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Faculty of Agriculture and Environmental Science

Department of Agricultural Economics, Education and Extension

ANALYSING THE IMPACT OF GOVERNMENT INPUT SUBSIDIES ON THE EFFICIENCY AND EQUITY OF THE SEED DISTRIBUTION FOR SMALLHOLDER FARMERS IN BINDURA DISTRICT, ZIMBABWE

Submitted by

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A dissertation submitted in partial fulfilment of the requirements for the Bachelor of Science Honours degree in Agricultural Economics and Management

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DECLARATION

I hereby declare that the research project entitled **"An Analysis of Government Input Subsidies on the Efficiency and Equity of Seed Distribution for Smallholder Farmers in Bindura District, Zimbabwe"** submitted to the Bindura University of Science Education, Department of Agricultural Economics, Education and Extension, is a record of original work carried out by me under the guidance and supervision of **Dr A. C. Mujeyi**. This work is submitted in partial fulfilment of the requirements for the Bachelor of Agricultural Science Honours Degree in Agricultural Economics and Management.

I further declare that the results presented in this dissertation have not been submitted to any other university or institution for the award of any degree or diploma.

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DEDICATION

I dedicate this research project to my parents, Mr. and Mrs. Chiimbira and to my younger brother Ardonai. Their unwavering support and encouragement have motivated me throughout my academic journey and to complete this study.

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ABSTRACT

Smallholder farmers in Zimbabwe continued to struggle with food insecurity and low productivity despite the government's input support programs, particularly the Pfumvudza/Intwasa program. The research sought to analyse the impacts of government input subsidies on the efficiency and equity of the seed distribution network among the smallholder farmers in Bindura. The research investigated objectives, such as the efficiency of seed distribution, equity in access, determinants influencing farmers' access, challenges faced by farmers, and recommendations. The mixed- research approach was used to collect qualitative and quantitative data from smallholder farmers. The findings showed that 97% of farmers were eligible for government input subsidies, yet 17% of eligible farmers received no input. This indicated inequalities within the input distribution system. Additionally, access to inputs was relatively poor, with ease of access recording a mean score of 2.84. The timing of inputs was another challenge; 50% of farmers received the inputs 5 to 8 weeks after rainfall began, resulting in delayed planting. Only 4% received inputs within the optimal two-week window. Regression analysis revealed that four factors significantly affected access at the 5% level: education level, household size, late distribution, and insufficient seed quantities. The challenges reported by farmers included long distances, high transportation costs, delayed delivery, inadequate quantities, and poor-quality inputs. The findings further identified that disadvantaged groups, especially the disabled and elderly households, faced the greatest barriers, with additional constraints faced by female-headed families and farmers in rural areas. The research concluded that logistical and institutional challenges continued to affect the effectiveness and efficiency of seed distribution among smallholder farmers. The study recommended improving the timeliness of input delivery, strengthening beneficiary targeting systems, expanding extension services, and improving rural infrastructure to improve the effectiveness of government input subsidy programmes.

Keywords: Input subsidy programmes, seed distribution, smallholder farmers, efficiency and equity

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LIST OF ACRONYMS

AFC: Agricultural Finance Corporation

AGRITEX: Agricultural Technical and Extension Services

AGRA: Alliance for a Green Revolution in Africa

CA: Command Agriculture

FAO: Food and Agriculture Organisation

IFAD: International Fund for Agricultural Development

IMF: International Monetary Fund

MLAFWRD: Ministry of Lands, Agriculture, Fisheries, Water, and Rural Development

NGO: Non-Governmental Organisation

NDS1: National Development Strategy 1

OECD: Organisation for Economic Cooperation and Development

SPSS: Statistical Package for the Social Sciences

USA : United States of America

UNDP : United Nations Development Programme

ZFC : Zimbabwe Fertiliser Company

ZIMSTAT : Zimbabwe National Statistics Agency

ZEPARU: Zimbabwe Economic Policy and Research Unit

ZIMREF : Zimbabwe Reconstruction Fund

CHAPTER 1: INTRODUCTION

This chapter presents the background of the study, the problem statement, the objectives of the study, the research questions, the hypothesis and justification of the study, the delimitations, the limitations, and the conclusion and overall organisation of the study.

1.1 BACKGROUND OF THE STUDY

The agriculture sector of Zimbabwe is a major contributor to the economy; it employs approximately 70% of the population, promotes food security and generates foreign currency (Makuvaro et al., 2017). Despite agriculture's important role, food insecurity remains a persistent challenge at both the international and regional levels, especially among smallholder farming communities, even with ongoing free input support programs (Pindiriri et al., 2021). Globally, around 691 and 783 million people are facing hunger, with women and rural people being among the most vulnerable groups (FAO et al., 2023). In Africa, approximately 20% of the population faces food insecurity, while in Zimbabwe, more than 48% of households experienced difficulties accessing adequate food during the 2023 lean season (FAO, 2023). These trends are associated with macroeconomic volatility, rising input costs, climate change, and drought, thus posing a threat to agricultural productivity (Gold & Anagun, 2026).

In Zimbabwe, smallholder farmers contribute significantly to national food and nutrition by growing staple crops such as maize and selling surplus output (Rubhara, 2020). On a global scale, these farmers account for about 35% of food production using only 12% of agricultural land (Lowder et al., 2016). In Zimbabwe, agricultural productivity is constrained by structural challenges, including limited access to essential inputs such as seeds, fertilisers, and chemicals during peak seasons (AGRA, 2019). The availability of agricultural inputs is important for improving productivity, but the success of these inputs is determined by efficiency and equity of their distribution (Jayne et al., 2018).

The development of input delivery systems in Zimbabwe has been significantly marked by periods of instability. The economic crisis between 2000 and 2008 led to hyperinflation, which destroyed the private-sector supply chains and left small-scale

farmers without the financial means to acquire even basic agricultural inputs (Pindiriri et al., 2021). In recent years, these local weaknesses have been aggravated by external shocks.

The coronavirus pandemic disrupted agricultural extension services, as extension failed to deliver inputs to rural farmers, leading to reduced productivity and incomes (Chari et al., 2022). In addition, the Russia-Ukraine conflict contributed to a sharp increase in fertiliser and fuel prices (FAO, 2022). In addition, escalating geopolitical tensions in the Middle East, concerning the Strait of Hormuz, have increased global energy prices for food systems and vulnerable economies (UNCTAD, 2026). Since Zimbabwe relies heavily on imported fuel and fertilisers, these global developments have raised production and transportation costs, thereby increasing the costs of inputs available to farmers (UNCTAD, 2026).

Moreover, the intensifying climate crisis has necessitated a shift toward climate-resilient crops such as sorghum and millet, placing additional pressure on distribution systems to be responsive to changing agro-ecological needs (FAO, 2021). Consequently, agricultural input distribution systems are expected to become more responsive to varying agro-ecological conditions and farmer needs.

In response, various input support programmes have been introduced in Zimbabwe to improve food security and increase productivity. One of the major programmes was the Command Agriculture introduced in the 2016-2017 season, which aimed to achieve national maize self-sufficiency and reduce the import bill; however, it faced criticism regarding fiscal sustainability and operational transparency (Musonza & Hlungwani, 2024). The Pfumvudza/Intwasa Program (2020/2021) was subsequently implemented as a climate-smart agriculture initiative, a conservation-based initiative promoting minimum tillage, mulching, and efficient land utilisation (Government of Zimbabwe, 2020).

By the 2024/2025 farming season, the number of households participating in the Pfumvudza subsidy programme had risen to over 3.5 million farmers nationwide, with more than 52,000 households involved in Bindura District (Jiri, 2025; The Herald, 2024). However, these programs often conceal systemic weaknesses, particularly in rainfed areas such as Bindura, where logistical failures can delay planting and reduce

productivity (Jayne et al., 2018). Also, the continued use of standardised input packages may fail to address ecological diversity and local farming needs, thereby leading to the distribution of seed maize in places where small grains would be most appropriate (Scoones, 2021).

Bindura District, located in Mashonaland Central Province, faces problems associated with delayed seed delivery, weak distribution networks, and poor coordination among the stakeholders. Despite the heavy reliance on these subsidies, there is limited empirical evidence at the district level concerning how efficiently these seeds and other inputs are delivered and whether the distribution is truly fair across gender and poorer groups. This research seeks to analyse the impact of government input subsidies on efficiency and equity of seed distribution in Bindura District and to propose evidence-based strategies for improving the sustainability and fairness of agricultural support.

1.2 STATEMENT OF THE PROBLEM

Despite substantial government investment in agricultural input subsidy programmes such as Presidential input support and Pfumvudza programmes, distribution of subsidised seeds among small-scale farmers remains inefficient and inequitable. In Bindura district, many smallholder farmers continue to receive inputs late and in insufficient amounts; for example, seed packs distributed are below the standard hectare requirements, forcing households to either reduce the area cultivated or rely on their limited savings to supplement the deficit. In addition, sometimes the subsidised inputs are in forms that are not suitable for local agro-ecological conditions. However, these challenges affect timely planting, reduce agricultural productivity, and ultimately weaken the effectiveness of subsidy programmes (Jayne et., 2018).

Additionally, access to subsidised inputs is unevenly distributed among different farmer categories, including women, youth, older people, and resource-constrained households. Hence, such inequalities contradict the core objective of input subsidy programmes, which is to assist the vulnerable farmers of Zimbabwe and promote inclusive development. Moreover, these inequalities are inconsistent with the objectives of the National Development Strategy 1 (NDS1), which emphasises inclusive economic growth,

poverty reduction, and improved livelihoods through equitable access to productive resources (Government of Zimbabwe, 2021). Although several studies have examined agricultural input subsidy programs at national and regional levels, very little research has focused on the efficiency and equity of seed distribution among the different categories of farmers. This dissertation seeks to analyse the impacts of government subsidy programmes on efficiency and equity of seed distribution among the smallholder farmers in Bindura.

1.3 RESEARCH OBJECTIVES

1.3.1 MAIN OBJECTIVE OF THE STUDY

To analyse the impact of Government Input Subsidies on the efficiency and equity of seed Distribution for smallholder farmers in Bindura District, Zimbabwe.

1.3.2 SPECIFIC OBJECTIVES OF THE STUDY

i. To analyse the efficiency of government input subsidies to smallholder farmers.
ii. To determine the equity of the seed distribution network by comparing the accessibility and quantity of subsidised seeds received across different smallholder farmer categories (e.g., gender, farm size, wealth quintile).
iii. To analyse the determinants influencing smallholder farmers' access to subsidised seed.
iv. To identify the key challenges faced by smallholder farmers in accessing subsidised seed inputs.
v. To propose measures and recommendations for improving the efficiency and equity of seed distribution under government input subsidy programs.

1.4 RESEARCH QUESTIONS

i. How efficient is the government input subsidy program in supporting smallholder farmers?

ii. To what extent is the seed distribution network equitable across different categories of smallholder farmers (e.g., gender, farm size, and wealth quintile)?
iii. What factors determine smallholder farmers' access to subsidised seed?
iv. What key challenges do smallholder farmers face in accessing subsidised seed inputs?
v. What measures can be implemented to improve the efficiency and equity of seed distribution under government input subsidy programs?

1.5 HYPOTHESIS

Government input subsidies have no significant effect on the efficiency and equity of seed distribution among smallholder farmers in Bindura District.

Government input subsidies significantly affect the efficiency and equity of seed distribution among smallholder farmers in Bindura District.

