



Challenges on Crop Production among Small-Scale Farmers in DYUKU Village, Lilongwe District, Malawi.

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Abstract

This study draws down to the challenges on crop production among small-scale farmers in Dyuku village, Lilongwe, Malawi. Crop production is said to be the growing of any planted food at any quantity amount for consumption and commercial purposes. In Malawi, crop production is said to be the leading activity when it comes to the economic development of the country, and majority of crops on the markets are produced by small-scale farmers in rural areas. However, despite crop production from small-scale farmers being the lead to economic development in Malawi. The farmers face a lot of challenges when it comes to crop production. These challenges include weather shocks, missing markets, limited information on market prices, inadequate farm inputs and the objective of the study was to assess the effects of the challenges towards crop production. Additionally, it is very vital for the challenges to be addressed in order to fight issues like food insecurity. Further, the study sought to find the effects on demographic shrinkage in land size as the research gap. The research undertook a descriptive approach and mixed methods of approach (qualitative and quantitative). Data was collected and analyzed, shrinkage in land size has affected their expected crop yield, missing markets and information on market prices, and lack of modern skill training are the main challenges farmers in Dyuku village face. Lastly, the study advocates for modern skill training, economic empowerment, easy access to current market prices, and linking the farmers to big markets.

KEY WORDS: Crop production, Small-scale farmers, rural area, challenges on crop production, Demographic shrinkage in land size.

I. Introduction.

In Malawi, crop production is said to play a very vital role when it comes to the development, economy, high income rates, the improvement of living standards towards people, eradication of

poverty, and as well as enhancement of food security (H., 2008). Crop production brings about new opportunities through emphasizing of the productivity value of human and social, all properties that Malawi may have or that may be regenerated at low financial cost.

The central region of Malawi is known for providing abundant agricultural crops. Lilongwe is also known to be one of the countries that have great crop production. As it is known that Malawi's economy is dependent on agriculture productivity by 80%. And these crop production comes from small-scale farmers found in rural areas like Dyuku village, Traditional Authority Kabudula, in Lilongwe, Malawi.

Small scale farmers are said to be farmers that produce food fundamental for household consumption needs (C., 2005). Small scale farmers may also refer to those farmers that have access very small or little land for farming and may have between three to five acres here in Malawi. Crop production is defined as the way of raising and growing of farm foods in the right quantity at the right time (Herren, 2014).

However, despite crop production being the lead towards the economy of Malawi. There some challenges faced in regards to crop production among these small-scale farmers such as; weather shocks (climate disturbance), missing markets and limited information on current market prices, and as well as inadequate farm resources.

Addressing these challenges requires coordination from the government, NGOs (agricultural institutions) and financial institutions in order to establish sustainable agricultural practices, improvement in infrastructures (roads and markets), enhancing access to inputs (finances, skills, seeds/fertilizer), and lastly strengthening resilience to weather shocks. This research helped to recognize the challenges these farmers have been facing lately, and recommend possible solutions, policy in order to help these farmers enhance their



crop production yield for food security and as well as income generation.

1.1 Problem Statement

A fallout of the attention to agriculture has for a while now been planned by the government and non-governmental agencies as the right solution to the crises of high-rate unemployment in Malawi, yet majority of the people living in the rural areas seek migration opportunities when arise, hence, it has made worse situations when it comes to unemployment and food shortages in the country.

The capacity of food production is faced with burgeoning tension, the population of the world is expected to rise up to nine billion (9 billion) by the year 2050, and it is said that the ratio of that land of arable is fast falling to the population. However, regardless the awareness, the global food per capita of crop production was 34.5% reported in 2012.

Malawi's economy is basically signaled by the dependency on mainly agriculture. The agriculture department in Malawi currently holds 42 percent (42%) of GDP and as well as 81percent (81%) Of export earnings. However, small scale farmers here in Malawi rely on rain-fed crop production and are not exposed to modern type of farming also known as irrigation.

Moving on, the challenges most small-scale farmers face here in Malawi are; access to money, access to markets, current market prices, weather shocks, storage for crops, demography shrinkage, and as well as knowledge enhancement from agriculture institutions for sustainable agricultural practices. If these challenges are not addresses with very keen attention, it may keep affecting the economy of the country and it may also result in food insecure which may cause high number of death rates, hence, hindering the end hunger and poverty reduction strategy of the country and United Nations Sustainable development goals (UNSDGs) for developing countries.

