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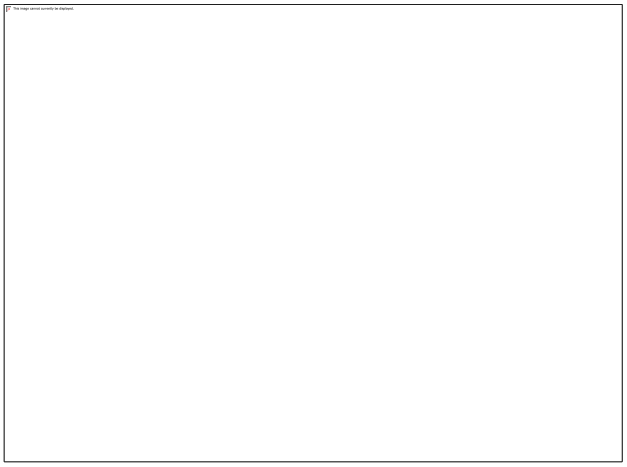

THE FACULTY OF AGRICULTURE AND ENVIRONMENTAL SCIENCES

DEPARTMENT OF AGRICULTURAL ECONOMICS MANAGEMENT

ASSESSMENT ON THE EFFECTS OF GOVERNMENT WHEAT INPUT SUBSIDIES. A CASE STUDY OF KWEKWE.

BY

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A DISSERTATION SUBMITTED TO THE BINDURA UNIVERSITY OF SCIENCE AND TECHNOLOGY IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE BACHELOR OF SCIENCE HONOURS DEGREE IN AGRICULTURAL ECONOMICS AND MANAGEMENT

MAY 2024

RELEASE FORM

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DECLARATION

I, Mufaro Masiri declare that the research project, which I hereby submit for the Bachelor's degree in Agriculture Economics and Management at the Bindura University of Science Education, is my work and has not previously been submitted at any other tertiary institution.

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DEDICATION

I dedicate this research project to my parents and my sister Sharon Masiri. Thank you for your motivation and your support in many kinds including financial assistance.

ACKNOWLEDGEMENT

I thank God above all others for giving me the strength to persevere and accomplish this thesis, am so grateful to my supervisor Dr. Chivheya for his mentorship, advice, guidance and for working tirelessly to ensure this thesis became a reality. Also I am indebted to Kwkwe Agritex officers and ward 5 kwekwe smallholder farmers for the support received during data collection, especially on information about wheat input subsidies. My sincere thanks to the following people for their assistance and encouragement; Takudzwa Tapomwa, Pachiti Remington, Kudakwashe Matare, Mellissa Masiri and the rest of the team. Last but not least, I would like to thank my family for their unconditional support. A special thanks to my beloved mother Edina Chiware for being my role model.

ABSTRACT

The study was on the assessment of the effects of subsidies on wheat. A case study of Kwekwe district, Dunlop extension ward 5. The objectives of the study were to determine the effect of subsidies on farmer's income, to determine the effect of subsidies on wheat market and to evaluate constraints faced by wheat farmers. A random sample of 50 farmers were contacted so as to gather information on the effects of subsidies on wheat. The researcher used structured questioner to gather information of the study. To find out the effects of subsidies on farmer's income, regression analysis was used, to determine the effect of subsidies on market, time series was used and to evaluate constraints faced by wheat farmers, Likert scale was used. It is with evidence from the results, that wheat output has got significant level of 0,05 and p value of 0,031 which signifies that there is direct proportion between income and wheat output. On the effects of subsidies on market, it shows that an increase in subsidy amount cause an increase in wheat output. Price rises from 400 USD to 650 USD from the year 2022 to 2023. This agrees the law of supply which says producers supply more at higher price. In this case, price increase was due to the government regulation which increases prices for wheat produce to motivate farmers to grow. The major constraint faced by farmers was delay on payment as 28 out of 50 farmers strongly agree that delay on payment was affecting their production.

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APPENDIX 1: SURVEY QUESTIONER

LIST OF ACRONMYS

AGRITEX. Agriculture Technical and Extension Services

G.M.B- Grain Marketing Board

G.D.P- Gross Domestic Product

U.S.D- United States Dollar

C.B.Z – Commercial Bank of Zimbabwe

Chapter 1
Introduction

2.1 Background of the study

Government subsidies play a crucial role in agriculture sector, particularly in developing countries such as Zimbabwe. Agriculture occupies a central place in the Zimbabwean economy, contributing 15-18%of Gross Domestic Product (GDP). In addition, it contributes over40%of national export earnings and60% of raw materials to agro industries. Over 70% of the population derives its livelihoods from the agricultural sector. Wheat contributes more to food security as the second most strategy for food security in Zimbabwe after maize counting more that 50% of daily caloric intake in the country (Kapuya, 2010). Wheat is the second most important cereal after maize in the basket of food security in Zimbabwe (SEED-CO, Zimbabwe). As Zimbabwe is an agriculture-based economy, it is important to note that subsidies have a greater party to play in agriculture production. Agriculture contributes up to 16% of country's GDP (FAO 2010). Currently Zimbabwe implement the government support input subsides where farmers were given inputs for its production as well as a way to increase their profit.

Subsidies reduce farmer's production costs since inputs are being given to farmers such as seed and fertilizers for their production. The effectiveness of agricultural input subsidies has remained a major area of contention, despite the policy belief that these subsidies are an important way of improving agricultural productivity in developing countries (Walls et al. 2018). On one hand, there is evidence that agricultural input support schemes raise farmers' productivity substantially and can sustain intensive agriculture in the long term (Hemming et al. 2018; Kanter et al. 2015; Jayne & Rashid 2013; Holden & Lunduka 2013; Baltzer & Hansen 2011 and Crawford et al.2006. Subsidies help farmers to increase their profitability, this is because farmers were given inputs that is seeds, fertilizers and other chemicals for wheat production. Subsidies help farmers with a pure market after harvesting since farmers were encouraged to sell their output to the country's market that is Grain Marketing Board (GMB). It is important to note that provision of market will encourage production since farmers will be escaped from market constrains.

2.2 Problem statement

Wheat production in Zimbabwe has been experienced by low productivity levels, resulting in the country's dependence on imports to meet its wheat demand. In response to this issue, the government has provided input subsidies to wheat farmers to incentivize production and

increase yields. Low wheat productivity in Zimbabwe poses a significant challenge to the country's food security and economic stability. The lack of access to affordable inputs, including high-quality seeds, fertilizers, and pesticides, is a major contributing factor to this problem. Without these essential resources, farmers struggle to achieve optimal crop yields, leading to insufficient wheat production. Recognizing the importance of the agricultural sector and the need to address this issue, the Zimbabwean government has implemented wheat input subsidies. These subsidies aim to provide farmers with affordable access to necessary inputs and improve productivity

2.3 Focus of the study

The focus of the study will be on the effects of government wheat input subsidies on farmer's income and market.

2.4 Research questions

1. How do government subsidies impact on farmer's income?
2. What is the impact of government subsidies on wheat market?
3. What are the production constraints faced by farmers?

2.5 Research objectives

2.5.1 Aim of the study

To assess the effects of government wheat input subsidies on farmer's income and market.