1.6 JUSTIFICATION /SIGNIFICANCE OF THE STUDY

The research study is significant because smallholder farmers continue to face poverty, lower incomes and reduced yields, often driven by persistent inefficiencies and inequalities in input distribution networks. These challenges hinder the effectiveness of government input support schemes such as the Pfumvudza/ Intwasa Program. Conducting the research is crucial for both agricultural policy and rural development in Zimbabwe. Hence, by studying the impact of government input subsidies on efficiency and equity of seed distribution, we will be able to identify logistical constraints, distribution inefficiencies and cost inefficiencies. Moreover, the research is important for determining whether the inputs reach the intended beneficiaries, such as female-headed households, the elderly, the poor, the disabled and remote-area farmers. The research findings will give policymakers clear recommendations for improving the design and implementation. Hence, this will give farmers better access to quality seeds and other inputs, potentially raise farmers' output and strengthen food and nutrition security. Hence, a smooth and fair input distribution network will, in the long run, contribute to national goals of reducing imported food and promoting self-sufficiency through increased local agricultural

production in areas such as Bindura. In summary, this study provides practical, evidence-based insights that help inform policy decisions, improve input distribution networks, increase productivity and reduce inequalities among farmers.

1.7 SCOPE /DELIMITATIONS

Scope of the study

The research focuses on the effects of government input subsidies on efficiency and equity of seed distribution networks. It analyses how government input schemes such as the Pfumvudza affect timeliness, adequacy, and accessibility across different socio-economic groups. Additionally, it examines the impacts of government input subsidies on farmers' productivity, food security, and farmers' income in Bindura. The study also examines the challenges farmers face in accessing inputs, including high transport costs, poor input quality, insufficient input packages, and distribution delays

Delimitations

The study is delimited to smallholder farmers who depend on government input schemes, including communal farmers, A1 farmers and female-headed households. Geographically, the research is limited to Bindura district and does not cover other places in Mashonaland Central. The study focuses on seed distribution, but also recognises other complementary inputs such as fertilisers and agro-chemicals.

1.8 LIMITATIONS

The research study was affected by financial constraints and limited financial resources. Additionally, during the survey, some respondents were reluctant to give detailed information due to political connections surrounding the programme (Mutenje et al, 2021). Additionally, information collected from the farmers was likely to be affected by memory lapses. These limitations were mitigated by using multiple research techniques, including interviews, surveys, and document reviews, to improve the reliability and validity of the findings (Bryman, 2016).

1.9 ORGANISATION OF THE REPORT

This dissertation is categorised into five chapters.

Chapter 1 (Introduction): The first chapter introduces the research by giving an overview of the background, problem statement, objectives, research questions, and justification.

Chapter 2 (Literature Review): reviews relevant literature and theoretical frameworks

Chapter 3 (Methodology): outlines research design, data collection methods, and sampling procedures

Chapter 4 (Results and Discussion): presentation of research findings and discussion of results

Chapter 5 (Conclusions and Recommendations): summary of findings, provides conclusions and recommendations.

1.10 SUMMARY

In summary, the research study aimed to examine the effectiveness and efficiency of government input subsidies targeting smallholder farmers, focusing on programs such as Pfumvudza /intwasa programmes. The study reveals that although government efforts have ensured an increase in food security and agricultural production, inefficiencies, for example, delayed input distribution and inequalities based on wealth, gender and social status continue to exist. The study is closely aligned to the National Agricultural Policy Framework, which embraces inclusive agriculture, resource distribution, and sustainable livelihoods in line with Vision 2030. The study sought to address challenges farmers face in Bindura and other districts of the country by promoting fair access to agricultural support programmes. Hence, if properly implemented, these support programmes have the potential to increase both crop and livestock production and can help restore Zimbabwe's position as the breadbasket of Africa.

CHAPTER 2: LITERATURE REVIEW

2.1 INTRODUCTION

This chapter provides a critical review of input subsidy programs with a clear focus on key variables that are efficiency, equity, access factors and the challenges facing smallholder farmers. This chapter is guided by institutional theory (North, 1990) and market failure (Pettinger, 2019). Additionally, the chapter reviews the design and implementation of input subsidy schemes aimed at improving agricultural productivity, food security and rural livelihoods. The Literature review draws evidence from developed economies, Sub-Saharan Africa and Zimbabwe to provide a broader perspective on the subject under investigation.

2.2 DEFINITION OF OPERATIONAL TERMS

Input Subsidy programmes: government support schemes that lower the costs of inputs, including seeds, fertilisers, and agrochemicals. Hence, examples of such programmes include the Pfumvudza/ Intwasa programme.

Efficiency: is the extent to which input government input support programmes distribute inputs in a timely, cost-effective, and well-coordinated manner. In this study, efficiency is measured using indicators such as the timeliness of seed delivery, the adequacy of input quantities, and the effectiveness of the distribution process.

Equity: refers to fairness and inclusiveness in the distribution of subsidised agricultural inputs among farmers. This study focuses on whether farmers from different

socioeconomic backgrounds, gender groups, age categories, and farm sizes had equal access to subsidised seeds.

Seed Distribution: refers to the process through which subsidised seeds are allocated, transported, and delivered to beneficiary farmers under government input subsidy programmes.

Smallholder Farmers: refers to the farmers operating on relatively small pieces of land, usually relying on family labour and limited financial resources for agricultural production.

2.3 THEORETICAL FRAMEWORK

2.3.1 INSTITUTIONAL THEORY

The Institutional theory, developed by North (1990), suggests that economic behaviour is guided by the "rules of the game " that consist of formal institutions (laws, policies, and administrative procedures) and informal institutions (norms, customs, and power relations). The theory suggests that strong institutions help promote transparency, accountability, and efficient programme implementation. Weak institutions contribute to inequalities and inefficiencies, which compromise agricultural productivity. Many government input subsidies in Zimbabwe have faced challenges due to weaknesses in institutional systems. These include weak coordination among implementing agencies, inadequate mechanisms, and in the consistencies in the criteria used for allocation (Pindiriri et al., 2021). When formal institutions are weak, issues such as political connections and patronage networks exist, resulting in unfair allocation of inputs. This will mean wealthier farmers benefit from subsidised inputs while vulnerable groups are excluded (Tagara, 2020). Hence, this concludes that efficiency and equity are determined by the quality of institutional frameworks governing subsidy programme implementation (Pindiriri et al., 2021).

2.3.2 MARKET FAILURES

Market failure theory is another theoretical pillar for this research study. Market failure is an economic theory that describes situations whereby markets fail to allocate resources efficiently (Pettinger, 2019). The examples include imperfect information, high transaction costs and limited access to credit facilities among smallholder farmers. Farmers in Zimbabwe have been facing persistent challenges in accessing seeds, fertilisers, agro-chemicals, and machinery, which negatively affect agricultural yields. Therefore, government input programs have been implemented to address these market failures by subsidising prices, reducing transaction costs, and improving supply chains. These schemes make goods affordable and accessible to different socio-economic groups of farmers that private markets cannot serve. Hence, the theory also highlights that government intervention may result in inefficiency if not properly managed and adequately monitored Pettinger, 2019).

Institutional Theory and Market failure were chosen because the research problem has two parts which are efficiency and equity. Hence relying on one framework cannot explain both of the aspects. Targeting and leakage frameworks are commonly used for explaining how the subsidies reach its intended farmers and to measure the diversion of inputs. However, these frameworks have a disadvantage of primarily focusing on descriptive outcomes and have limited explanatory power regarding institutional and economic causes of access and non-access to subsidised inputs. Institutional Theory was employed to explain the governance level causes of inefficiencies and inequalities. These include poor coordination, inconsistent allocation criteria and informal power relations amongst the implementing agencies (Pindiriri et al., 2021; Tagara ,2020). The Market failure theory was selected to explain the underlying rationale for subsidy intervention itself. The theory suggests that private markets fail to allocate inputs efficiently to farmers due to information asymmetry, high transaction costs, and credit constraints. Therefore, the government intervention is justified to correct these market failures. Together , these two theories allow the study to answer why government intervention in seed markets is justified and why that intervention creates problems of inefficiencies and inequalities among different farmer groups. institutional Theory helps us understand

fairness whilst market failure helps understand efficiency in the distribution of farm inputs to the small-scale farmers.

2.4 CONCEPTUALISATION OF INPUT SUBSIDIES

Subsidies are financial support policies that assist households in reducing production costs, stabilising incomes, and improving access to essential inputs such as seed and fertilisers. Subsidies can be used as an instrument to address challenges in agriculture, including high input prices, limited access to credit and unequal resource distribution (Mankiw, 2021; World Bank, 2023. The term subsidy is derived from the Latin word subsidium, meaning assistance (FAO, 2021).

In many developing countries, including Zimbabwe, subsidies provide support to smallholder farmers who struggle to afford production inputs such as seeds, technology, and fertiliser (Walls et al., 2018). Governments use subsidies to improve productivity, strengthen food security, and support rural livelihoods by making key inputs such as seeds, chemicals and fertilisers more accessible (FAO, 2022). However, the extent to which such programmes achieve agricultural output, economic well-being, and food and nutrition security is still debated in the literature (Walls et al., 2018). In some cases, government subsidy programmes can create new problems, such as market distortions or reduced participation by private suppliers. However, for these programmes to work effectively, inputs must reach farmers on time, in the right amounts, and in a form that matches their farming environments.

The two main types of subsidies that are implemented in many economies are universal and targeted. Universal subsidies are given to all households regardless of socioeconomic status or income level (Alawode, 2025). In this approach, there is no strict selection criterion, and it is regarded as equitable because all citizens are entitled to national resources. However, evidence shows that wealthier farmers tend to benefit a larger share than poor farmers (Jayne et al., 2018; World Bank, 2023). In contrast, targeted subsidies are a policy instrument used by the government to improve the welfare of vulnerable farmers, including women-headed households, the elderly, the disabled, and poor households. Targeted subsidies often reduce inequalities and ensure support reaches

disadvantaged farmers, but their implementation is affected by favouritism, political interference and imperfect information (Alawode, 2025). Hence, these challenges result in vulnerable groups being excluded from the input distribution process.

The major objectives of subsidies are to increase both crop and livestock productivity, improve food security, and stabilise farmers' incomes. Research evidence shows that use of subsidised inputs is associated with an increase in yields and more production which is efficient (Jayne et al., 2019; World bank,2022) (Jayne et al., 2019; World Bank, 2022). Hence, when production costs are reduced, subsidies can serve as a food stabilisation policy, making food cheaper in the economy (FAO, 2022; OECD, 2021). However, some authors argue that subsidies create a dependency syndrome in farmers, reduce private participation and strain governments' finances.

2.5 INPUT SUBSIDIES IN DEVELOPED ECONOMIES

Table 2. 1: Input Subsidy programmes in selected developed nations

Developed country	Benefits	Beneficiaries	Subsidy scheme	Key support instruments	Weaknesses
United States of America	Reducing agricultural risks	Commercial farmers	Farm support programmes	• Crop insurance • Commodity support payments • Environmental conservation-based incentives	Only larger commercial farmers have advantages in land, capital and technology
European Union	Agricultural sustainability and conservation Development of rural areas	Farmers Rural communities	Common Agricultural Policy	• Income aid schemes • Rural development financing • Environmental compliance payments	Often lead to market distortions Only larger farms benefit

Source: OECD (2020)

According to findings above from developed countries, farm subsidies are not limited to the supply or distribution of agricultural inputs such as seed and fertilisers. Therefore, governments provide support through a variety of mechanisms such as input price support, direct income payments and crop insurance schemes. As shown in Table 2.1, the United States Farm scheme uses crop insurance and environmental conservation subsidies to reduce risks and encourage sustainable farming practises. Additionally, the

European Union's Agricultural Policy (CAP) focuses on providing financial support for rural development and environmental conservation efforts (Swinnen, 2018).

Subsidy programmes play an important role in promoting competitiveness in agriculture. Hence, such measures stabilise farmers' income and protect against market volatility. These policies have been criticised for creating market distortions and inequalities. Research studies have found that these subsidies tend to favour large commercial farmers because they have access to land, labour, capital and technology. In developing countries, subsidy programmes are designed to help smallholder farmers and improve food security, but in developed nations, these programmes aim to stabilise income levels and promote market competitiveness.