The benefaction of small-scale agriculture to economic development can be comprehended if small-scale farmers are engaged to big markets in agriculture supply chain so that they can be able to benefit from these markets.

Majority of research indicate how small-scale farmers may be linked to big markets, however, it has shown that they have failed to come up with a solution on how these small-scale farmers can be helped to benefit from these big markets. It has also shown that it may be easier to

link these small-scale farmers to the big markets, although, they may be a predicament for these small-scale farmers to please these markets, achieving compatibility, and keep sustaining the products for the markets.

Prior to linking small-scale farmers to big markets, there is for governmental agencies to ensure that these small-scale farmers are consistence when it comes to marketing their produce. The essence of the challenges goes down to finding some factors that are currently stopping small-scale farmers from profiting from well-grounded markets and as well as determine multiple plans that can help small-scale farmers to be able to compete more in the big markets.

For small-scale farmers to be able to be consistent along the chain, some issues need to be looked into as well as addresses, for instance; crop production factors, the capacity of management, the cost of transactions, on farm and out of the farm infrastructures, helping them financially, giving them agriculture advise, availability of research gates and adoption of technology.

The study focused on the challenges among small scale farmers here in Malawi and how the government sector or non-governmental sectors are helping to address these problems.

1.2 General Objectives

The main objective of the study is to access the challenges facing crop production among small-scale farmers in Dyuku village, Lilongwe Malawi.

Specific objective

- To investigate the effects of weather shocks in Dyuku village.
- To find out about the effects of missing markets and limited information on current market price.
- To analyze the effects of inadequate farm inputs on crop production.
- Establish the benefits of fertilizer subsidy to small-scale farmers.

1.3 Research Questions

1. What are the effects of weather shocks on crop production in Dyuku village?
2. To what extent does missing markets and limited information on current prices affect the small-scale farmers?
3. How does inadequate farm inputs affect crop production?



II. Literature Review

2.1 Effects of weather shock on crop production

Climate change presents a significant challenge to crop production (Moncur, 2023). Small-scale farmers heavily depend on weather patterns that are conducive to crop growth, making them particularly vulnerable to the impacts of climate change. Research indicates that climate change can disrupt these weather patterns, leading to increased frequency and intensity of extreme weather events such as droughts, floods, and heat waves. These changes can damage natural resources critical for agriculture, including soil fertility, water availability, and biodiversity, further exacerbating the challenges faced by small-scale farmers.

Given the implications of climate change on agricultural systems, there is a pressing need for the development and adoption of sustainable production systems. (Moncur, 2023), emphasize the importance of transitioning towards sustainable agricultural practices that enhance the resilience of farming systems to climate variability and change. Such practices may include conservation agriculture, agroforestry, crop diversification, and efficient water management techniques.

Promoting sustainable production systems makes it feasible to increase small-scale farmers' productivity while lessening their susceptibility to hazards associated with climate change. In addition, funding for capacity-building programs, extension services, and research is essential for encouraging the adoption of sustainable farming methods and guaranteeing the sustainability of farming livelihoods over the long term in the face of climate change.

Furthermore, In order to evaluate the effects of climate change on agricultural output and farmer livelihoods in a disadvantaged rural community, (IV, 2021) carried out a case study. Through participatory research methods and household surveys, Annex documented the experiences of farmers facing climate-related challenges, such as shifting growing seasons and increased pest pressure.

The study highlighted the need for context-specific adaptation strategies tailored to the unique socio-economic and environmental conditions of different regions. Moreover, Annex emphasized the importance of community engagement and collaboration in developing and implementing climate resilience initiatives to ensure their effectiveness and sustainability.

2.2 The effects of missing markets and limited information on market prices

(Austin Phiri, 2018), conducted a study on small-scale farmers' access to information. The study used qualitative research methodologies, including as focus groups, surveys, and interviews, to evaluate the efficacy and availability of market information transmission channels. Using these techniques, Austin Phiri was able to pinpoint deficiencies in the provision of agricultural extension services as well as the difficulties farmers encounter in obtaining timely and pertinent information. As a recommendation, Austin Phiri proposed the revitalization of extension services and the utilization of innovative communication technologies to improve farmers' access to information.

Additionally, he suggested the establishment of farmer cooperatives and knowledge-sharing networks to facilitate peer-to-peer learning and enhance information dissemination among small-scale farmers.