2.5.2 Specific objectives

1. To determine the effects of subsidies on farmer's income.
2. To determine the effect of subsidies on market.
3. To evaluate constrains faced by farmers.

2.6 Research hypothesis

Government wheat input subsidies has improved the cost reduction and income of farmers.

2.7 Justification

Government input subsidies in Zimbabwe has gradually contributing to a great part in the national economic growth. This research will be of utmost importance in helping policy makers to get insight on farmers' production issues, the factors affecting wheat production under government input subsidies and the gains a farmer makes from inputs that were given by the government. In addition, it is crucial to determine the profitability and complexity of the government's contribution plan. Therefore, this research will expand the literature information on government input subsidies for other value chain stakeholders and other bodies, including consultants, researchers, students, policy makers, producers, traders and finally the consumer.

2.8 Limitations of the study

Time- contacting an in depth analysis on the effectiveness of input subsidies on wheat production needs time and resources. Time constraints could limit the scope of research and ability to explore all relevant factors adequately.

Data availability - Access to updated information on wheat inputs subsidies production maybe restricted. Insufficient data could hinder the analysis and limit a depth understanding of the effectiveness of government input subsidies on wheat production.

Respond bias- Participants may provide biased information due to various factors such as lack of information. This affect the accuracy of the findings.

External factors - Factors such as weather and pest and diseases will affect the actually effects of government input subsidies on production since unpredictable factors can arise in the production.

Chapter 2

Literature review

Introduction

Agricultural subsidies are form of financial assistance provided to farmers. These subsidies are aimed to promote agriculture productivity, ensuring food security and improve live hood of farmers. There are several subsidies which fall under agriculture subsidies which includes input subsidies, credit subsidies and export subsidies. Inputs subsidies involving the provision of agriculture inputs such as seeds, fertilisers and equipment's. This type of subsidy is basically aimed to reduce the input costs of production. Export subsidy also essential subsidies as they are subsidies which are provided for international producers so that the can be able to export at lower costs. It is important to note that these subsidies are there to help farmers to boast their working capital for production. In this regards I'm going to put a review on government input subsidies on its effect on income and market. Also reviewing as well as constraints which farmers are facing as they produce wheat under the government wheat input subsidies.

2.9 Theoretical framework

2.9.1 Theory of Subsidies and its impact on production

Support policies influence production and yields by changing the input use decision or affecting farmers' efficiency. As mentioned before, input-coupled or production unit-based subsidies are more likely to affect the production input decision (Lencucha, Pal, Appau, Thow, & Drope, 2020). On the other hand, in the research of Huang, Wang, Zhi, Huang, and Rozelle (2011), the Chinese grain production subsidy, based on the sown area, not the production, found to have no distorting effect on producer decisions in terms of area and input use. Yu and Jensen (2010) also analyzed the impact of the above grain production subsidy and the impact of input purchase subsidies.

Subsidies are government assistance which are given to farmers so as to reduce their costs of production. Its government's mandatory task to correct country's market failure. Subsidies can be informed of finances or inputs. Subsidies have been long used by governments worldwide as a way to support agriculture production. Subsidies are form of government intervention to promote industries for their production (Schrank,2003). In this case it's very important to note that Zimbabwe implement wheat subsidies to play a crucial role toward food insecurity problems. The Subsidies for agriculture production might be justified by development economics framework and positive externalities for this sector (de janvry and sadoulet,2016,

WTO,2006.) are implemented to ensure that food access increased, stabilize prices and boast the country's domestic production. The recent renewed interest in subsidies is attributed to persistent acute food shortage experienced in most developing countries and the food price increase the world experienced from 2003, which was followed by the food price crisis in 2008 (FAO, 2011). The IMF (2008) reports that twenty-two countries increased food subsidies for both targeted and universal in 2008. Thus, the motivation for governments to turn into subsidies is to attain food and income security (Dorward, et al., 2008).

Through employment of subsidies, several studies confirm that subsidies produce a positive effect to the economy. Subsidies helps to reduce the costs of inputs to farmers, since there will be provision of financial support, modern machinery, fertilizers and seeds. This enables the vision of country to eradicate food insecurity to be achieved as it improves production (National Agriculture frame work2018-2030).

Food insecurity, have been reduced from few studies now, which proves that subsidies are mostly help farmers to reduce their production costs as they were given inputs , chemicals and even educational support from the government through the ministry of lands ,agriculture ,water and rural development.

2.9.2 Theory of production

The main reason for every farmer is to maximise profits and minimise business costs. Famers strive to make use of available resources sufficiently and make profits as it is the main objective of doing farming. Theory of production states that it is important to efficiently allocate resources so as to get favourable profits as well as increasing production. It is known that, the level of production is actually determined by the capital employed that is inputs such as seeds, fertilizers, labour etc. Production and process represents the conversion of inputs into outputs i.e. labour and inputs (seed) (Derbitin, 2012).

2.9.3 Theory of profit maximization

The theory of profit maximisation also known as profit maximisation theory, is an economic concept that suggests that business are there to maximise their profits. Firms are aiming to generate the highest level of profits by optimising their production costs and efficiency allocation of resources. The review will come up with the behaviour of wheat farmers as a way to maximise their profits and productivity. This theory also examines the possible use of resources at low cost which support costs minimisation.

2.9.4 Economic theory

This theory explains the economic rationale behind subsidies and their expected effects on the market outcomes. It considers concepts such as market distortion and price and income effects of subsidies. (Stiglitz 1988)

2.9.5 Price theory

Price theory explores how subsidies can disrupt price signals and effect resource allocation decision. It considers the effect of subsidies on supply and demand dynamics, price elasticity and market responsiveness (Goodwin and Mishra (2018))

2.9.6 Market power theory

This theory explains how subsidies can influence market power dynamics among producers and affect competition. It considers the potential advantages or disadvantages created by subsidies and their impact on market.