2.6 INPUT SUBSIDY PROGRAMMES IN SUB-SAHARAN AFRICA

Table 2.2 below shows the distribution of different input subsidy programmes among the countries in Sub-Saharan Africa

Table 2. 2: Input support schemes in Africa

Country	Beneficiary Selection Method	Equity challenges in subsidy programmes	Subsidised Input Package
Malawi (Alawode ,2025)	Traditional leaders, village committees, Ministry of Agriculture (Alawode,2025)	Bias in selection criteria Exclusion of poor farmers	50kg fertiliser + 2–4 kg seed (Alawode,2025)
Zambia(Alawode ,2025)	Farmer group committees, field officers, and community input suppliers (Alawode,2025)	Insufficient input quantities	200kg fertiliser + 10kg maize seed (Alawode,2025)
Ghana (Alawode ,2025)	Extension officers (Alawode,2025)	Gender exclusion Limited extension officers' reach	No fixed package (mainly fertiliser such as compound and urea) (Alawode,2025)
Tanzania (Alawode ,2025)	Village voucher committees (Alawode,2025)	Inputs diverted Inaccuracies in village beneficiary lists	100 kg fertiliser + seed (Alawode,2025)
Nigeria (Alawode,2025)	Farmer registration system (often ICT-based) (Alawode,2025)	Limited digital access in rural areas False registrations identified	100 kg fertiliser + seed (Alawode,2025)
Zimbabwe	Ward committees and Agritex officers	Late input delivery, outdated beneficiary registers	Seed, basal & top-dressing fertiliser Agro-chemicals

Source: Kato & Greeley (2016) and updated with (Alawode,2025)

Input subsidy programmes have been adopted in most sub-Saharan African countries since the 1960s (Kato & Greeley, 2016). The continued implementation of subsidy programs reflects persistent challenges faced by smallholders in accessing essential inputs, which are improved and hybrid seeds and fertilisers (Holden, 2019). There has been inefficient provision of these inputs through the market because of inadequate financing and high costs. In response, governments have introduced different policies in Malawi, Zambia and Zimbabwe to address these problems.

African input support programmes mainly aim to improve smallholder access to basic inputs, whereas in developed countries they are used to support large-scale commercial farmers. The main goals are to increase food production and improve the livelihoods of rural communities (Jayne et al., 2018; Ricker-Gilbert et al., 2017). According to Alawode (2025), input programs influence farmers' decisions on input use, leading to improved

income levels and production. The implementation of the subsidy programmes in various nations has resulted from changes in economic conditions and policy objectives. Some nations, such as Malawi, Zambia and Nigeria, have initiated reforms to address inefficiency and inequalities among the farmers. Despite these policy measures, challenges persist, including limited access to finance, weak agrodealer networks and climate-related risks.

These subsidy programs share similar objectives, but the possible outcomes differ among the countries. These variations are linked to how these programs are designed and implemented. Hence, weak institutional frameworks have resulted in challenges such as delayed input distribution, inadequate input supply and unequal access among the farmers. The programme may disadvantage other socio-economic groups in the community and undermine the effectiveness of these programmes.

There are also notable differences in implementation procedures. Some nations rely on community-based mechanisms in which local leaders are the key identifiers of beneficiaries. Countries like Tanzania and Nigeria use formal approaches, e.g., vouchers and digital registration platforms. It is important to consider how these differences influence efficient input allocation and whether they reach the intended beneficiaries. Research evidence shows that countries that use electronic vouchers and technology-based systems tend to perform better than countries that rely on local decision-making. Local decision-making is prone to favouritism and elite capture, where vulnerable groups like women-headed households, the poor, the elderly and the disabled may be excluded.

2.7 EVOLUTION OF INPUT SUBSIDIES IN ZIMBABWE

The table below shows the evolution of input subsidies in Zimbabwe, policy goals, key distribution agents and targeted beneficiaries across different historical periods.

Table 2. 3: Evolution of government input subsidies in Zimbabwe

Era	Primary Policy Goal	Key Distribution Agency	Main Beneficiaries

Colonial Period	Productivity for elite agriculture	GMB / AFC	Large-Scale Commercial Farmers (LSCFs)
1980s (post-independence)	Growth with Equity	GMB / AFC	Smallholder Farmers (Communal Areas)
ESAP (1990s)	Market Liberalisation	Private Traders	Market-Linked Farmers
FTLRP (2000s)	Resettlement / Recovery	GMB / State institutions	A1 & A2 Resettled Farmers
Modern (2011-present)	Food Security / Resilience	Presidential Input Scheme / GMB	Vulnerable smallholder farmers

Source: Pindiriri et al., (2021); FAO (2016) and World Bank (2020)

Agricultural input subsidies in Zimbabwe have evolved alongside other policies concerning agriculture, political economy and development strategy. The input subsidy scheme has undergone various levels shaped by economic ideologies and transformations in the agricultural sector. These programmes have continually changed due to shifts in land ownership, state capacity and market reforms.

During the colonial period, subsidy policies were tailored to support commercial farmers, who were believed to be the major determinants of increased productivity in Agriculture. Hence, this policy led to the development of a dualistic agricultural system, where smallholder farmers in communal lands were deprived of inputs, credit and institutional support for the marketing of their produce (Pindiriri et al., 2021; World Bank, 2019).

In the immediate post-independence period (1980s), the state adopted a policy to become more inclusive and equity-based. During the period, input subsidies, credit facilities and extension services expanded to integrate smallholder farmers into the formal agriculture sector. Most scholars acknowledge that smallholder farmers experienced improvements in maize production and increased agricultural production. However, structural inequalities persisted despite these gains, particularly in access to high-quality land, markets, and financial products (FAO, 2018; World Bank, 2020).

Implementation of economic structural adjustment programmes brought major changes and marked a significant turning point in the 1990s. The literature suggests that this era

was characterised by a decline in government support and increased market liberalisation. Therefore, state input supply was reduced, and subsidy systems were scaled back in favour of private sector distribution systems (Pindiriri et al., 2021; World Bank, 2022). However, despite the efficiency gained from such initiatives, research shows that smallholder farmers struggled to afford inputs in liberalised markets. This led to a reduction in farmers' productivity and raised vulnerability in rural farming communities (FAO, 2017; IFAD, 2019).

The Fast Track Land Reform programme, introduced in the 2000s, contributed to changes in the agricultural sector, as more farmers became small-scale and resettled farmers. The demand for inputs increased, but the emerging farmers had limited funds to access input markets. As a result, input subsidies became important for sustaining agricultural output and food security (programs (Pindiriri et al., 2021; World Bank, 2020).

In the contemporary period (2010-present), government input support has focused on key objectives of food security, climate change and vulnerability reduction in Zimbabwe. Examples of such initiatives are the Presidential input schemes and support for the Grain Marketing Board (GMB). The state's actions to assist smallholder farmers are evident in arid and marginal regions; however, inefficiencies and inequalities continue to undermine programme effectiveness.

Command Agriculture

The agricultural sector in Zimbabwe has encountered many problems, which have been worsened by the implementation of the fast track, leading to disruptions in productivity and land use. In an effort to restore the sector's status as the breadbasket of Africa, the government introduced Command Agriculture (CA) (Odunze & Uwizeyimana, 2019). Maize is one of the crucial cereal crops in Zimbabwe, the main staple food for citizens (FEWSNET, 2016). However, Zimbabwe has experienced recurring food security challenges due to drought and inefficient production systems (Odunze & Uwizeyimana, 2019). This has led to high costs of importing maize and other grains from other countries (Odunze & Uwizeyimana,2019). Additionally, the El Niño drought (2015) had a devastating impact, with only 25 % of the required maize produced. In response, the

government intervened through targeted policies such as the Special Maize Programme for Import Substitution (Odunze & Uwizeyimana,2019).

Command Agriculture was introduced during the 2016-2017 farming season to support medium and large-scale farmers with irrigation facilities in high-productivity areas (Shonhe, 2018). The programme aimed to increase maize yields, reduce dependence on imports and improve national security. However, as the programme progressed, the target group was later expanded to include smallholders as well as livestock production (Shonhe & Scoones, 2022)

The literature suggests the CA programme was motivated by the need to address food insecurity and reduce the economic burden of grain imports. Hence, other sources reported successes in improving agricultural production and the creation of a national mindset of food self-sufficiency, while other literature highlights problems related to implementation, resource allocation and sustainability (Shonhe & Scoones, 2022).

2.8 CURRENT INPUT SUBSIDY PROGRAMMES IN ZIMBABWE

Presidential Input Supply and Pfumvudza

Pfumvudza/Intwasa and Presidential input programmes have become significant policy measures to increase farm output, food security and respond to climate change. The initiatives are in line with the National Development Strategy 1 (NDS1:2021-2025), which focuses on agricultural development and transformation, food security and inclusive economic growth (Government of Zimbabwe, 2020). In addition, they support the country's policy objectives as outlined in the Agricultural Policy Framework, such as sustainable agricultural production, access to agricultural inputs, and empowerment of farmers (MLAFWRD, 2023). However, the success of these input support programmes is based on the efficiency and equity of input distribution systems.

The presidential input program focuses on providing agricultural inputs to rural communities such as maize seed, fertilisers, herbicides, and pesticides. The programme uses a decentralised supply mechanism at ward level, by distributing inputs through committees including leaders, councillors, traditional leaders, and extension officers. The research suggests community-based systems are more vulnerable to elite capture and

political interference, which can negatively affect equity (Chitiyo et al., 2021; World Bank, 2021). Hence, these risks show that there is differential access to maize seeds among socio-economic groups such as Bindura.

The programme adopts an agro-ecology approach: maize is distributed in high- rainfall regions, and small grains, such as sorghum and millet, are targeted in drier regions. Therefore, the programme achieves allocative efficiency by matching seed types to climatic conditions (Magwenzi, 2025). Maize hybrid seed is distributed in Natural Regions 1 and 11; such areas are Mashonaland Central and Manicaland because of favourable rainfall. In contrast, natural regions IV and V often receive drought-tolerant crops, and such areas are Masvingo and Matabeleland. However, this targeted approach may be successful only if farmers receive the right seed variety at the right time. Many cases have been reported where maize seeds were distributed in dry districts despite the prevailing drought conditions. Additionally, drought-tolerant seed varieties may arrive late after the start of rainfall (FAO, 2022).

The Pfumvudza /Intwasa program complements the presidential input scheme by promoting climate-smart agriculture through the distribution of inputs to small-scale farmers. The programme has been successful in Zimbabwe because millions of farmers are now targeted by the government programmes (MLAFWRD, 2024). Hence, the effectiveness of this programme has improved, as farmers receive proper training on agricultural inputs. However, there have been issues with inefficient input distribution, leading to delays in planting (IFAD, 2020).

In terms of equity, Pfumvudza/Intwasa was designed to support vulnerable groups, including female households, the elderly, and resource-poor families. However, this programme is not equitable, as problems such as lack of transparency and inconsistencies in beneficiary selection have been reported. However, studies note that this programme is not equitable due to weaknesses such as lack of transparency and inconsistencies in beneficiary targeting. According to Mushunje and Muchopa (2021), inequalities in household registration, absence of efficient verification mechanisms, and inconsistent practices adopted by local authorities may lead to disparities in the distribution of farming inputs. In some farming environments, the use of outdated and incomplete ward

registers has contributed to the exclusion of deserving farmers. These include newly resettled households and informal tenants, while other inactive households remain listed as beneficiaries. According to various studies conducted in Mashonaland Central, delays in updating beneficiary information continue to hinder timely distribution of inputs to eligible households. In Bindura, wards such as Manhenga and Masembura reported mismatched records, resulting in limited provision of seed packets. This discussion indicates that even with good intentions to assist poor farmers, problems of poor targeting and administration continue to hinder equitable allocation of inputs by the Pfumvudza Programme (Mushunje & Muchopa, 2021).

