households in eMzitheni village, Eastern Cape.**"

This study seeks to analyse the factors behind the abandonment of arable lands in the rural community of eMzitheni village in Mnquma in the Eastern Cape and evaluate the consequences of cropland abandonment on food availability among households.

Research Objectives:

1. To identify socio-economic characteristics of farming households in eMzitheni.

2. To identify which households in eMzitheni produce their own food.

3. To identify the factors influencing cropland abandonment in eMzitheni.

4. To analyse households' perceptions, attitudes and lived experiences of cropland abandonment.

5. To analyse the consequences of cropland abandonment on food availability among households in eMzitheni.

Scope of the Study:

This study will involve surveying a representative sample of farming households in eMzitheni village. The survey will cover key areas such as access and effectiveness of government crop farming support programs, financial capacity, and educational background. All data collected

will be used solely for academic purposes and will be treated with the highest level of confidentiality.

Duration and Methodology:

The study is scheduled to take place over a two-month period, from January to February 2025. Data collection will be conducted through structured interviews and questionnaires, administered either in person or electronically, based on the availability and preferences of the participants.

Ethical Considerations:

I assure you that all ethical protocols will be strictly followed. Informed consent will be obtained from all participants, and their privacy and confidentiality will be safeguarded throughout the research process. The findings will be shared with relevant provincial authorities, and any recommendations will be aimed at supporting the agricultural sector's growth and sustainability in Mnquma Local Municipality.

I kindly seek your approval to proceed with this study in eMzitheni village. Your support will be instrumental in helping us understand and address the challenges faced by crop farming households, thereby contributing to the broader goal of ending croplands abandonment in the municipality.

Please feel free to contact me at 202125521@ump.ac.za or 0636368415 should you require any further information or clarification regarding this request.

Thank you for considering my request. I look forward to your positive response.

Yours sincerely,

Lerato Mary-Gold Morajane

MSc Agric Candidate

University of Mpumalanga

Appendix E: Turnit in report

Submission date: 27-Oct-2025 10:56PM (UTC+0300)
Submission ID: 2793565377
File name: 5108_LERATO_MARY-GOLD_MORAJANE_Dissertation-Lerato_192776_912225289.docx (1.15M)
Word count: 21038
Character count: 127709

An Inquiry into Factors Influencing Croplands Abandonment by Households in eMzitheni Village, Eastern Cape

Lerato Mary-Gold Morajane
202125521
orcid.org/ 0009-0009-4110-0693

A dissertation submitted for the Master of Science in Agriculture degree

Supervisor: Prof. M. Christian
Co-Supervisor(s): Dr S Zantsi & Prof. O. Kanayo

School of Agricultural Sciences
Faculty of Agriculture and Natural Sciences
October, 2025

UNIVERSITY OF MPUMALANGA

Dissertation-Lerato

ORIGINALITY REPORT

6%	%	6%	%
SIMILARITY INDEX	INTERNET SOURCES	PUBLICATIONS	STUDENT PAPERS

PRIMARY SOURCES

1	Sambo, Themba Andries. "Analysis of the Food Security Status of Phezukomkhondo Mlimi Beneficiaries, Nkomazi Local Municipality, South Africa", University of South Africa (South Africa) Publication	1%
2	Dhanya Jagadeesh, Mzuyanda Christian, Simon Letsoalo. "Assessing the Effectiveness of Climate-Smart Irrigation Practices in Improving Household Income Among Smallholder Maize Farmers in Botswana", Sustainability, 2024 Publication	<1%
3	Mapesa, Zainabu Hassan. "Effects of Students' Sex on Effective Utilization of Guidance and Counseling Services in Higher Learning Institutions: A Case of the University of Dodoma", University of Dodoma (Tanzania) Publication	<1%
4	S. Zantsi, B. Bester. "Farming Households' Livelihood Strategies In Ndabakazi Villages, Eastern Cape: What Are The Implications To Extension Services?", South African Journal of Agricultural Extension (SAJAE), 2019 Publication	<1%
5	Paul Hebinck†, Lothar Smith, Michael Aliber. "Beyond technocracy: The role of the state in rural development in the Eastern Cape, South Africa", Land Use Policy, 2023 Publication	<1%