2.10 Conceptual framework

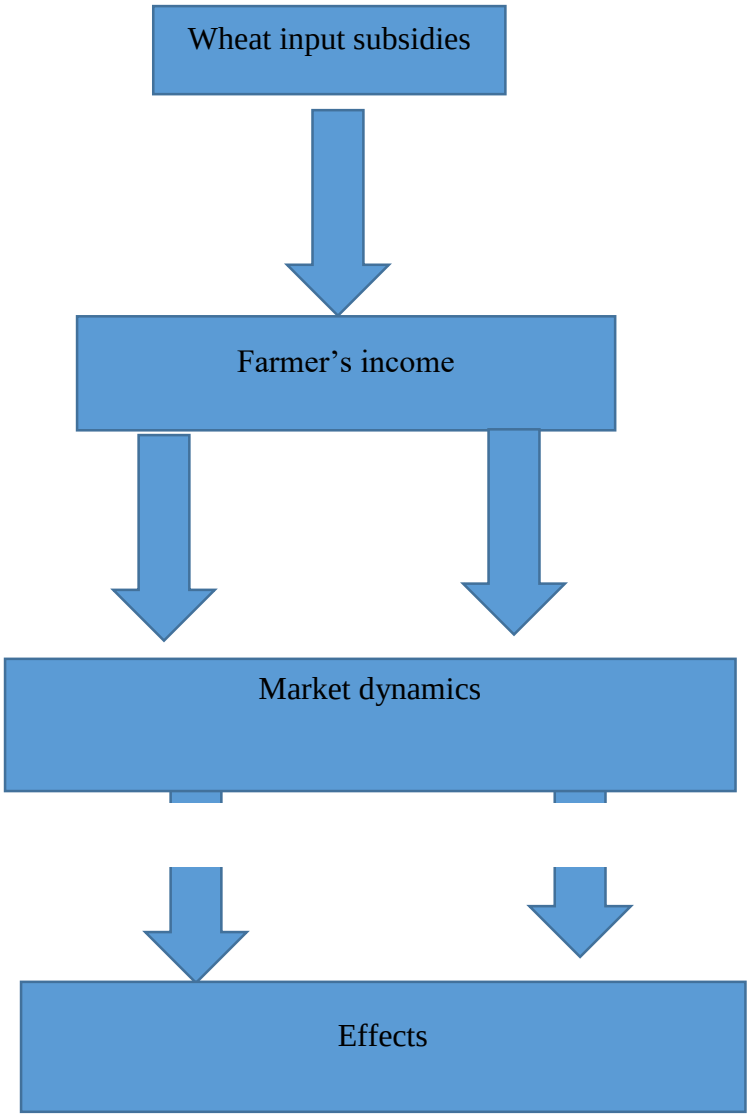

Figure 1: Conceptual framework

2.10.1 Wheat input subsidies

Wheat subsidies represents the government policies or programs that provides subsidies to wheat farmers, such as direct payment, price support or any other input support such as seeds and fertilizers.

2.10.2 Farmer's income

Wheat input subsidies can directly impact farmer's income. Subsidies enhance profitability by reducing production costs or increasing revenues, thereby influencing the financial wellbeing of farmers.

2.10.3 Market dynamics

Wheat input subsidies have implications for market dynamics. This includes factors such as supply and demand, price signals, market competition. Subsidies can affect the behavior of farmers and other market actors shaping the overall functioning of the wheat market.

2.10.4 Effects

The effects of wheat subsidies encompass various outcomes resulting from the interaction of subsidies, Farmer's income and market dynamics. These effects include changes in products levels, price, market, income distribution and trade dynamics.

2.10.5 Productivity efficiency

Productivity efficiency is the ability of a firm to produce goods or services at lowest possible costs of production. This means a firm is using all its available resources in the most efficiency way, producing maximum output using minimum input.

One of the challenges facing Zimbabwe is low productivity efficiency and mostly in agriculture sector. This is because a country currently experience drought, poor infrastructure and outdated farming practices. This leads to poor agriculture productivity, food insecurity, and the country mostly rely on imported food products which reduce country's gross domestic product (GDP). The country is employing different methods in order to improve the productivity efficiency of the nation such as command agriculture, maguta and input subsides program. This improves crop production such as wheat. The country provides inputs to farmers as well as offering them with trainings through ministry of agriculture extension education department that is AGRITEX. This support help farmer to increase their production as well as curb food insecurity scandal within a country. For farmers to produce the most possible reliable outputs, it is important to employ all resources at its full potential. This includes total use of resources such as inputs that is seeds, fertilisers, land, labour etc.

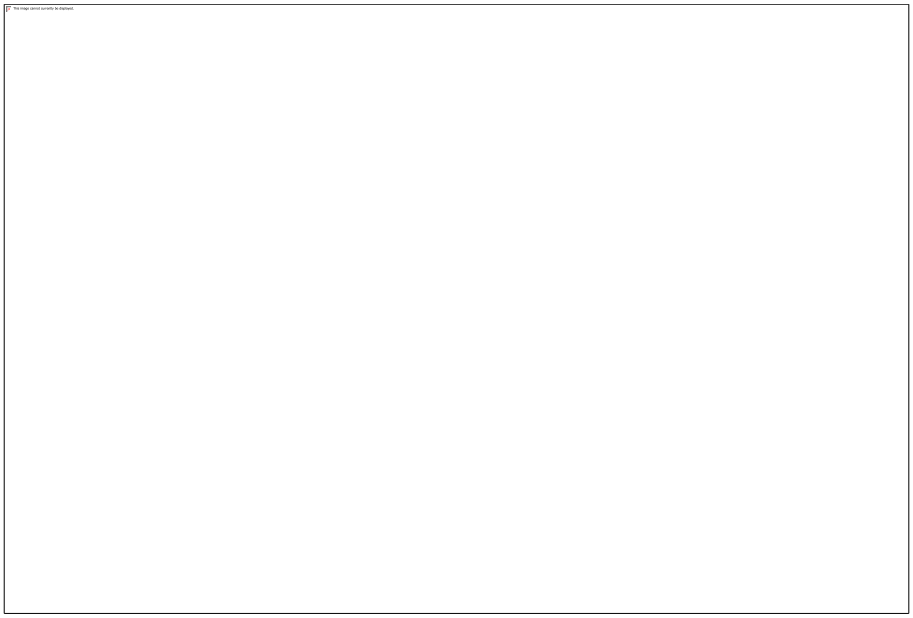

Figure 2: Productivity Efficiency

Source: SC Kumbhakar. 2023

Point A and point B are productively efficiency, this means all resources are allocated efficiently according to the resources use plan.

2.10.6 Technical efficiency

Technical efficiency is the effectiveness with which a given set of inputs used to produce an output. A farm is being said to be technically efficiency if it is producing the highest possible output using available resources such as labour, inputs, capital and technology. Technical efficiency requires full employment of resources. In the context of wheat production, technical efficiency helps to understand whether input subsidies lead to improved productivity and resource allocation. According to Smith et al 2017, subsidies lead to the significant increase in technical efficiency leading to high wheat yield, that's increase in profitability as well as productivity.

2.11 The effects of wheat input subsidies on famer's income

Income refers to the revenue received by farmers. The employment of subsidy to farmers encourage farmers to increase their productivity (SC Kumbhakar. 2023). It is important to note that subsidy manage to increase farmer's income as they increase their productivity and they're by rising their sales at a market place. According to GERALDO M, CALEGAR AND G.

EDWARD SCHUH, Effects of Brazilian Wheat Subsidies on income distribution and trade. Brazil through the wheat government input subsidy has caused a reduction in imports during the period of 1967/1973 and during the period 1978/79. This is because the wheat input subsidies encourage domestic production to the local farmers that's improving farmers' income.

An input subsidy acts as a negative tax to farmers which reduce input price paid by a farmer. The provision of subsidies for inputs such as seeds, fertilizers, and machinery positively influence famer's income (Joshi et al.2000). Subsidies enables farmers to access essential resources at reduced cost, leading to increase in productivity and high yields. This enhance to more income generation as productivity is being increased. A study according to Zhang and Liu(2017) examine that income subsidies have increased due to implementation of subsidies. However, the research found that as income increases due to the decrease in overall production costs, it states that an increase in income for farmers varies with different farm sizes such that those with large land brings more income that others due to different yield produced.