2.9 EMPIRICAL LITERATURE

2.9.1 EFFICIENCY OF INPUT SUBSIDIES

Research evidence shows that agricultural input subsidies increase agricultural productivity by enhancing smallholder farmers' access to inputs such as seeds, agro-chemicals and fertilisers (Fosu-Mensah et al., 2019). Hence, these policy measures play a pivotal role in increasing farm output, enhancing food security and strengthening rural livelihoods (Chirwa & Dorward, 2013). The efficiency of these programs depends on how efficiently inputs are distributed to socio-economically disadvantaged farmers.

One of the challenges faced by many farmers in Zimbabwe is delayed input distribution, sometimes after the ideal planting time for crops. This will mean that farmers are unable to use them efficiently, thereby affecting crop performance and expected yields. However, these problems may force farmers to purchase expensive substitutes from the private markets. This will cause an increase in the cost of production

Additionally, inadequate input packages and poor-quality inputs have been reported as major problems facing these programs. In research conducted by Tagara 2017), farmers are at times allocated incomplete packages or poor-quality inputs, which reduce production efficiency and lower farmers' confidence in government support.

Research suggests that corruption and leakages remain a key threat to programme performance. Research studies have shown that seeds and fertilisers are diverted from

targeted beneficiaries to wealthier households. For example, in the Pfumvudza /Intwasa programme, inputs are reportedly sold to well-connected traders and larger commercial farmers who were not even targeted by the programme (Tagara, 2017). In many cases, inputs are delivered late into the system and then diverted into informal markets and sold at higher prices. Hence, these practices increase inequalities and weaken the effect of government input subsidies on food security and agricultural productivity. It is important to address issues related to transparency, logistics, and efficiency within the programme for its success.

2.9.2 EQUITY IN INPUT DISTRIBUTION

Although agricultural input subsidies are framed around equity and poverty- reduction objectives, current evidence shows persistent challenges in ensuring equitable access to inputs, especially seed. Equity in this context refers to equal, timely, and need-based access to inputs based on vulnerability, livelihood status and agro-climatic factors. However, current findings reveal that equity is compromised by institutional, socio-economic, and logistical constraints during implementation.

One of the challenges identified by different studies includes inequalities arising from inefficiencies in targeting and implementation systems. According to studies conducted by Jayne et al., (2018), despite continued adoption of input subsidies in Sub-Saharan Africa, problems such as inefficient targeting have been identified as a key barrier. In addition, Mason and Jayne (2018) conducted similar studies that poor administration and verification of beneficiaries can negatively affect allocation outcomes.

Gender disparities are also another key issue affecting the distribution of government subsidised inputs. According to numerous studies, female-headed households have limited access to agricultural resources, agricultural extension services, and formal agricultural schemes (FAO,2021; Ragasa et al., 2019). The continued challenges women face reduces their participation in government programmes. According to research conducted by FAO (2022), shows that closing gender gaps in access to inputs is important for improving food security and agricultural productivity.

Additionally, logistics play an important role in determining equity in input allocation. According to research, farmers living in remote regions are facing challenges accessing inputs due to poor distribution networks, transport challenges, and lack of coordination (World Bank, 2020; FAO, 2022). This means that access to subsidised agricultural inputs depends on proximity to distribution points. In rainfall agriculture, such delays could interfere with planting schedules and affect harvests.

Although input subsidies have succeeded in ensuring an adequate supply of agricultural inputs over the past decade, equity remains constrained by poor targeting, gender imbalance and logistical limitations. These factors determine which individuals benefit, how much they receive, and when they receive inputs.

2.9.3 DETERMINANTS OF ACCESS TO INPUT SUBSIDY PROGRAMMES

Access to government input subsidies is shaped by socio-economic, institutional, geographical and informational factors. These factors work together to influence both efficiency and equity of input distribution.

Socioeconomic Determinants

A substantial body of literature highlights the role of socio-economic attributes in influencing farmers' access to agricultural subsidies. Farmers with assets such as productive livestock, larger land areas, irrigation facilities, and machinery are favoured participants in subsidy programs (Ricket-Gilbert et al., 2017; Jayne et al., 2018). The rationale is that asset-rich households use inputs more efficiently to achieve higher productivity gains. This efficiency-driven approach carries significant consequences for equity. Hence, it may increase aggregate agricultural output; it may pose a threat to marginalised poor rural communities that are supposed to be beneficiaries of the interventions.

Education

Education is widely regarded as a key determinant of farmers' ability to access subsidised inputs. Research suggests that educated farmers are more likely to access inputs due to better understanding of subsidy programme procedures, eligibility requirements and

information network systems (Ragasa & Mazunda, 2018). According to Mustapha et al. (2016), the opposite is found in Ghana; more educated individuals are likely to diversify into non-farm employment, reducing their participation in government programmes.

Gender

Gender is another important determinant of access to government input subsidies. Research from African countries shows that male-headed households are more likely to receive inputs than female households (Fisher & Kandiwa, 2014; World Bank, 2022). This is because females often encounter challenges such as limited access to land, credit, and agricultural extension services. Many government input programmes use land ownership and participation in farming groups as a selection method; women may be excluded. Consequently, these inequalities hinder the fairness and inclusiveness of subsidy programs and reduce women's ability to improve agricultural output and household food security.

Household Size

Household size also influences farmers' access to agricultural inputs in Zimbabwe. Studies have identified that larger households are prioritised because of the availability of labour and are considered more vulnerable to food insecurity (Ragasa et al., 2021). The underlying assumption is that these households can make better use of the inputs provided by government institutions. However, larger household size does not necessarily guarantee efficient utilisation of inputs, especially when farmers face other challenges such as limited capital, poor irrigation facilities, and inadequate equipment. Moreover, targeting larger households may disadvantage smaller ones, but highly vulnerable groups such as elderly people, disabled and widow -headed households.

Farm Size

Farm size and the degree of commercial farming also affect access to subsidy schemes. Research has suggested that larger farms and those oriented towards production are more likely to receive inputs (Jayne et al., 2018; Liverpool -Tasie et al., 2020). Policymakers often see these farmers as having greater capacity to improve agricultural production and contribute to national food security objectives. These criteria may improve agricultural

yields but can create inequalities by excluding farmers with limited land sizes. Some of the government subsidy programmes may favour agricultural productivity over fairness.

Income

Income levels are widely known for shaping access to subsidised inputs. Farmers with higher incomes can meet additional indirect costs associated with programmes, such as transport to collection points, complementary input purchases, and registration fees (Ragasa et al., 2021; World Bank, 2022). They also have better access to information networks and have relationships with local institutions, which enhances the likelihood of being selected. In Contrast, poor households face financial constraints that limit their participation in the programs (Ricker-Gilbert et al., 2017). This creates a situation in which wealthier farmers benefit most from the subsidy programmes whilst vulnerable groups are excluded.

Institutional Determinants

Extension Services

Agricultural extension services are another determinant of access to agricultural inputs. Extension services serve as a channel through which information about registration procedures, eligibility criteria and distribution timeliness is disseminated. Farmers who have regular contact with extension officers are most likely to participate in the programmes (Ragasa et al., 2021; Liverpool-Tasie et al., 2020). Mustapha et al., (2016) also suggest that extension contact increases the probability of accessing subsidised fertiliser by 11 %. However, where agricultural extension systems are poor, information gaps exist, leading to the exclusion of farmers who are not adequately reached by public services.

Institutional coordination and Administrative Efficiency

Another important determinant is the coordination of institutions and Adminstrative efficiency. Efficient coordination among various government institutions, including the Ministry of Agriculture, AGRITEX, and Grain Marketing Board, are essential for timely registration, beneficiary selection and efficient input allocation. However, in Zimbabwe,

challenges such as poor coordination, bureaucratic delays and administrative inefficiencies affect farmers' access to subsidised inputs (FAO, 2022). These problems result in late input distribution, exclusion of eligible farmers from the programme, and inequalities in benefit sharing.

Farmer Organisations and cooperatives

Membership in farmer organisations and cooperatives is another key factor that influences access to inputs. These groups provide a channel for sharing agricultural information, promoting effective collective action and facilitating engagement with government input schemes (Kemei, 2024). Thus, farmers who belong to such groups have more possibilities to access agricultural inputs than non-members. However, weak governance structures, poor accountability and dominance of influential individuals can result in unequal allocation of inputs within groups (Jayne et al., 2018; Houssou et al., 2013).

Geographic Determinants

The key determinants of government input subsidies include geographical location and infrastructure. In many developing countries, including Zimbabwe, many roads are in poor condition, thus making it difficult to transport seeds, fertilisers, and chemicals from central warehouses to local distribution centres. Poor road networks increase transportation costs. Hence, households will receive inputs very late or sometimes be forced to pay higher prices compared to farmers located near distribution centres. Research studies show that good road network systems act as a channel through which seeds and other inputs move from manufacturers and wholesalers to farmers (Rutsaert et al., 2021).

Additionally, distance is another geographical determinant of access to subsidised inputs. There is an inverse relationship between access and distance; farmers located further away are less likely to benefit from the scheme. More so, an increase in travel time to input depots is associated with reduced input quantities. Hence, farmers located closer to distribution centres enjoy greater benefits in terms of access and quantity of inputs received.

Informational Determinants

Information access is another key determinant of participation in government input subsidy programmes. Smallholder Farmers need timely and accurate information regarding eligibility requirements, registration procedures, and input distribution schedules to participate in these schemes. Hence, when such information is not readily available or unevenly distributed, participation rates decline, resulting in inefficiencies in both allocation and utilisation of subsidised inputs (Mutsvangwa & Dube, 2020).

In rural communities, poor communication networks and limited extension coverage lead to information asymmetries. As a result, some farmers are well informed while others remain excluded due to a lack of awareness. These differences in access will contribute to inequalities among farmers within the same community or geographical area. Additionally, lack of information about seed varieties and their importance will discourage their adoption and ultimately affect productivity (Langyintuo, 2020). The literature suggests that information access is a key factor for promoting both efficiency and equity of input subsidy programmes.

2.9.4 CHALLENGES AFFECTING SMALLHOLDER FARMERS

Delayed input distribution

Delays in the supply of subsidised remains a challenge for many small-scale farmers in Zimbabwe. Inputs are being delivered to farmers many weeks after the recommended planting periods. Research shows that weak coordination among institutions responsible for implementing input support programmes contributes to the delayed distribution of seed and fertiliser packages (World Bank, 2020; Amaglobeli et al., 2024). In the Pfumvudza /Intwasa programme, less than half of the required inputs are delivered on time, thereby compromising agricultural productivity. Moreover, it is noted that the Presidential input scheme has negatively affected farmers' yields, as they are compelled to plant late or store seeds under unsuitable conditions (Tagara, 2017). This challenge has been reported in farming communities in Bindura, where late delivery has been identified as a barrier affecting farmers' activities.

Transportation and transaction costs

High transportation and transaction costs are another challenge affecting farmers' access to subsidised inputs. Farmers living in remote areas often travel long distances to collect inputs, thereby increasing transport costs and requiring them to spend time away from farming activities, hence discouraging participation in Government input schemes. These challenges often affect women and the elderly Liverpool-Tasie et al., 2020). Additionally, poor rural infrastructure and long distances to distribution centres increase these costs, thereby reducing the efficiency of input distribution systems.

Poor Alignment with environmental conditions

In addition, weak targeting and poor alignment of inputs with agro-ecological conditions are another factor affecting the effectiveness of input subsidies. In many cases, studies show that centrally planned seed distribution systems do not consider differences in climate, rainfall, and soil characteristics across regions. As a result, farmers may receive seed varieties that do not suit agro-ecological conditions. For example, maize seed distribution in drought-prone regions increases the risk of crop failure and reduces productivity. These mismatches reflect inefficiencies in planning and limit the effectiveness of agricultural subsidy programmes.

Limited Access to information and extension services

Limited access to agricultural information and extension services is another factor that affects farmers' ability to benefit from subsidy programmes. Many farmers do not receive sufficient information about programmes, distribution dates, and the correct use of inputs (Mutsvangwa & Dube, 2020). Additionally, Weak agricultural extension systems also limit farmers' access to technical advice and modern farming practices that could help increase productivity. These information and knowledge gaps contribute to both inefficiency and inequity, as better-informed farmers are more likely to benefit from the programmes.