The study conducted by (Ashraf, 2018) employed qualitative techniques, such as focus groups and interviews, to investigate the difficulties faced by small-scale farmers due to a lack of market information and absent markets. Farmers' difficulties in reaching markets and getting precise pricing information were recorded by Ashraf through stakeholder interviews and participant observations. In order to avoid middlemen and increase farmers' negotiating power over prices, Ashraf recommended the creation of alternative market linkages including farmer cooperatives and direct selling channels.

2.3 The effects of inadequate farm resources/inputs

(Wolfgang Johann von loeper, 2016), sheds light on the problem at hand, particularly focusing on small-scale farmers in South Africa. Their research suggests that these farmers encounter limited access to essential resources such as loans, markets, and insurance to mitigate risks. Additionally, they find it challenging to participate in modern agricultural value chains, which are essential for improving productivity and profitability.

Von Loeper argues that financial and agricultural institutions have the potential to play a crucial role in addressing these challenges and supporting small-scale farmers in producing high yields. By providing access to financial services, market linkages, and risk management tools, these institutions can help farmers overcome constraints



related to inadequate farm inputs and enhance their capacity to adopt modern agricultural practices. Essentially, Von Loeper's work emphasizes the significance of focused interventions and institutional support to mitigate the effects of subpar farm inputs on small-scale farmers' crop production, especially in areas like South Africa where markets and resources are still scarce. The impact of inadequate farm inputs on crop productivity among Nigerian small-scale farmers was examined in (Osuji Emeka Emmanuel, 2020).

2.4 Establish the benefits of fertilizer subsidy

(Wilson, 2014), analysis of market and government inefficiencies in Malawi primarily involved qualitative assessments and case study to understand the challenges faced by small-scale farmers. Through interviews and observations, Wilson documented the issues surrounding the fertilizer coupon program, focusing on the political favoritism and inefficiencies within its implementation.

As a recommendation, Wilson suggested reforms in the distribution mechanism of fertilizer coupons to eliminate political biases and ensure equitable access for all small-scale farmers. Additionally, he proposed greater transparency and accountability in government programs to address market inefficiencies and support farmers in accessing essential agricultural inputs.

2.5 Research gap

The literature review reveals a substantial emphasis on several key challenges faced by small-scale farmers, including limited access to farm inputs (especially finance), markets, weather shocks, and lack of information on market prices. Additionally, infrastructure development emerges as a significant concern affecting agricultural productivity. While these challenges have garnered considerable attention in academic research and policy discourse, there appears to be a notable gap in addressing other critical issues such as demography-driven shrinkage in land size (land management) and limited opportunities for farmers.

One of the identified research gaps pertains to the phenomenon of demography-driven shrinkage in land size, which refers to the reduction in the size of agricultural landholdings due to population growth, urbanization, and other demographic changes. This challenge poses significant implications for small-scale farmers, as dwindling land sizes can constrain agricultural productivity, limit crop diversification, and exacerbate land degradation.

It has been shown that land management issues have also been affecting the farmers in rural areas of Lilongwe Malawi like Dyuku Village. As farmers are selling their farm lands to earn money to buy farm inputs and sustain their household needs. These lands are being bought for urban settlement by people in the urban areas due to population increase. This research looked into how the demography driven shrinkage in land affects the small-scale farmers from their point of view.

In summary, the research gap identified in this study revolves around the insufficient attention given to demography-driven shrinkage in land size (land management) and limited opportunities faced by small-scale farmers. Addressing these gaps contributed to a more comprehensive understanding of the challenges affecting agricultural productivity and livelihoods, thereby informing evidence-based policies and interventions aimed at promoting the resilience and sustainability of small-scale farming communities.

III. Research methodology

Research methodology is said to be a way to systematically come up with solutions for a particular research problem (C.R Kothari, 2014). Kothari also describes research methodology as to be a scientific study on how research might be done, where it will be done, who it will concern, number of people it will involve and many more.

In this context of the study, aimed at assessing the challenges on crop production among small scale farmers in Dyuku village, T/A Kabudula, Lilongwe district, Malawi. The research methodology outlined the consists of study area, research design, population of the study, sampling procedure, sample size, sources of data collection, methods of data collection, tools for data collection, tools for data analysis, limitations of the study, and as well as ethical considerations.

3.1 Research Design

A research design is said to be a set of steps taken to collect and analyze your data (Jenkins-Smith, 2017). Research design can be said to be a framework of methods of research and techniques used in a research study. This allows the researcher to choose the right methods suitable for the topic for the success of the study.