According to A.Camara. 2023, impact of agriculture input subsidy policy on market participation and income distribution in Africa. The availability of input subsidy leads to reduction of inputs such as fertilizers, seeds or machinery, leading to more participation at a market level they're by improving farmer's income.

According to ZH Shikur .2022 implementing wheat policies alongside the price support policies have direct significant effects on wheat productivity and profitability. Wheat input subsidies have been taking a direct effect to wheat profitability since it causes improvement of farmers' financial status. This help them to employ more advanced technologies, infrastructure development and they're by improving productivity leading to more profitability while Hemming .2018 says there is much evidence that a subsidy schemes are prone to inefficiency, bias and corruption. As it is stated, subsidies can lead to inefficiency and lack of productivity in the wheat productivity. Subsidies discourage innovation to farmers they're by reduce their capability to raise productivity. Subsidies are also fall under unfair distribution that favours a certain group of farmers in distribution whether they produce or not. It is important to note that this hinders the efficiency of wheat subsidies leading to low in productivity that what is expected.

Subsidies leads to market distortion as they cause over production they're by affecting the market pricing. Subsidies affect market dynamics by distorting the natural forces of supply

and demand (Empraim W. Chirwa and Andrew Dornward 2013). This can lead to inefficacy in the allocation of resources they're by reducing production and profits as well. A study by Babcock and Hennessy (2018) analyses the effects of input subsidies as the lead to market distortion. The study highlights that subsidies can distort market signals and contribute to overproduction, which exceeds the market price for farmers. Lower prices lead to reduction in farmer's income.

2.12 The effects of wheat input subsidies on market

Regarding input subsidy programs, it is witnessed that a revival of programs with greater emphasis on better targeting those considered most in need, improved linkages with other markets, and better facilitation of commercial fertilizer sales (e.g. World Bank, 2007; Morris, 2007). Yet again, there is little consensus or rigorous assessment of these programs (see Jayne and Rashildl 2013; Druilhe and Barreiro-Hurlé 2012; Morris 2007 for recent syntheses on the evidence). Exceptions include a randomized control trial by Duflo et al. (2011), which estimated a positive impact of fertilizer vouchers on fertilizer use, and a recent experimental study by Carter et al. (2014), which reported positive impacts of vouchers for fertilizer and improved seeds that were consistent with a social learning model of adoption. They found an increased use of fertilizer for households with a higher proportion of social network members receiving the voucher. These studies suggest that liquidity constraints form an important barrier to adoption of modern farming technologies.

Wheat input subsidies plays a crucial role on wheat market. Wheat input subsidies increased wheat production, as a result of employing subsidies. This lowers production costs they're by increasing production. This results in increasing famer's yield as well as overall production at a market level (Fan et al, 2017).

Wheat input subsidies also contribute to more land used for wheat since subsidies encourage farmers to produce more as their production costs are being reduced. It is important to note currently the government of Zimbabwe is concentrating to establish more into wheat due to availability of wheat subsidies i.e. midlands province. As refers according to Headey et al, 2019 more land is cultivated by famers since there is reduction in the input costs.

An increase in wheat production can be experienced due to implementation of subsidies. Wheat input subsidies have been found to stimulate agricultural productivity by reducing costs of production that is reduction in costs of inputs such as fertilizers, seeds and machinery (Anderson et al. 2018).

Nemachena et al. (2016) examined the impact of agriculture subsidies including those in wheat sector, on market performance in Zimbabwe. The study found that subsidies has mixed effects on the market while firstly it leads to the increase in production and improved food security. Its further states that wheat subsidies led to inefficiency resource allocation, private sector investment and distort price signals. This affect the market trend with price reduction. Wheat subsidies can lead to market distortion by affecting supply and demand dynamics. A study contacted by Abbott create an artificial increase in wheat production, leading to more supply of wheat, more stock and their by putting on downward pressure on wheat prices. This brings under-pricing of wheat which affect producer's profitability. On the other hand the study from Gohin and Guyomard,200 states that an increase in wheat subsidies can lead to higher wheat prices, as supply response from farmers is often greater that demand response from consumers leading to a shift in supply curve and an increase in prices.

A study by Dorward et al. (2008) in Zambia explored the effects of wheat subsidies on market functioning, drawing insights that wheat subsidies can lead to market distortion, overproduction and reduced competitiveness. The study put an emphasis on the consideration of market dynamics such as input supply, marketing infrastructure and access to credit to insure subsidies contribute to sustainable market development. Minde et al. (2017) of Tanzania examine that effects of input subsidies including wheat subsidies.

2.13 Contributions of wheat production on economic growth

Wheat is one of the cash crops around the world which plays a crucial role in countries economic growth. Wheat production becomes of the more important in economic growth as it contributes to food security, employment and export earnings. It is important to note that wheat is one of the top crops which contributes to country's GDP from agriculture sector out comes.

Wheat production plays a critical role in ensuring food security. Global food consumption of wheat is seen rising in tandem with population growth, while strong in the feed use is anticipated, especially in the European Union (Food outlook November, 2021**)** China use wheat for domestic use, that is improving food security for a country and that's enables a country to meet the demand for food. China become the largest wheat grower in the world in the season 2020/2021, it accounts about approximately 19% of global wheat consumption in the world.

According to seedco of 2024 by John Basera and Tengwe Soko, wheat contributes 4-5% of the agriculture GDP**.** Wheat production plays a significant role towards economic growth. It is important to note that it's a source of food which curbs food insecurity to the country.

According to FAO today wheat production occupy more land in production that any other crop. According to Nancy Bowen Ellzey and Elizabeth Hawkins, December 2018 wheat is the third largest crop which is produced in USA. August 2018 USDA WASE Report food use accounted for about 45%of 2017/18 winter wheat production.

One study by Gonzalez et al (2018) studies that wheat production contribute to economic growth. I t states that wheat production led to increase in agriculture and rural incomes, thus contributing to overall overall economic growth, as it generate direct and indirect employment opportunities further boasting economic development. Another study produces similar information on wheat contributions by Zhang et al. (2017) as it states that wheat production contributes to rural economic growth in China. It is founded that increase in wheat production improve farmer's income. This highlighted that wheat production is of more important to economic growth.

Furthermore, a study conducted by Mengistie et al. (2020) examine relationship between economic growth and wheat production in Ethiopia. The study found that an increase in wheat production had a positive effect on farmer's income, rural development and food security.

2.14 Review on constrains faced by wheat farmers

2.14.1 Political constraints

Political instability has also caused a great significant in wheat production. According to D Laborde.2023, the Russia-Ukraine conflict has affected the global market of wheat, since it reduces the production of wheat within the countries. This reviews that political instability has got power over production of wheat productivity and profitability. Another study found that political instability has caused an insufficiency in infrastructure development for wheat production such as silos for storage and roads for transportation resulting in lower productivity and profitability Ghulam et al (2017). Inadequate infrastructure negatively affected wheat yields and post-harvest loss.