2.10 POLICY RECOMMENDATIONS FROM LITERATURE REVIEW

Improvement of targeting mechanisms

Research proposed improving targeting systems to ensure input schemes reach the most vulnerable groups. Many countries have adopted biometric systems, digital registries, and transparent beneficiary selection processes to reduce corruption and leakages (Amaglobeli et al., 2022; World Bank, 2020). In contrast, targeting only the vulnerable groups may affect overall agricultural production, while targeting more productive farmers may improve productivity. Therefore, governments should develop balanced targeting frameworks considering both equity and productivity.

Addressing Women and Youth Inclusion

Research studies note that the government should design input support schemes that target women and youth farmers to address limited access to land, credit and extension services. According to Burke et al. (2018), women often achieve lower productivity than males due to limited access to high-quality inputs and labour. It is important to consider gender disparities in yields, as evidence from Sub-Saharan Africa shows yield gaps from 11-40%. The government must adopt policies that target females and youth farmers (FAO, 2018; World Bank, 2019; UN Women). Mutenje et al., (2021) further recommend combining extension support with subsidised inputs to enhance agricultural productivity.

Monitoring and evaluation

Another policy strategy is monitoring and evaluation to enhance the effectiveness, transparency and sustainability of government input subsidies. Monitoring and evaluation data systems enable governments to identify challenges, assess programme performance, and areas for improvement. Hence, using improved data systems helps strengthen accountability and targeting (AGRA,2019; IFAD, 2021)

Strengthening information and extension services

Another key measure to reduce inefficiencies and inequalities is by strengthening information and communication channels. The adoption of digital and mobile-based technologies has been recommended as an efficient means of disseminating information and reaching large numbers of farmers (FAO, 2017; World Bank, 2019). Additionally, well-resourced extension personnel can provide technical guidance on the use of seeds, fertilisers and other inputs. Moreover, improved extension services can help promote

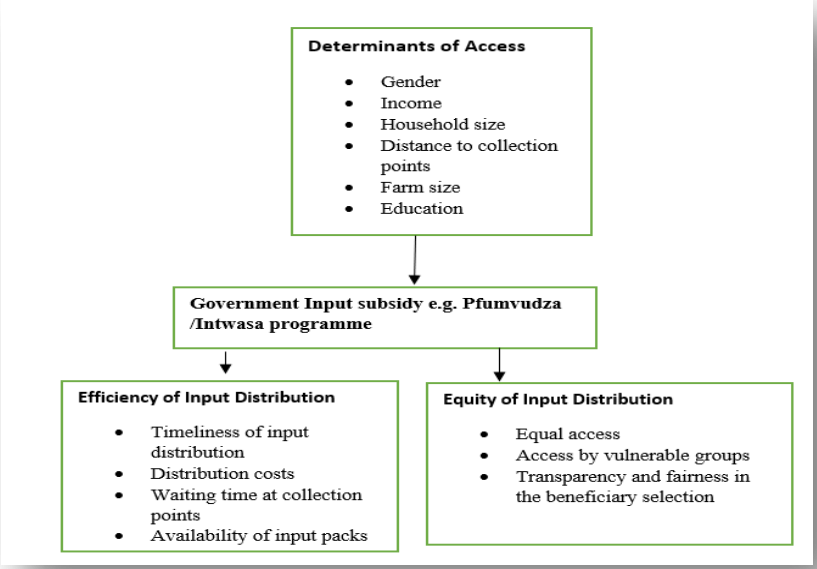
climate-smart agriculture by adoption of drought-tolerant crops such as sorghum, millet and rapoko.

2.10 EMPIRICAL GAPS

Despite extensive research on agricultural input subsidies in Zimbabwe, limited attention has been given to the operational realities of input distribution. There is a lack of studies examining key challenges such as input delivery, exclusion of vulnerable groups, input quality and suitability of seed varieties to local conditions. Other literature has assessed either efficiency or equity; few have analysed both variables within the same framework. This ultimately affects a comprehensive understanding of how government input subsidies affect both productivity outcomes and fairness (Ragasa et al., 2021; Liverpool-Tasie et al., 2020). In addition to this thematic gap, there is an empirical gap as the majority of the Sub-Saharan literature reviewed in this chapter is drawn from countries such as Malawi, Zambia, Ghana, Tanzania, and Nigeria, and relies heavily on national panel survey data. In contrast, district-level mixed-methods evidence from Zimbabwe, especially from Bindura, remains scarce. This research study seeks to identify and address these gaps by adopting a localised approach that integrates household survey data, administrative records, and stakeholder views to assess the efficiency and equity of seed distribution networks.

2.11 CONCEPTUAL FRAMEWORK

Figure 2. 1: Conceptual Framework



Source: Author (2026)

Theoretical frameworks show the relationship between government input subsidies and the efficiency and equity of input distribution in Bindura District. It is expected to influence two independent variables: efficiency and equity of input distribution. Efficiency is measured by factors which are early input supply, distribution costs and availability of input packs. Additionally, equity refers to equal access, inclusion of vulnerable groups, and fairness in beneficiary selection (IFAD, 2021; Ragasa et al., 2021). The study shows that access to subsidised inputs is influenced by socioeconomic factors, including income, gender, household size, education level and distance to collection points (Ragasa & Muzunda, 2018; World Bank, 2022). The challenges faced by farmers include late delivery of inputs, high transportation costs, inadequate input quantities, long queues and high indirect costs. Consequently, these problems affect the effectiveness of government input subsidies among smallholder farmers.

2.12 SUMMARY

In many African and Asian countries, Agricultural subsidies have been used as key policy tools to improve farmers' access to essential inputs (Holden, 2019). The literature review provided an overview of the roles of input subsidies in assisting small-scale farmers,

drawing evidence from developed countries such as Japan and America, developing countries including Nigeria and Zambia, as well as Zimbabwe

The effectiveness of these subsidies is often constrained by late input supply, weak targeting systems, high transaction costs, and inequalities in access to subsidised inputs (Liverpool-Tasie et al., 2020). Moreover, although input subsidies are intended to assist smallholder farmers, the distribution of inputs is often characterised by inefficiencies and exclusion, especially for vulnerable groups such as the disabled, elderly, and resource-constrained households.

The literature also highlights that the quality of subsidy governance and institutional capacity are determinants of efficiency and equity. Evidence suggests that efficiency and equity can be achieved simultaneously when programs are well-designed and implemented. Therefore, improving subsidy design and strengthening transparency are crucial for achieving programme objectives (Amaglobeli et al., 2022). According to various studies, programmes such as the Pfumvudza conservation-based initiative demonstrated improved targeting of beneficiaries compared to earlier schemes such as command agriculture.

CHAPTER 3: METHODOLOGY

3.1 INTRODUCTION

By definition, research methodology is the framework through which procedures for collecting, analysing, and interpreting data are applied to ensure that research results are credible, accurate, and dependable (Creswell, 2014). It is a systematic plan detailing how a researcher will address specific research problems. The purpose of this chapter is to state the methods used to assess the extent to which input subsidies have affected the distribution of seed in terms of efficiency and equity. It also outlines the research design, location, sampling procedure, data collection procedure, and data analysis processes. The research presents ethical considerations observed.

3.2 DESCRIPTION OF THE STUDY AREA

3.2.1 LOCATION

Bindura District is found in Mashonaland Central; it is approximately 88kilometres northeast of Harare. The district lies at coordinates 17°18′S latitude and 31°20′E longitude in Zimbabwe's agro-ecological zones and falls under agro-ecological region IIa

and IIb (Department of Meteorological Services, 2023). This research study was conducted in the Manhenga area, with specific focus on selected villages including Mutandiri, Mhizha, Chingwaru, and Kache.

3.2.2 POPULATION AND AREA COVERAGE

Bindura District is administratively divided into 21 rural wards and 12 urban wards, covering a total land area of approximately 247,267 hectares. Additionally, approximately 50,000 hectares (22%) are covered by natural forests, reflecting diverse agroecological resources (ZIMSTAT, 2022). According to the Zimbabwean population Census of 2022, Bindura District is estimated at 51400, showing a steady growth from 33600 in 2002 and 43700 in 2012. Moreover, the rural areas constitute about 170000 people, giving a total district population of about 220000 (ZIMSTAT,2022).

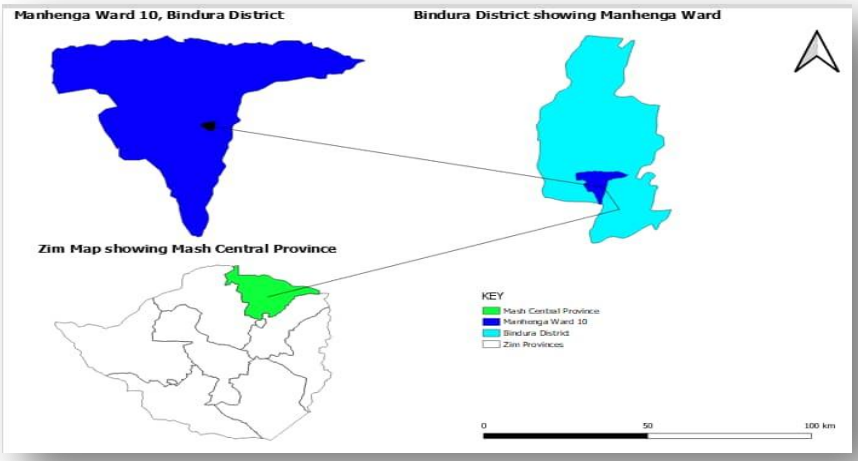
3.2.3AGRO-ECOLOGICAL CONDITIONS

The Bindura District lies in agro-ecological zones IIa and IIb, where average rainfall received ranges between 750 mm and 1000 mm (Department of Meteorological Services, 2023). These agro-ecological conditions support crop and livestock production. Several soil types predominate in the district, mainly red clay loam and sandy loam (Food and Nutrition Council [FNC], 2022). Agricultural production within the district involves both staple and cash crops. Amongst the main summer crops are maize, tobacco, cotton, soya beans, sunflower, and groundnuts, whilst winter crops such as wheat and barley are grown within irrigation schemes. Livestock rearing in the district covers several sectors including beef production, dairy farming, and poultry. The natural vegetation in the district comprises tree species such as Brachystegia spiciformis (Msasa), Brachystegia boehmii (Mfuti), Bauhinia macrantha (Mpondo), and Afzelia quanzensis (Department of Forestry, 2022).

Despite the favourable conditions, the district continues to face problems associated with climate variability, including erratic rainfall and droughts during the farming season. In this context, government intervention is needed to reduce climate risks for the local

population. Measures, such as input subsidies through the Pfumvudza/Intwasa initiative, can help farmers cope with the negative impacts of climate change.

Figure 3. 1:Bindura, Manhenga study area map



Source: Adapted from Muchabaya (2022).

3.3 RESEARCH DESIGN

A cross-sectional study design was used to collect data from a large population at a single point in time, as it is cost-effective and allows researchers to examine several variables simultaneously (Hlahla, 2023). The study adopted a descriptive and explanatory approach to assess the impact of government input subsidies on the efficiency and equity of seed distribution among smallholder farmers in Bindura District. A mixed-methods approach was used, combining quantitative analyses obtained from structured questionnaires with qualitative data collected through key informant interviews and focus groups.100 farmers were randomly selected from various villages.

3.4 DATA COLLECTION METHODS

This study used a mixed method involving both primary and secondary data sources. This was done to ensure an effective and thorough analysis of input distribution on efficiency and equity. The use of various sources made it easy to triangulate information.

Primary Data Collection Methods

This study used quantitative and qualitative research methods for the collection and analysis of data. Quantitative data were gathered using structured questionnaires. The Kobo Collect application was also utilised for data capture and managing survey responses. The questions were designed and uploaded on the platform, after which links were shared with farmers who had access to mobile phones.