This study was conducted through a descriptive research design and the use of mixed methods of research (qualitative and quantitative research methods).

These methods enabled the research to describe the challenges facing crop production among small-



scale farmers from a number of small-scale farmers, through collection of data from the small-scale farmers at one point in time.

3.2 Population of study

The population of the study is said to be set of the actual targeted population (people) for a specific study. In other words, population can be said to be a group of people that a researcher picks to work on in order to conclude something. However, when it comes to research population may not only refer to people. It may be a group of elements of something a research is about to study on.

The target population of this study consist of 52 small-scale farmers in Dyuku village, Lilongwe district. Dyuku village was selected because there has been low productivity in crops in the last recent years. This is due to no access to markets, and information on market prices and as well as dependency on rain-fed.

The accessible population of the study will consist of 40 active small-scale farmers in Dyuku village, Lilongwe district. In this study only active farmers will be included for the study. As we know small-scale farmers are said to be farmers that produce crops mainly to meet the household needs. Whilst active small-scale farmers are said to be farmers that produce enough crops for their households for the entire year until the next farming season.

3.3 Data collection tools

Tools for data collection are said to be tools or devices that are used in a research study to collect data. These tools for data collection can be mobile data applications and as well as paper based questionnaires for the data collection.

In this study the researcher will use the paper based questionnaires as the tools for data collection. The researcher will come up with close to 40 questions that will be drafted on a word document and later be printed out to the same number as the research's sample size. Then will be given to the researcher to conduct the interviews. This paper based questionnaires will comply of semi structured questions and observation checklist will be used as tools for gathering the data.

The paper based questionnaire and observation checklist will be used as tools for data collection because it will ensure both qualitative and quantitative data are collected for a well detailed description for challenges facing small-scale farmers in Dyuku Village.

3.4 Data analysis tools

Tools for data analysis are said to be Microsoft applications that help the researcher to analyze the data that has been collected. These tools are excel or Statistical Packaging for the social science (SPSS) that consist of charts, diagrams, others maps that help the researcher and the reader to have an idea on how the respondents answered the questions.

This study will adapt to the statistical packaging for social science SPSS for the analysis of data collection in the fourth chapter. The researcher has chosen the statistical packing for social science unlike excel because the statistical packing for social science allows researchers to have more superior visualization capabilities when it comes to data analysis unlike Excel and other data analysis tools.

Lastly the researcher found the statistical packing for social science more familiar to work with than the Microsoft Excel to end with. And it will helpful in basic statistical analysis and as well as regression and hypothesis testing analysis.

IV. Data Analysis and Discussion.

4.1. Introduction

This chapter presents the findings that were generated on the determination of challenges on crop production among small scale farmers based in Dyuku Village in Lilongwe. The primary data for the study was acquired from Dyuku villagers themselves through self-administered questionnaires. Therefore, the chapter in detail presented the results generated using descriptive and thematic analysis. The chapter presented the results using tables, graphs, charts and essay formats among others.

Furthermore, the chapter listed the response rate, the demographic characteristics of the respondents, the findings on crop production and weather shocks, findings on missing markets and farm inputs. Finally, the study made presentations on the findings in relation to the study objectives and the overall discussion on the research findings.

Demographic Data.

The study examined the demographic information of the respondents. The characteristics ranged from the respondents' gender, marital status, age and highest education qualification. The researcher deliberately examined the respondents' demography as it further enabled the researcher to have comparison of the control group and the experimental group. In addition, examining the demographic characteristics of the respondents



enabled the researcher to have an understanding of how different characteristics of the population have been presented in the sample. Finally, this demographic information made the researcher to understand the respondents by their characteristics which included age and gender among others.

Findings in Relation to Agricultural Production (weather shocks)

This section examined from the targeted respondents on the issues to do with agricultural production of their farm produce. In summary, the section examined common weather shocks that these farmers in Dyuku village encounters and how they affect their production, how they overcome the weather shocks and the quality of their harvest.

The study found that the common weather shocks experienced by the respondents were drought, floods and heatwaves. In detail, the study found that heatwaves where the most common weather shock that affected the farmers included the heatwaves and there were 16 of them that presented 43.2%. 15 respondents indicated that they were affected by droughts and they presented 40.5%. Finally, the least affecting shock were the floods which were submitted by only 6 people that presented 16.2%.