Government regulations and policies have been a big problem to wheat farmers. This includes regulations on land ownership, production quotas and pricing controls imposed by the government. Trade restrictions such as high import tariffs and export bans hinders wheat productivity. According to Svanidze et al. (2020) states that export restrictions has put a negative outcome to wheat productivity and profitability. Land reform program is another essential political problem which is mostly faced by Zimbabwe wheat farmers. As part of land distribution strategy for Zimbabwe, land reform leads to uncertainty of land tenure. A study by

Chisango et al (2018) states that policy instability in Zimbabwe has caused a negative change in wheat productivity.

2.14.2 Financial constrains faced by wheat farmers

Higher costs of labour have been become the problem to the wheat farmers in their operation (M Naeem). Farmers are struggling to afford labour for planting, harvesting and other farming activities. Higher labour costs can lead to reduced labour availability, as farmers may opt to reduce labour cost. This can result in delay or inadequate farm operations such as planting, harvesting and maintenance which can negatively impact on wheat productivity. A study contacted in Australia by Pannell et al (2006) found that higher labour costs reduced wheat productivity and profitability as labour availability is reduced during production stages. Another study from China by Hu et al. (2017) highlighted that high labour costs can increase the adoption of mechanization in wheat production. This increase productivity and profitability since technology allows efficiency use of resources such as time when producing.

According to W Amha.2013 farmers in Ethiopia are struggle in their production is lack of access to financial and credit facilities such as banks and micro finance services. Most financial assistance services need collateral security for their permission to give an assistance, in this case farmers as for Kwekwe wheat farmer they don't have collateral security so, they failed to have assistance from banks and other financial services such as CBZ agro yield and AFC. According to Girma et al (2019) says lack of financial access and credit facilities can create working capital constrains for wheat farmers. Funds to be used for day to day farm operations will be limited that can lead to low productivity and profitability of wheat produce or yield.

2.14.3 Social problems

One of the essential problems faced by wheat farmers is inaccessibility of inputs such as seeds, fertilizers and machinery (A Abdalla.2022). According to Sajjad et al (2016) states that limited in fertilizer access has negative impact on wheat productivity. According to Berhane et al. (2017) found that limited access to improved seeds has negative effect on wheat productivity and profitability. Limited access to fertilizers can result in suboptimal nutrient management for wheat, leading to reduced yields and low profitability. Insufficient fertilizers can result in nutrient deficiencies, affecting plant growth and productivity. Limited access to quality seeds has reduce wheat productivity. Poor seed variety produce poor output which hinder profitability.

Inadequate extension services and technical support have become a problem which affect wheat farmers in their operation in Zimbabwe. Extension play a big role in providing knowledge to farmers on how to utilise resources and basic farm management during the production time. It provides information such as type of chemicals to be used, amount of every resources which are needed as well as budget for the whole production season (Chisango et al (2018). In Zimbabwe extension services have been lacking to farmers, leading the lack of knowledge to farmers on how to produce and everything for production.

2.14.4 Technical factors

Problems being faced by farmers in kwekwe in wheat production which affect their productivity is poor irrigation systems and shortage of water for irrigation. According to information from the ministry of agriculture, they manage to note that most of farmers have less access to irrigation facilities. According to A Chakawira 2016, Zimbabwe have got few small holder farmers on wet lands as well as irrigation systems, have chance to produce wheat. Since the implementation of irrigation system requires huge initial capital, farmers are failing to cope up with initial capital so there is limited production of wheat by farmers.

Farmers as they use irrigation systems which needs electricity, power shortage has reached a technical problem to the farmers. On 18 Aug, 2015, the senior government official, Rabson Gumbo say wheat production has been decline by 12% due to power outages. The ministry of Agriculture has also put a blame to power shortages that affects irrigation systems leading to the short fall in wheat production.

2.15 Institutional Constraints

2.15.1 GMB Issues

GMB has got put its market a monopoly power in the country. According to Chisango and Mushunje 2020, the GMB has a monopoly over the purchasing, storage and distribution of wheat in Zimbabwe. This monopoly restricts competition and hampers famers' bargaining power, resulting in limited markets for farmers.

Delay on payment affect wheat farmers, due to various reasons from GMB such as financial constrains faced by GMB and lack of proper monitoring systems at GMB. Delay on payments affect farmers' cash flow systems. Farmers mostly rely on the income from selling their produce to sustain their businesses and for preparations for next seasons in production. A study by Mandava et al. 2020 in Zimbabwe shows that delay on payments by GMB negatively affect farmers' productivity and profitability were adversely impacted.

Delay on input distribution also becomes a vital issue which affect wheat farmers on its productivity. Delay on inputs distribution affects planting schedules and crop quality. Time availability and application of inputs are vital for archiving optimal yields. According to Chisango and Matungira 2019 in Zimbabwe it is identified that due to late input distribution, it reduces wheat production and quality which finally affect farmers; income.

2.15.2 Agritex issues

Inadequate extension services provided by Agritex has become a big problem to wheat production. Extension services play a crucial role in providing farmers with technical knowledge and advices to farmers. However due to lack of resources agritex fails to provide such knowledge and this affects farmers output. A study from Mashingaidze et al, has put an emphasis that, they are need for improvement in agriculture extension services to enhance wheat production.

2.16 Summary

Although subsidies have put an impact on wheat, as it shown from the literature review as it affects farmers' income and market. Subsidies has put an effect on wheat productivity which affects income and market. Literature review has also brought out theoretical and conceptual framework based on the effects of subsidies on wheat. The review also cited constraints which are faced by wheat farmers which are political, institutional, financial, technical and social constraints.

Chapter 3

Research Methodology

3

3.1 Introduction

This chapter is going to highlight on the methods and procedures that were used to achieve the research objectives. It reviews on type of data used, sources of data used and analytical tools used to reach out research conclusion. This chapter outlines the research methodology to investigate on the effects of subsidies on wheat.

3.2 Description of the Area

Kwekwe district is the district which is under Midlands Province. The coordinates of kwekwe district are 19° 0'0.00"S29° 45'0.00"E (Latitude 19° .0000; Longitude 29 °7500). It is under ecological region III which receives 700-800 mm of the total rainfall. Region III has got summer season and winter as well. Wheat production is actually done during the winter season that's what we call winter wheat. Kwekwe district experience rainfall during hot summer season and it is rich with black and red soils for crop production.