Appendix F: English language editor certificate

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SCHOOL OF BIOLOGICAL SCIENCES

Tel: +27 18 389 2289 **Fax:** 018 389 2134

Cell: +27 72 626 8446 **E-mail:** Oziniel.Ruzvidzo@nwu.ac.za

Date: 28th October 2025

To Whom It May Concern,

REF: Language Editing and Proof-reading of Dissertations/Theses

Dear Sir or Madam,

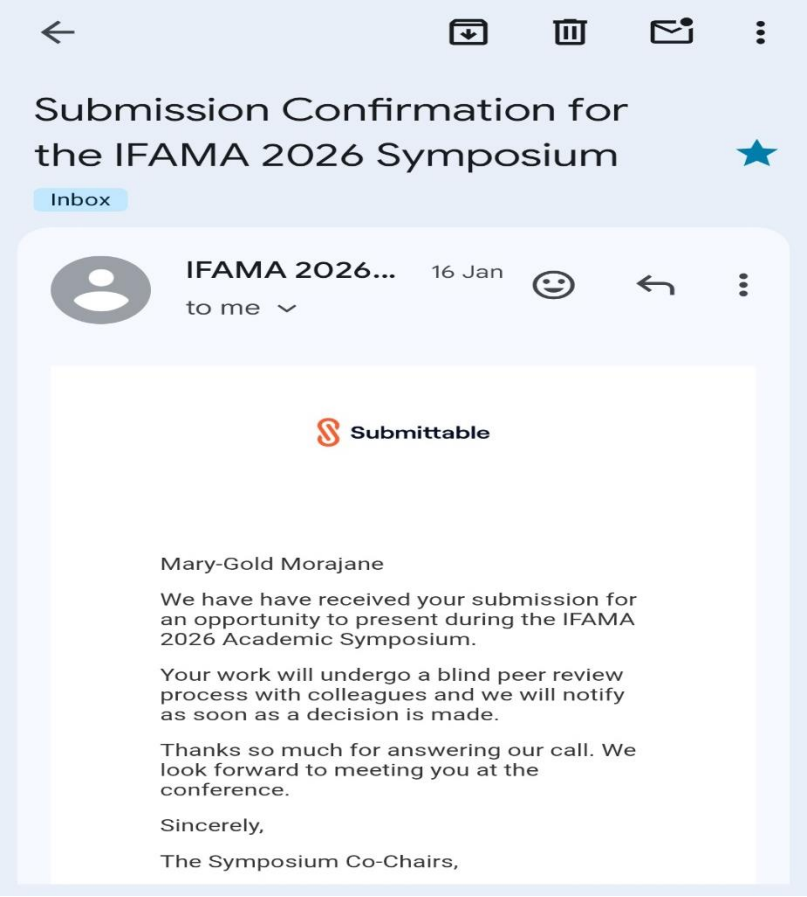
This serves to confirm that I have proof-read and edited the **MSc Dissertation** of **Lerato Mary-Gold Morajane** (Student number: **202125521**; orcid.org/**0009-0009-4110-0693**) from the **University of Mpumalanga**) entitled: **An inquiry into factors influencing croplands abandonment by households in eMzitheni village, Eastern Cape**. The candidate then later corrected all the identified language and technical errors to the satisfaction of the supervisor. Thus, the document presented here is of sufficient and acceptable academic standards.

Editor

Prof. O Ruzvidzo

Appendix G: Conference and papers

Proof of submission for IFAMA conference



Proof of manuscript submission – Cogent Food & Agriculture

Proof of manuscript submission – Frontiers