Qualitative data were captured using informant interviews and focus groups. The key informant interviews involved Agritex officers and local community members to understand the process and outcomes of the seed subsidy program. Focus Group discussions were also conducted among the selected farmers to gather collective views, perceptions and problems of seed distribution. The use of multiple methods, such as surveys, interviews, and focus group discussions, provided a comprehensive way of addressing the research question, as it allowed for the overcoming of limitations associated with a single method (Saunders et al., 2019).

Secondary Data

Documentary search

Secondary data sources were collected through documentary review methods. This was done using government records, policy documents, scholarly articles, and publications from organisations such as FAO, the World Bank and ZIMSTAT. This secondary source provided context for primary data analysis and comparison with existing literature (World Bank, 2020; FAO, 2023).

Table 3. 1: Summary of data collection methods

Objective	Data to be gathered	Data gathering tool	Respondents
Efficiency of the Subsidy Program	Timeliness of delivery	Household questionnaire; Key Informant Interviews (KIIs)	Smallholder farmers; Agricultural extension officers; District agricultural officials
	Adequacy of Seed	Household questionnaire; Focus Group Discussions (FGDs)	Smallholder farmers
	Accessibility	Household questionnaire	Smallholder farmers
Equity of	Gender	Household questionnaire	Smallholder farmers

distribution	Wealth Status	Household questionnaire; Household wealth index classification	Smallholder farmers (male and female-headed households)
	Farm size and distribution fairness	Household questionnaire	Smallholder farmers
Determinants of Access	Distance to depot	Household survey	Smallholder farmers
	Education level	Household questionnaire	Smallholder farmers
	Household size	Household questionnaire	Smallholder farmers
Challenges	Transport cost	Household questionnaire	Smallholder farmers
	Delays	Household questionnaire	Smallholder farmers, input distribution officers
	Insufficient quantities	Household Questionnaire	Smallholder farmers
Recommendations	Farmer suggestions	Open-ended questionnaire	Smallholder farmers

Source: Survey Data 2026

The table above shows the data collection methods employed in the study.

3.5 SAMPLING PROCEDURES

The term sampling involves the process of choosing a subset of a larger population to act as a representative of the whole (Creswell, 2014). Given time and resource limitations, it was not feasible to conduct research involving the entire population of small-scale farmers within Bindura. Therefore, a representative sample was chosen.

3.5.1 SAMPLING TECHNIQUE

The study employed a combination of simple and stratified sampling.

Stratified sampling (based on village)

Stratified sampling (based on village) involves dividing the population into several strata based on specific characteristics, after which samples are drawn from each stratum. In this study, the sampling strategy involved stratifying the population by villages (Mhizha, Mutandiri and Kache). The study ensured that each village was equally represented in the sample to improve the accuracy and precision of results. Stratification helps reduce variability within groups when estimating variables in research studies (Makwana et al., 2023).

Simple random sampling (villages)

Simple random sampling was applied within each village, whereby the researcher randomly selected respondents for interviews. Simple random sampling gives a chance for every person to be selected in the study. This approach helps in minimising bias. This approach is suitable for a relatively homogeneous population since it ensures equity and fairness in respondent selection (Makwana et al., 2023).

3.5.2 SAMPLE SIZE

Sample size refers to the number of participants included in the research. Sample size is an important consideration in research design and statistical analysis as it directly affects the reliability of the findings (Cochran, 1977). The study used a sample size of 100 smallholder farmers drawn from Manhenga District, Bindura from villages such as Mutandiri ,Kache ,Chingwaru ,Nyakache ,Maredza and Mhizha.

The needed sample size was determined using the Yamane's (1967) formula as shown below:

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

Where n = sample size, N = Population size e = margin of error

At 90% confidence level e=0.10

Where N=420 registered smallholder farmers

e=0.10

$$n = \frac{420}{1 + 420\ (0.10)^2}$$

$$N=\frac{420}{5.2}$$

n=81

Therefore, a sample size of 100 farmers was considered adequate, exceeding this minimum threshold to provide an added margin for non-response and data quality issues.The 10% margin of error gives a number of 81 participants, which was now rounded to 100.

Hence, when choosing a sample size, a combination of practical and methodological factors was considered. Firstly, lack of time constrained the researcher from covering a larger population. Additionally, lack of money limited data collection from more than 100 people. Lastly, issues surrounding field access from remote villages were also taken into account when determining the sample.All the 100 questionnaires that were distributed were returned, thereby giving a 100% response rate .

3.6 DATA ANALYSIS METHODS

Data processing

Data were cleaned and analysed using IBM SPSS and Microsoft Excel. The quantitative analysis used descriptive and inferential statistics. The coding was done to facilitate the process of analysis, where binary variables were coded as Yes (1) and No (0). The five-point Likert scale coded 1 as strongly disagree and 5 as strongly agree. The difficulties farmers faced were coded 1 as not a challenge and 5 as very severe.

Descriptive statistics

Statistics such as frequencies, percentages, mean and standard deviation were used to analyse data on access to inputs, timely input delivery and issues of perceived fairness. The mean was used to analyse the Likert scales and perceptions.

The formula for calculating the mean is as follows

$$\bar{x} = \sum x/n$$

Where:

$\bar{X}$= Mean , $\sum$x=Sum of observations, N=number of observations

The mean facilitated the ranking of responses and identification of the most significant factors affecting government input subsidies. For example, a mean score above 3 indicated agreement that a particular factor (e.g., delayed input distribution) was a major challenge, while a mean below 3 indicated disagreement. Frequencies and percentages were also used to present the distribution of responses. For example, the proportion of farmers who received inputs on time versus those who did not was calculated to assess the efficiency of distribution.

Inferential statistics

To examine the relationship between variables, regression analysis was employed.

The following is the basic model for multiple regression analysis:

$$\boldsymbol{Y = \beta 0 + \beta 1 x 1 + \beta 2 x 2 + \cdots + \beta i x i + \varepsilon}$$

Where:

- **Y= Dependent variable (Efficiency or Equity of seed distribution)**
- **β_0= Constant term (intercept)**
- **β_1……β_i Regression coefficients represent the rate of change in y for every unit change in the respective x variable.**
- **X1 ……Xi Explanatory (independent) variables.**
- **X_1= Gender of household (dummy variable)**
- **X_2=Education level of household head**
- **X_3= Distance to seed collection point (measured in kilometres)**
- **X4 =Long distance to the collectin point**
- **x5=Late delivery of seed (dummy variable)**
- **X6=Not receiving the correct amount of seed (dummy variable)**
- **X7 =Household size (number of members)**

- **ϵ= stochastic error term, representing factors not captured by the model.**

The above explanatory variables from X1 -X7 showa the model as estimated in chapter 4 (Table 4.15).The regression analysis was conducted using the Statistical Package for the Social Sciences (SPSS) Version. Statistical significance was tested at a 5% significance level ($p < 0.05$). Variables with p-values less than 0.05 were considered statistically significant determinants of efficiency and equity in seed distribution.The seven variable specification presented above is a model estimated in chapter 4 .

Table 3. 2: Analytical tools used for data analysis

OBJECTIVE	RESEARCH QUESTION	ANALYTICAL TOOL
To analyse the efficiency of government input subsidy programmes among smallholder farmers	How efficient is the government input subsidy program in supporting smallholder farmers?	Descriptive statistics (means, frequencies, percentages)
To determine the equity of the seed distribution network across different categories of smallholder farmers.	To what extent is the seed distribution network equitable across different categories of smallholder farmers (e.g., gender, farm size, and wealth quintile)?	Descriptive statistics, cross-tabulations, and regression modelling
To analyse the determinants influencing smallholder farmers' access to subsidised seed.	What factors determine smallholder farmers' access to subsidised seed?	Regression analysis

To identify the key challenges faced by smallholder farmers in accessing subsidised seed inputs.	What key challenges do smallholder farmers face in accessing subsidised seed inputs?	Descriptive synthesis of findings (supported by qualitative insights)
To propose measures for improving the efficiency and equity of seed distribution.	What measures can be implemented to improve the efficiency and equity of seed distribution under government input subsidy programs?	Policy analysis and descriptive synthesis of findings

Source: Survey Data (2026)

The table above summarises the data analysis tools used in the study.

3.7 RELIABILITY AND VALIDITY

To strengthen the credibility of the results, both reliability and validity were addressed during the questionnaire design and data collection. Reliability refers to the consistency and repeatability of a measurement instrument (Bryman, 2016). IThe household questionnaire was pre-tested with five farmers in Manhenga to ensure reliability before the main survey was conducted. Feedback from the pilot study helped improve clarity of the research questions. In addition, enumerators were trained on administration procedures to reduce the possibility of interviewer bias.Internal consistency of the Likert scale items which comprises Perceptions of input access ,timeliness,and fairness) was also examined by employing the Cronbach's alpha ,which yielded a coefficient of 0.78 .Hence this exceeded the recommend threshold of 0.70 (Bryman ,2016) ,thereby showing that the scale variables measured a coherent underlying construct.

Validity was addressed by designing questionnaires guided by research objectives, study questions, and relevant literature on government input subsidies programmes. The questionnaire was also reviewed by the supervisor before fieldwork to ensure the questions were clear, relevant, and aligned to the purpose of the study. Construct validity of the regression model was assessed by using multicollinearity tests. The VIF values for explanatory variables ranged from 1.0 to 1.3 (see Table 4.15), indicating that variables were not correlated with one another. Hence, this confirms their suitability for inclusion in the regression model.

3.8 ETHICAL CONSIDERATIONS

Ethical considerations play a very important role in guaranteeing the integrity and proper handling of research. According to Resnik (2018), ethical problems in research concern the moral standards on how a study should be conducted to safeguard the rights and welfare of the participants involved. Accordingly, many ethical considerations were strictly adhered to throughout this research process. The researcher paid keen attention to ethical standards while conducting the research. Before participating, all subjects were made fully aware of the research objectives. They were then asked to give informed consent to ensure their participation was based on an understanding of the process. The confidentiality and anonymity of all participants were guaranteed. This was achieved by ensuring that no personal information was collected. Participation was completely voluntary, and participants had the right to withdraw at any time without penalty. Prior consent was sought from relevant bodies before the research process began. The confidentiality of data collected during the research process was maintained at all times.

3.9 STUDY LIMITATIONS

Firstly, one of the major limitations is response bias, as most information was subjective and based on smallholder farmers. The participants may have given socially desirable answers regarding the fairness and distribution of inputs. For example, participants might exaggerate the availability of subsidies to make their situation better than it is, while others could minimise their difficulties to avoid retribution. Additionally, recall bias could affect answers when recalling past seasonal experiences.

The second main limitation was a lack of time and resources, which prevented the collection of comprehensive data. This study used a cross-sectional design, where data were collected at a single point in time. Consequently, we could not track changes in the input distribution across multiple seasons, making it impossible to assess both efficiency and equity of the process.

Methodological limitations associated with the use of structured questionnaires were also identified in this study. The questionnaires were effective in collecting quantitative data

on the complexities underlying farmers' experiences, perceptions, and root causes of their attitudes towards input distribution. For example, an individual farmer who was dissatisfied with the distribution of inputs could have several complaints, including corruption, poor communication, or insufficient amounts. Despite integrating qualitative approaches such as key informant interviews and focus group discussions into the research process, some other interesting insights could have been missed.

Additionally, challenges related to secondary data sources were encountered in the study. The secondary sources, such as government documents and statistics used to contextualise the findings of this study, may have been out of date or too generalised to reflect current conditions at the district level. Furthermore, the study's limited geographical scope presents a limitation. The research was confined to Manhenga Ward in Bindura District, which may not fully represent the diversity of conditions across other wards or districts in Zimbabwe. Variations in infrastructure, institutional arrangements, and agro-ecological conditions may lead to different experiences in other areas.