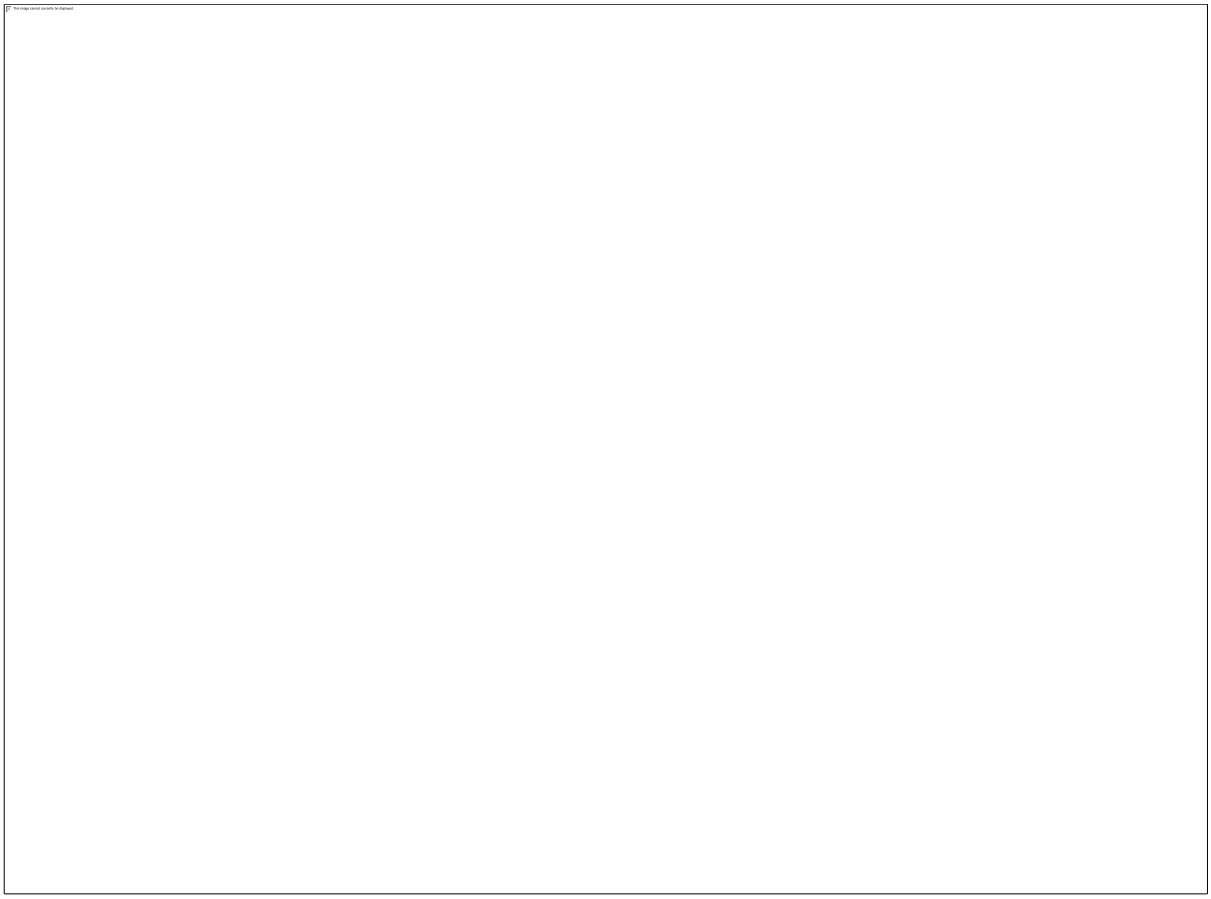

Figure 3: Kwekwe district map

Source: The map of Kwekwe district and data collection sites Place alert 2019.

3.3 Data collection methods

Primary and secondary data collection methods were used to fetch data from different people including government workers such as extension workers, district agronomist and wheat farmers. Primary were collected through focus groups and interviews of door to door to farmers. Questioners were designed in both open and closed questions. Government officials such as extension workers helps me gather information from farmers.

3.3.1 Secondary data collection

Secondary data were collected from Agritex crop production department so as to understand the area studied. Obtaining data from ministry of agriculture can allow to get much valuable information since it's the one of government agencies which deal with agriculture production. Data were also collected from other stakeholders such as GMB, seed companies and AMA. Every stakeholder should provide data according to their area of specialist. Agritex were provide information of farmers who are producing wheat through government subsidies. GMB were provide information on the market prices and production they received.

3.3.2 Primary data

Primary data was collected through interviews and focus groups. A well-designed questioner was used to gather data from farmers. Farmers were selected from the pull of farmers obtained from Agritex. Farmers were chosen randomly. Questioners were in open and closed questions.

3.3.3 Sampling Procedure

The researcher used random sampling to choose farmers from one of the wards that is ward 5 from kwekwe district since it will be difficult to collect data from the whole district due to challenges such as time constrains and financial shortages. Farmers who practices wheat production under government input subsidies will be contacted for data collection. A list of farmers who are under government input subsidies beneficiaries were collected from kwekwe district Agritex offices. 50 farmers were randomly selected from kwekwe district ward 5 wheat producers under government wheat subsidies.

3.3.4 Key informative interviews

Key informative interviews involving contacting individuals who have deep understanding about wheat subsidies and its outcomes. In this case for assessment of government wheat input subsidies on wheat production it needs interviews with government officials such as extension workers, seed companies such as seed-co, famers and other related officials which are in line with these subsidies such GMB. This method needs to address specific issues concerned about wheat subsidies distribution to farmers such as challenges faced by farmers, factors which affect farmers for wheat production and impact of subsidies on wheat productivity and profitability in Kwekwe district. Informative interviews bring an insight on how officials or stakeholders see the implementation of wheat subsidies.

3.3.5 Focus group discussion

Focus group discussion involves the bringing of farmers together, specifically wheat input subsidies beneficiaries to discuss on the objective related to wheat production dived from benefits of getting wheat subsidies. Focus groups allows sharing of information based from beneficiaries of subsidies. Participants share their experience that they have in wheat production through implementation of wheat subsidies such as challenges they are facing, and also brings recommended solutions to their problems. The effectiveness of the implementation of subsidies were also gathered from participants as they have experience through first-hand information.

3.3.6 Surveys

Surveys involves the collection of data from the farmers using questioners. In this case information gathered from Kwekwe ward 5 from 50 selected farmers. The questioners designed to contact survey includes issues of profitability and productivity of subsidies, factors which affect farmers while producing and lastly challenges which farmers were facing in wheat production. Survey help to get much more of data needed which is quantitative for analysis.

3.4 Data analysis methods

The researcher is going to use Statistical Package for Social Science (SPSS) for data analysis. The researcher is going to use SPSS because it is a free online software which analyse data and also it is easy to use for data analysis. Table, charts and graphs will be used for data analysis. Likert scale were used to assess challenges which were being faced by farmer under wheat input subsidies production in kwekwe district.

3.4.1 Summary of objectives, data required and analytical tools

Table 1:Summary of objectives, data require and anyltical toools.

Objective	Research question	Analytical tool	variables
To determine the effects of subsidies on farmer's income	How do government subsidies impact on farmer's income?	Regression analysis	Dependent variable: Farmer's income ,Independent variables, crop yield, input cost, market price, farm size, subsidy amount, education and training, access to technology, weather conditions
To determine the effect of subsidies on market	What is the impact of government subsidies on wheat market?	Time series	Subsidy amount, market price, demand,

To examine constrains faced by farmers	What are the production constraints faced by farmers?	Likert scale	Economic problems, social problems , financial problems and institutional problems

3.4.2 Regression analysis

Regression analysis is a statistical technique used to model and examine the relationship between a depended variable and one or more independent variables. It is used to understand how changes in one variable are associated with changes in one variable.