The study examined the number of bags the harvested by the respondents as maize is considered a staple food in 125 developing countries of which the majority of the producers of maize are mostly farmers on a low scale production (H. Nyirenda, 2021). It was found that 14 respondents indicated to harvest 10-30 bags and 31-50 bags and each category was represented by 37.8% of the respondents. 6 respondents representing 16.2% of the respondents submitted that they harvested 51-70 bags of maize. Finally, the range of 91-100 bags of maize harvested had 3 respondents and represented 8.1% of the respondents.

The study examined the quality of the harvest ranging from small corn, medium corn and large corn. The majority of the respondents indicated that they had harvested medium corn quality of the maize and they were 13 and presented 35.1%. Small Corn and large corn had an equal representation of 12 respondents which presented 32.4% each.

Findings in Relation to Missing Markets and Limited Information on Market Prices.

In this section, the researcher examined where the maize is sold and distance of the markets from their community in order to get an

understanding on the challenged based on missing market. The study examined where these farmers sell their harvest. The study classified the responses of the respondents into vendors, other farmers, consumers and ADMARC (or other government agencies). It was found that the majority of the respondents indicated that they sell their harvests to other farmers and they were 21 in number and they presented 29.7%. There were no any respondents that sold their harvests to ADMARC, that the government and that was 0.00% of the respondents. 11 respondents presenting 29.7% of the respondents sold their products to vendors. Finally, 5 of them presenting 13.5% of the respondents.

Inadequate Farm Inputs

Moving on, Inadequate farm inputs. Out of the 37 respondents, the study found that 10 respondents indicated to engage the financial institutions for loans and grants of farm inputs. These respondents that engaged represented 27%. Similarly, those that had engaged financial institutions. Respondents that did not engage these financial institutions were 27 representing 73%. The study found that only 6 respondents were visited by these agricultural or financial institutions for loans/grants. And these 6 respondents represented 16.2%. Those respondents that had not been visited by these financial/agricultural institutions were the majority as they amounted to 31, representing 83.8%.

On fertilizer subsidy, the findings reveal that 13 respondents put of the 37 admitted to benefit from the fertilizer subsidy and they presenting 35.1%. 24 respondents amounting to 64.9% did admitted not to benefit from the fertilizer subsidy program.

Demographic Land Shrinkage

Only 9 respondents submitted that their land sizes shrunk and they contributed to 24.3% of the respondents. 28 respondents indicated that their farm land sizes have never shrunk and this presented 75.7%. When examined if they had once sold their farm land, 13 respondents admitted to selling their farm land and they contributed to 35.1% of the respondents. 24 respondents did not sell their farm land and their composition was 64.9%.

The study found that 12 respondents agreed that the size of their respective farm land affects their respective yields and they presented 32.4%. The majority of the respondents indicated that they don't think that the farm land size affects their



respective yields. This majority was 25 in number and they contributed to 67.6%.

V. Conclusion

Based on the research's findings, the researcher explains the conclusions as follows;

- Weather shocks is the significant effect on crop production in Dyuku village.
- Missing markets and limited information on current markets prices contributes to their challenges towards income generation.
- Soil erosion contributes to land shrinkage in Dyuku village.
- One of the challenges in regards to farmers accessing markets is transportation and distance.
- There is need to prop-up policies to do with extension services, market infrastructures, and subsidy.
- Policy support and government's intervention is vital to address the challenges these farmers face.

VI. Recommendations

Based from the research findings, the research came up with the following recommendations;

- The ministry of Agriculture with help from other agricultural institution through Public-Private Partnership (PPP) to implement strong measures that will help in Monitoring whether the employed agriculture extension workers deployed in the communities are really playing their roles and duties by providing the required skills and knowledge to the farmers in the allocated communities.
- Linking the active small-scale farmers in rural areas to big potential agricultural markets that can help them sell their crop yields at the right amount of money, and as well as giving the unlimited access to buyers or seed companies that will buy their harvests in Burks without forging the original prices. In addition, there is need of enforcing laws that are supposed to stop vendors from forging current market prices.
- Financial Institutions providing loans to these small-scale farmers in the required areas that are really in need of these loans, unlike providing loans to only farmers who have the required resources as this becomes one of the results these small-scale farmers fail to grow when it comes to boosting their business and income.
- Proper supervision when the country is facing weather shocks, these agricultural professionals are required to give these small scale

farmers options in order for their planted crops not to die due to the weather shocks.

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