3.10 CHAPTER SUMMARY

To conclude this chapter, the research methodology is a roadmap for data collection and analysis of efficiency and equity of seed distribution among smallholder farmers in Bindura. Hence, it is important for ensuring that the findings are valid, accurate, and unbiased. However, depending on a single research methodology narrows the scope of the study. A single research approach cannot answer all questions about a certain topic; hence, researchers should have several research tools at their disposal (Creswell & Clark, 2011).

CHAPTER 4: RESULTS AND DISCUSSIONS

4.1: INTRODUCTION

Chapter 4 presents results collected from the survey. Data analysis was based on data collected through questionnaires. This chapter uses descriptive statistical techniques such as frequency, mean, and standard deviation. The study also employed a regression model to assess the factors influencing access to subsidised agricultural inputs. The results will be presented in line with the study's objectives.

Table 4. 1: Questionnaire Distribution and Response Rate

Study Area	Target Sample size	Questionnaire Distributed	Questionnaire Returned	Response Rate (%)
Manhenga Ward 10	100	100	100	100
Total	100	100	100	100

Source: Field Survey Data (2026)

Table 4. 2: Distribution of sampled households by village in Manhenga ward in Bindura

Study area	Ward	Villages	Frequency N=100	Percentage (%)
Manhenga	10	Mutandiri	45	45.0
		Kache	2	2.0
		Chingwaru	16	16.0
		Nyakache	4	4.0
		Maredza	7	7.0
		Mhizha	26	26.0

Source: Field Survey Data (2026)

4.2 DEMOGRAPHICS AND FARM CHARACTERISTICS OF RESPONDENTS

Table 4. 3:Demographic factors(age)

Age group	Frequency(N)=100	Percentage (%)=100
18-24 years	13	13.0
25-34 years	32	32.0
35-44 years	34	34.0
45+ years	21	21.0

Source: Field Survey Data (2026)

The table above shows majority of farmers fall within the 35-44 age group (34%). The second highest number of people is between 25 and 34 years of age, representing 32%. In addition, 21% of the participants are 45 years and above, while only 13% are between 18 and 24 years of age.

These results show that most of the farmers fall within the economically active age group (35-44 years), a period characterised by high productivity. The results presented align with those of Jayne et al., (2018), who observed that middle-aged farmers largely dominate smallholder farming in Sub-Saharan Africa. This is because these farmers have better access to agricultural resources, farming knowledge, and decision-making authority within households (Pelekamoyo & Umar, 2019). Likewise, Moyo, T. (2021) noted that middle-aged farmers are more likely to participate actively in government agricultural programmes because they depend heavily on farming for household livelihoods and food security.

The findings show that fewer farmers reported being between 18 and 24 years old. This is caused by a lack of access to land, financial facilities, markets, knowledge, and training in Agriculture. Similar observations were made by the Food and Agriculture Organisation (2017), which reported that youth migration from rural to urban areas continues to reduce youth participation in agriculture because farming is often perceived as less profitable and labour-intensive.

Table 4. 4: Demographic factors (Gender, household size and marital status)

Variable	Category	Frequency(N)=100	Percentage (%) =100
Gender/Sex	Male	46	46.0
	Female	54	54.0
Household size	1-3 people	5	5.0
	4-6 people	57	57.0
	7-9 people	31	31.0
	10 and above	7	7.0
Marital status	Single	29	29.0
	Married	45	45.0
	Widowed	22	22.0
	Divorced/separated	4	4.0

Source: Survey Results 2026

Table 4.4 shows that the percentage of female farmers was slightly higher than that of male farmers in the Bindura area, with a percentage of 54% being female, while only 46% were male farmers. This suggests the important role of females in agricultural activities such as crop production, seed preservation, input management, nutrition, and markets. The findings are consistent with literature in Sub-Saharan Africa, which views women as central contributors to agricultural output and food security. Women continue to be disadvantaged due to limited access to land, agricultural finance, extension services, and decision-making opportunities (World Bank, 2022).

The results show that the majority of households in the study area have 4-6 members, representing 57%. This is followed by households with 7-9 members (31%). Some households reported having between 1 and 3 members, representing 5%. Households with 10 or more members are 7%. The results show that the majority of households in the study area have moderate family sizes. The findings are consistent with previous studies,

which argue that larger households often have greater labour availability. They are likely to participate in agricultural programmes due to their higher consumption needs and vulnerability status (Ragasa et al., 2021).

The research studies show that the majority of participants are married (45 %), indicating that agricultural activities tend to be family-centred, with spouses jointly involved in farming. The single is 29%, widowed (22%) and divorced (4%). Marital status influences household decisions and resource use, which can affect access to agricultural inputs. As noted by the Food and Agriculture Organisation (2023), married households tend to make more stable, long-term farming decisions, including adoption of improved seed varieties and participation in agricultural programmes aimed at enhancing productivity.

Table 4. 5: Demographic factors (Education level and Income)

Variable	Category	Frequency (N)=100	Percentage (%) =100
Education level	Primary	22	22.0
	Secondary	44	44.0
	University /college	14	14.0
	Vocational skills	13	13.0
	Other	5	5.0
	None	2	2.0
Monthly estimated income	Less than $100	63	63.0
	$101_$200	34	34.0
	$201-_$300	3	3.0

Source: Survey results 2026

The education level results above show majority of the participants have completed secondary education (44%), followed by primary education (22%). Hence, fewer participants attended college/university (14%), vocational training (13%), other types of education (5%), and 2% of them never attended any formal education. The observations

above are similar to previous research in Sub-Saharan Africa, which suggests that most small-scale farmers have an educational background ranging from primary to secondary levels, with very few educated to the tertiary level (World Bank, 2019). According to the Food and Agriculture Organisation (2017), rural agricultural societies are known for having few members who can attain higher levels of education owing to past inequities and restricted access to education in rural areas.

On the contrary, farmers with low educational qualifications may face challenges in accessing information, applying for the programs, and adopting suggested practices, which can impede the effectiveness of such programs (International Fund for Agricultural Development, 2021). In contrast, evidence from Ghana suggests that higher levels of education may be associated with lower participation in subsidy schemes, as educated individuals are more likely to diversify into non-farm employment (Mustapha et al., 2016)

The results indicate that the majority of respondents (63%) earned less than $100 per month. Furthermore, 34% of the respondents earned between $101 and $200, while only 3% earned more than this. The results indicate that most smallholder farmers face income challenges which often affect their ability to acquire necessary inputs such as improved seeds, fertilisers, chemicals, and implements.

Table 4. 6: Farm characteristics (Land size, yield, and farming experience)

Variable	Category	Frequency N=100	Percentage (% =100)
Size of arable land	1ha	52	52
	2ha	28	28
	3ha	12	12
	4ha	4	4
	5ha	4	4
Yield	0-2 (low yield)	68	68
	3-5 (medium yield)	29	29
	6-10tonnes (high yield)	3	3
Farming experience	2-5 years	27	30
	6-9 years	35	38.9
	10-13 years	8	8.9
	14+	20	19.8
Total		90	100

Source: Survey Results 2026

The majority of farmers (52.0%) owned 1 hectare of land. This was followed by 28.0%, presenting farmers owning 2 hectares of land. Fewer farmers owned 3 hectares (12.0%), 4 hectares (4.0%), and 5 hectares (4.0%). In conclusion, 80.0% of farmers own between 1 and 2 hectares of land. These trends are consistent with communal farming practices where land fragmentation and small plot sizes hinder expansion and productivity.

The results in Table 4.6 show that 68% of the participants produced between 0 and 2 tonnes per year, indicating low agricultural yields. This was due to limited access to good-quality inputs, including fertilisers, seeds, and agrochemicals.29% of the respondents harvested 3-5 tonnes of produce, indicating moderate agricultural productivity. Only 3% reported high productivity levels from 6 to 10 tonnes per year. These findings are supported by Jayne et al., (2018); small land sizes are a common feature of most communal farming systems in Sub-Saharan Africa. Low harvests are caused by limited access to quality inputs, inadequate rainfall, poor soil fertility and limited capital to invest in technologies.

Table 4.6 shows that most participants (38.9%) had 6 to 9 years of farming experience, followed by 30% who had 2 to 5 years of experience. 8.9 % of farmers had 10-13 years of experience, while 19.8% had over 14 years of experience. This distribution indicates that the majority of the farmers have moderate levels of farming experience, which may positively influence their adoption of modern agricultural technologies and participation in government support programmes. Farmers with more experience were better positioned to utilise subsidised inputs. Those with less experience need training on how to utilise the input effectively. According to Ragasa et al. (2021), farm experience makes farmers more knowledgeable about agriculture and the decision-making process. However, farm experience does not increase productivity unless the farmers have access to additional resources.

Table 4. 7: Farm characteristics (Access to extension support)

Variable	Category	Frequency	Percentage (%)
Access to extension services	Monthly	39	48.1
	Once per season	36	44.4

	Rarely	6	7.4
Total (N)		81	100

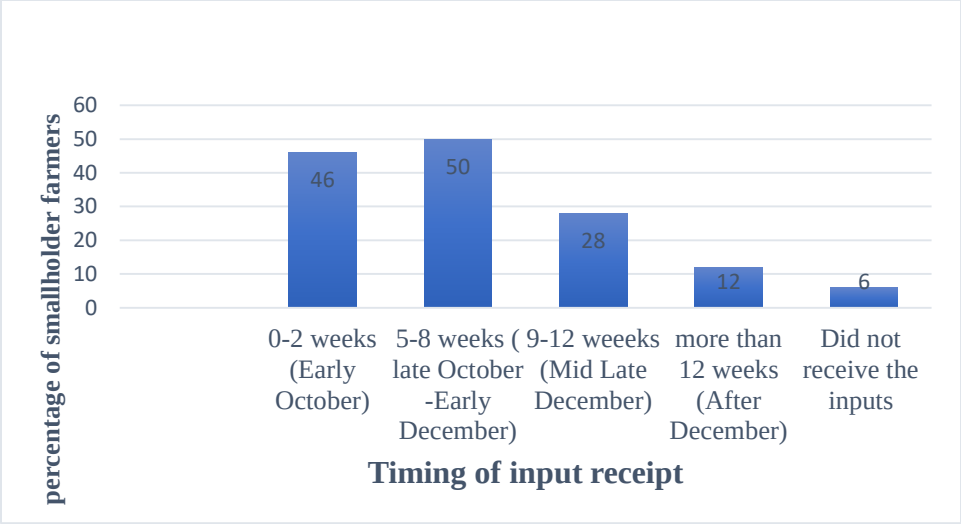
Source: Survey results 2026

From Table 4.6, it can be concluded that 48.1% of farmers in Manhenga receive support from extension officers once a month, whereas 44.4% receive support once per season. However, 7.4% of the farmers in Manhenga rarely receive support from extension officers. This means that approximately 92.6% of the farmers receive support from extension officers. These findings reveal that extension support is relatively accessible within the study area. According to Mustapha et al. (2016) and Ragasa et al. (2021), extension services significantly enhance farmers' access to agricultural information, improve awareness of input subsidy programmes, and increase the likelihood of effective input utilisation. Similarly, the Food and Agriculture Organisation (2017) emphasises that strong extension systems are essential for translating agricultural policies into improved farm-level outcomes.

4.3 SECTION B: EFFICIENCY IN SEED DISTRIBUTION

Timing of input delivery

Figure 4. 1: Timing of receiving inputs



Source: Survey Results 2026

The results in Figure 4.1 show the timeline of the distribution of the subsidised input (seeds, inputs, and chemicals). From the bar graph in Figure 4.1, it is evident that the majority of the small-scale farmers, that is, 50%, received the inputs between 5 and 8 weeks after the onset of rainfall. This implies that most small-scale farmers received the inputs late in the planting season, thereby compromising the establishment of the crops.

Only a small percentage (4%) of the small-scale farmers in Bindura received the input within the first 0 to 2 weeks from the commencement of the rainfall. This implies that the input was delivered on time to these small-scale farmers, allowing them to plant the crops at the optimum time. A substantial number of farmers, that is, 28%, received the input between 9 and 12 weeks from the commencement of the rainfall, while 12% of the small-scale farmers in Bindura received the input after 12 weeks from the commencement of the rainfall. This implies that the input was delivered late to the farmers in Bindura. In addition, 6% of the small-scale farmers in Bindura did not receive the input.