The key objective of regression analysis is to estimate the parameters of a regression equation that best presents the relationship between variables. The regression takes form:

$$Y = B_0 + B_2 + \dots\dots + B_n + e$$

Y = is the depended variable, which is the variable being predicted or explained i.e. Wheat

3.4.3 Table of description of variables in the regression analysis

Table 2: Description of variables in the regression analysis

Variables	**Type of measure**	**Expected sign**
Dependant variable		
Income	continuous	+/-
Independent variables		+/-
Farm size	continuous	+/-
Level of education	continuous	+/-
Gender	continuous	+/-

Cost of production	continuous	+/-
Extension services	continuous	+/-
Wheat output	continuous	+/-

3.4.4 Likert scale

A Likert scale is a psychometric scale commonly used in surveys and questioners to measure attributes, opinion and behaviour of respondents. It typically consist of statements or questions to which respondents indicate their level of agreement or disagreement. The scale is named after the founder Rensin Likert. Respondents are usually presented with range of options such as strongly agree, agree, neutral, disagree and strongly disagree. Likert scale provides a way to gauge people's feelings or attitudes towards particular subject.

3.4.5 Constraints which are faced by wheat farmers

Table 3; Constraint faced by wheat farmers

	0	**1**	**2**	**3**	**4**
Economic constrains					
Lack of access to credit facilities					
high input costs					
Fluctuations of prices at a market					
Social constrains					
Inadequate education					

Gender issues					
Land tenure issues					
Technical constraints					
Poor irrigation systems					
Shortage of power					
Political constrains					
Poor governance					
Corruption on input distribution					
Political instability					
Institutional constraints					
GMB issues					
Delay on input distribution					
Delay on payments					
Grading system issues					
CBZ issues					
Lack of collateral security					
Lack of financial literacy					

Information asymmetry					
Agritex issues					
Limited extension workers					
Inadequate trainings					
Lack of technical support					
Government issues					
Poor policies					
Political instability					
Corruption i.e**.** Nepotism**,**					
Family issues					
land disputes					
Gender inequalities					
Inheritance conflicts					

1- **Strongly disagree**
2- **Agree**
3- **Neutral**
4- **Agree**
5- **Strongly agree**

3.5 Time series

Time series is the study and modelling of data that is collected and observed over time ie year after year. Time series provides trend analysis by identifying patterns, variations and so on. This method is particularly to understand trends, patterns and behaviour with in data i.e. productivity and data price.

Chapter 4

Results and discussion

4

4.1 Introduction

The world is endangered by food shortage due to exponential growth in populations which are coupled by very constant food production levels. By 2060, the population of SSA alone could grow to 2.7 billion people from the present 1 billion(Worldbank 2020). In SSA, around 330 million young people are expected to join the labor market between 2010 and 2025, around 40 percent of them initially located in rural areas (Munongo and Shallone, 2010) . Climate change on the other hand increases the risk an exposure of rural communities to hunger. Climate sensetive agriculture has the ability to reduce susceptabiltiy of the communities and houesholds. The government of Zimbabwe introduced wheat input subsidies program which

complimented the government's input distribution scheme. It is therefore imperative to look at the viability of wheat production under input subsidie program which is a government strategic plan to eliminate low productivity. This chapter looks at the presentation of data for this study.

4.2 Effects of subsidies on farmer's income

Table 4: Regression Model Summary

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics			
					R Square Change	F Change	df1	df2
1	.459[a]	.210	.079	.69913	.210	1.599	7	42

a. Predictors: (Constant), market price, level of education, wheat output per ha, farm size, extension trainings market prices, costs of production.

b. Dependent Variable: income

Based on the model summary provided, here is an interpretation of the results:

R: The multiple correlation coefficient (R) is 0.459, indicating a moderate positive correlation between the independent variables (gender, level of education, wheat output per ha, farm size, extension trainings, market costs of production) and the dependent variable (income).

R Square: The R-squared value is 0.210, meaning that the independent variables in the model explain 21% of variation in the dependent variable (income).

Table 5: Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		

(Constant)	2.389	.937		2.550	.015
Age group	.113	.142	.131	.791	.433
wheat output per ha	-.514	.231	.354	-2.226	.031
costs of production	-.112	.153	.123	-.735	.466
farm size	.022	.232	.015	.094	.925
level of education	.011	.122	.014	.087	.931
extension trainings	-.166	.211	.115	-.788	.435
Market price	.057	.215	.037	.263	.794

Key: Significant : 0,05 and below

Insignificant: greater than 0,05

Dependent Variable: Income

Wheat output per hector is statistically significant at the 0.05 level (t = -2.226, p = 0.031). This states that there is relationship between wheat output per hector and farmer's income. As wheat output increases farmer's income also increases. This is with evidence from Hermmig 2018 study which states that input subsidy have direct impact on output thereby increasing income. Total increase in wheat output i.e. more tonnes obtained from produce contributes to more total revenue gained by farmers. With this regards it is important to note that wheat subsidies has caused a decrease in total production costs of farmer i.e. costs of inputs such as seeds, fertilizers and chemicals such as herbicides and pesticides

4.3 To determine the effects of subsidies on wheat market

Price analysis

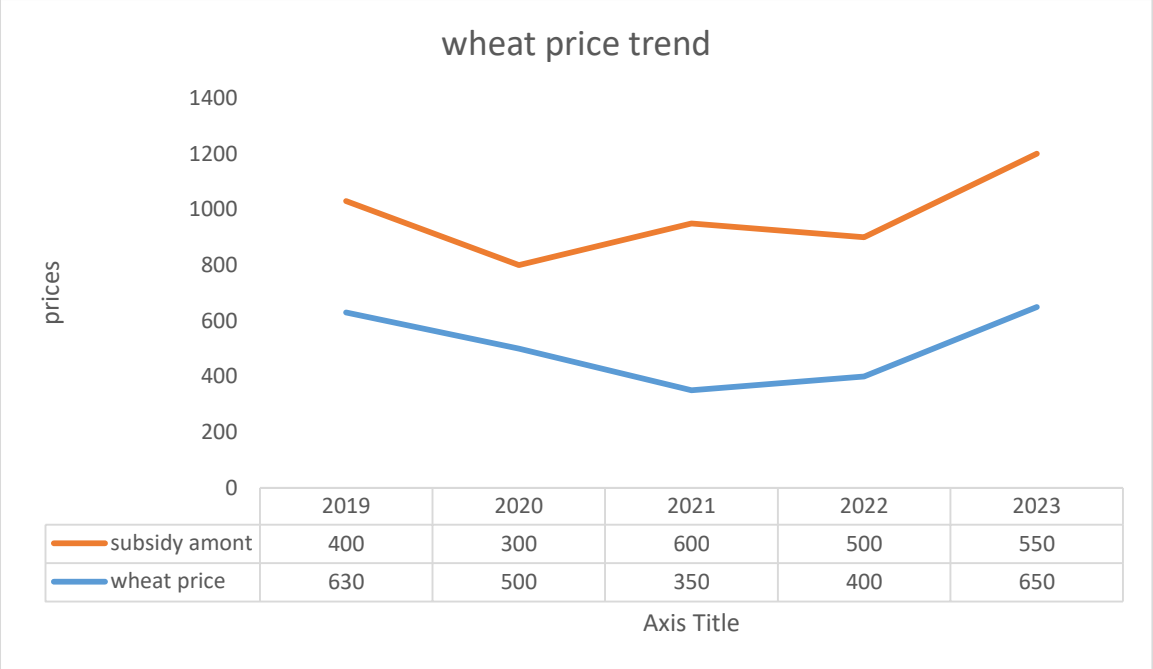

Figure 4: Price Analysis

The price of wheat increases from 350 usd to 400 usd per tonne for the year 2021 to 2022. It also increases from 400usd to 650 usd per tonne for the year 2022 to 2023. This shows that subsidy amount and wheat price have direct proportional relationship. This is witnessed by Gohin and Guyomard 2000 which states that an increase in subsidy amount cause a positive respond to price. 2019 to 2020 subsisy amount decreases from 400 usd to 300 usd, this contributes to the falling of wheat prices from 630 us to 500 usd.

4.4 Constraints faced by farmer

Table 6: Constraints faced by wheat farmers

Variable	Frequency	Strongly agree		agree	Neutral	Disagree	Strongly disagree
Corruption	50	3		19	18	6	4
Lack of extension services	50	2		29	11	7	1
Lack of credit facilities	50	20		15	11	4	0

Delay on input distribution	50	16		30	0	4	0
Delay on payments	50	28		16	4	0	2
Family disputes	50	6		17	17	7	3
Inheritance conflicts	50	11		19	15	4	1
Government policies	50	3		19	18	6	4
Gender inequalities	50	5		29	14	1	1

Most farmers were strongly that delay on payments was the most constrains which are affecting their production as wheat farmers with 28 out of 50 farmers who are strongly agree that delay on payment affect their wheat production. As it is noted from the study by Mandava et al. 2020 in Zimbabwe shows that GMB is failing to deliver payments and inputs to farmers in time which becomes a big issue to farmers as they disturbs their production time table. Farmers rely on the timely payment from the G.M.B for their produce to cover their operational expenses such as labour, disking, seed expenses and many more other transactions during production. When payments are delayed farmers faced challenges in meeting these immediate financial obligations, leading to cash flow problems. The least constraint which was faced by farmers is lack of extension services with 2 of farmers which are strongly agree that extension services affect their production.

Chapter 5
Conclusion and Recommendations

4.5

5.1 Summary

This study was on the assessment of the effects of subsidies on wheat. A case study of Kwekwe district, Dunlop extension ward 5. The objectives of the study were to determine the effect of subsidies on farmer's income, to determine the effect of subsidies on wheat market and to

evaluate constraints faced by wheat farmers. A random sample of 50 farmers were contacted so as to gather information on the effects of subsidies on wheat. The researcher used structured questioner to gather information of the study. To find out the effects of subsidies on farmer's income, regression analysis was used, to determine the effect of subsidies on market, time series was used and to evaluate constraints faced by wheat farmers, Likert scale was used. It is with evidence from the results, that wheat output has got significant level of 0,05 and p value of 0,031 which signifies that there is direct proportion between income and wheat output. On the effects of subsidies on market, it shows that an increase in subsidy amount cause an increase in wheat output. Price rises from 550 USD to 650 USD from the year 2022 to 2023. This agrees the law of supply which says producers supply more at higher price. In this case, price increase was due to the government regulation which increases prices for wheat produce to motivate farmers to grow. The major constraint faced by farmers was delay on payment as 28 out of 50 farmers strongly agree that delay on payment was affecting their production.

5.2Recommendations

5.2.1To determine the effect of subsidies on farmer's income

Government should continue in providing subsidies to wheat farmers so as to increase farmer's income. Government should also include Non-governmental organization (NGOs) engagement in provision of subsidies to wheat farmers. Encourage of remittances from diaspora and working class. Financial sector such as banks like CBZ should be encouraged to continue supporting wheat farmers with subsidies.

5.2.2To determine the effects of subsidies o wheat market

Government should continue to motivate farmers with incentives such as subsidy.

5.2.3To evaluate constraints faced by wheat farmers

Government should improve on the payment period as this will encourage farmers to produce. Private sectors such as agri foods ad national food should be encouraged by the government to work out with farmers so as to assure payment of farmers in time.

5.3Conclusion

Farmer's income increased as wheat output increases. Higher wheat produce allows farmers to sell more and earn more revenue. Wheat prices has been increased at market from 2022 to 2023, this was due to government announcement new increased producer price from 550usd to 650 usd, so as to motivate farmers to grow more wheat. Delay on payment to farmers have been major constrain faced by wheat farmers.

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List of Appendixes

Appendix 1
Questioner

Section A

Demographic information

What is your gender?

☐ Male ☐ Female

What is your age group?

☐ 20-30 years
☐ 30-40 years
☐ 40-50 years
50-65± years

Your marital status

Single Married Widow Divorced

What is your level of education?

Primary **Secondary** **Tertiary**

Section B

To **determine the effects of subsidies on farmer's income.**

Are you aware of the wheat subsidies provided by government in your area?

Yes No

If you are aware of subsidies what type of subsidies are provided? Select all that apply

Direct payments

Price supports

Input assistance e.g. fertilisers, seed and machinery

Others(specify)

How do you perceive the impact of wheat subsidies on your income?

Subsidies have significantly increase my total income

Subsidies have moderately increase my income

Subsidies have no significant towards my income

Subsidies have reduced my income

I'm not sure

Have wheat subsidies influenced your decision making regarding production and marketing of wheat?

Yes positively

Yes negatively ☐

No there is no significant ☐

What is the average yield of wheat per hectare you produce?

How does the availability of government input subsidies affect your costs of production?

What is the current wheat prices per tonne at a market place i.e. GMB, National foods etc.?

How the availability of input subsidies does affects farmer's decision on production?

How many hectors you grow wheat

What is the number of your permanent workers for wheat production?

How does presence of other crops affect your production?

How does presence of pests affect your production?

Section C

To determine the effect of subsidies on market.

In your own opinion how does the wheat subsidies influence or affect the overall supply of wheat in the market?

Increasing supply ☐

☐

No change

Reduce supply ☐

How do you perceive the impact of wheat subsidies on market prices

Reduced market prices. ☐

Increases market prices ☐

What is the current wheat prices per tonne at a market place i.e. GMB, National foods etc.?

Section D

To examine constrains faced by farmers

	0	**1**	**2**	**3**	**4**
Economic constrains					
Lack of access to credit facilities					
high input costs					
Fluctuations of prices at a market					
Social constrains					
Inadequate education					
Gender issues					
Land tenure issues					
Technical constraints					
Poor irrigation systems					
Shortage of power					
Political constrains					
Poor governance					
Corruption on input distribution					
Political instability					
Institutional constraints					
GMB issues					
Delay on input distribution					
Delay on payments					
Grading system issues					
CBZ issues					
Lack of collateral security					
Lack of financial literacy					
Information asymmetry					
Agritex issues					
Limited extension workers					
Inadequate trainings					
Lack of technical support					
Government issues					
Poor policies					

Political instability					
Corruption i.e**.** Nepotism**,**					
Family issues					
land disputes					
Gender inequalities					
Inheritance conflicts					

1- **Strongly disagree**
2- **Agree**
3- **Neutral**
4- **Agree**
5- **Strongly agree**