These findings are consistent with previous studies on agricultural input subsidy programmes in Zimbabwe and other African countries. Moyo, N. (2021) observed that delays in input distribution are a major problem affecting government-supported agricultural programmes, as farmers often receive inputs after the onset of rains when planting should already be underway. Similarly, Ricker-Gilbert et al., (2017) found that

delayed delivery of subsidised inputs reduces the effectiveness of subsidy programmes because late planting negatively affects crop yields and household food security.

Number of visits to the distribution point

Table 4. 8: Number of visits to the input distribution point

N(Sample)	Mean	Median	Mode	Standard deviation	Variance	minimum visits	maximum visits
99	1.93	2	2	1.154	1.332	0	10

Source: Survey results 2026

Table 4.8 presents data collected from 99 participants regarding the number of times farmers visited distribution points. On average, farmers visited to collect their inputs 1.93 times. The average is also equal to the median and modal values, which is 2. The minimum number of times a farmer visited to collect their inputs ranged from 0 to 10. This implies that although most farmers succeeded in collecting their subsidised farming inputs in two visits, some had to visit many times. This implies that there is some variation in farmers' experiences, as suggested by a standard deviation of 1.154 and a variance of 1.332. This implies that although most farmers can collect their farming inputs in a short time, some had to visit many times to collect inputs. This may imply some inefficiencies in the seed distribution system in Bindura. Repeated visits may increase transaction costs for farmers through transport expenses, time losses, and reduced labour availability for other farming activities.These results are supported by Dorward & Chirwa (2012), in input subsidy systems in Malawi, farmers may receive inputs within a short period of time, but logistical delays and poor targeting can lead to increased repeated visits and transaction costs for farmers.

Additional transportation/logistical costs (e.g., hiring a truck, bus fare) to collect the subsidised seed

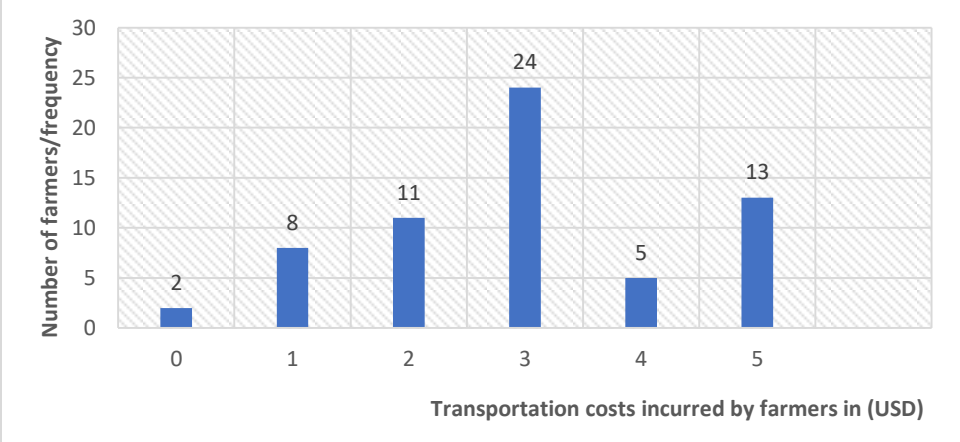
Table 4. 9: transportation and logistical costs

Total cost (USD)	Frequency	Percentage %
0	2	3.2

1	8	12.7
2	11	17.5
3	24	38.1
4	5	7.9
5	13	20.6
Total	63	100

Source: Survey results 2026

Figure 4. 2: distribution of transportation costs



Source: Survey Results 2026

Table 4.9 and Figure 4.2 show the distribution of additional costs incurred by different farmers when accessing subsidised seed inputs. These costs include hiring transport, paying bus fares, or other arrangements to access the input distribution points. The majority of participants (38.1%) incurred costs of $3.00 when accessing the subsidised seed inputs. This was the common cost category. In addition, 20.6% incurred costs of $5.00, while another 17.5% incurred costs of $2.00.A small percentage (12.7%) incurred $1.00, while another small percentage (7.9%) incurred $4.00. On the other hand, only 3.2% of farmers incurred no cost when accessing the input.

The findings indicate that most farmers incurred additional costs when accessing subsidised inputs, with the majority spending approximately US$3.00. However, even though these amounts are relatively small, they constitute a financial burden on poor small-scale farmers since most participants earned less than US$100.00 per month. Similar findings were reported by Dorward et al. (2012), who observed that transport and

transaction costs often reduce the effectiveness of agricultural subsidy programmes in rural Africa.

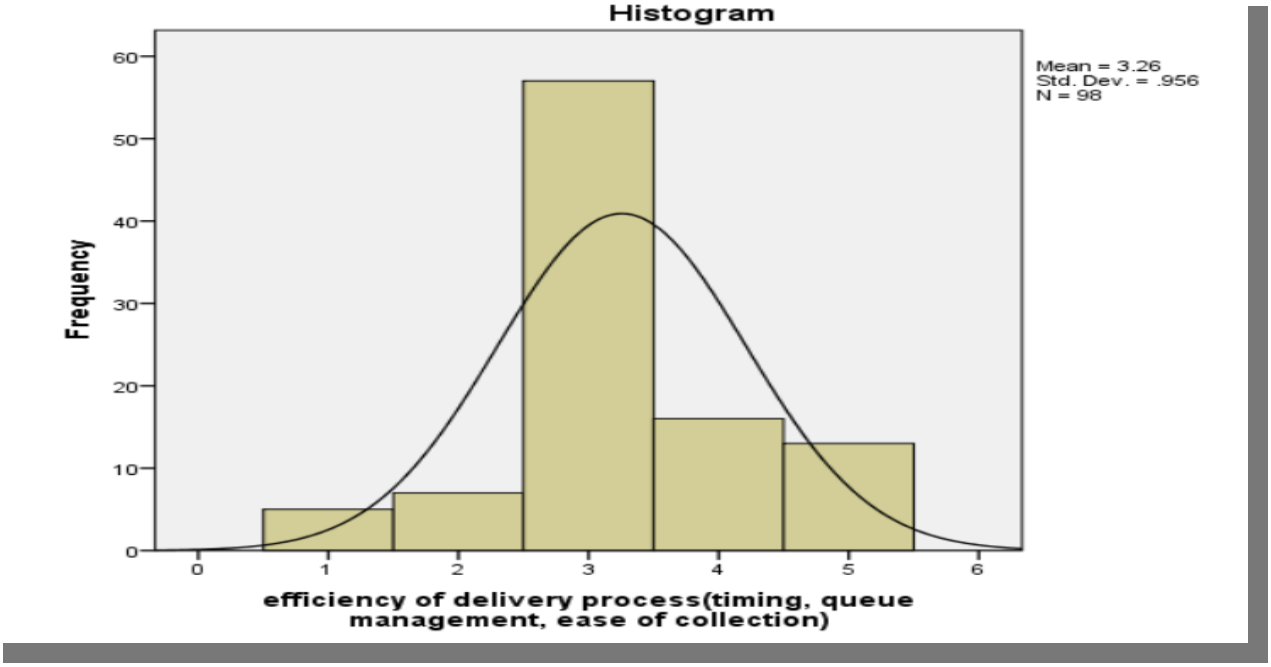
Efficiency of the delivery process (timing, queue management, ease of collection)

Table 4. 10: Delivery process (timing, queue management, ease of collection)

Efficiency of the delivery process	Frequency (N)	Percentage (%)
1(very dissatisfied)	5	5.1
2(dissatisfied)	7	7.1
3 (moderate)	57	58.2
4 (satisfied)	16	16.3
5 (very satisfied)	13	13.3

Source: Survey results 2026

Figure 4. 3: Delivery process (timing, queue management, and ease of collection)



Source: Survey Results 2026

In addition, Table 4.9 and Figure 4.3 show farmers' perceptions of the efficiency of the input delivery process, especially in terms of its timeliness, management of queues, and ease of collecting the inputs. A majority of 58.2% of the farmers perceived the system as moderately efficient. Moderate satisfaction levels may reflect partial improvements in distribution systems, although challenges such as long queues, overcrowding, and delays still affect service delivery. A combined 12.2% of farmers expressed dissatisfaction with the system. This implies that some of the challenges affecting farmers include delays in input delivery, long queues, and system inefficiencies. On the other hand, 29.6% of farmers were satisfied or very satisfied with the system. This implies that some of the input delivery points are relatively efficient. This suggests that input delivery points are still relatively efficient.

Farmers' access to requested seed types and varieties

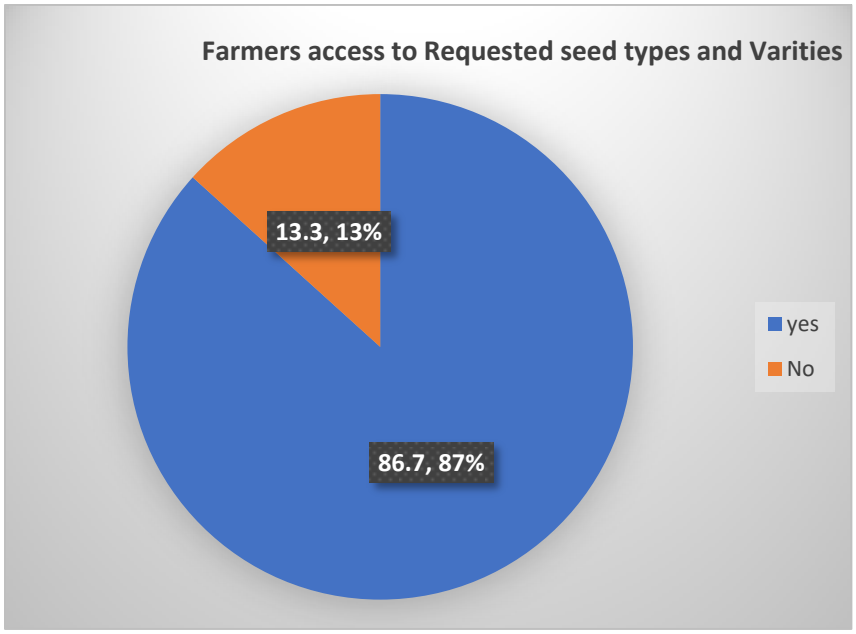
Table 4. 11: Responses on Receipt of Requested seed types and varieties

Farmers' access to seed type and variety	Frequency (N)	Percentage (%)
yes (received)	85	86.7
No (Not received)	13	13.3

Total	98	100

Source: Survey Results 2026

Figure 4. 4:Farmers' responses on whether they received the requested crop and variety



Source: Survey Results 2026

The results show that a majority of the respondents (86.7%) received the crop and variety they originally requested. This suggests that the subsidy program is relatively efficient in terms of allocative efficiency, where inputs distributed correspond closely with farmers' production needs and preferences.

Results show that 13.3% of farmers did not receive the seed and crop they requested. Access to the requested seed varieties is important because different varieties are adapted to various agroecological conditions and maturity periods. Different studies have shown that crop performance is likely to be affected by the failure to receive the requested variety, where farmers may be forced to adopt crop varieties that are not suited for their specific conditions or objectives (FAO, 2021).

Farmers' perceptions of the performance of subsidised agricultural inputs

Table 4. 12: Perceptions on Quantities and Qualities Satisfaction Based on Performance

Input performance variable	Category	Frequency (N)	Percentages (%)
i)Seed germination	Yes	89	89.0
	No	9	9.0
	Not received	2	2.0
Total		100	100.0
ii) Fertiliser Effectiveness	Yes	8	8.2
	No	76	78.4
	Not received	13	13.4
Total		97	100.0
iii)Herbicide effectiveness	Yes	22	24.4
	No	15	16.7
	Not received	53	58.9
Total		90	100.0

Source: Survey Results 2026

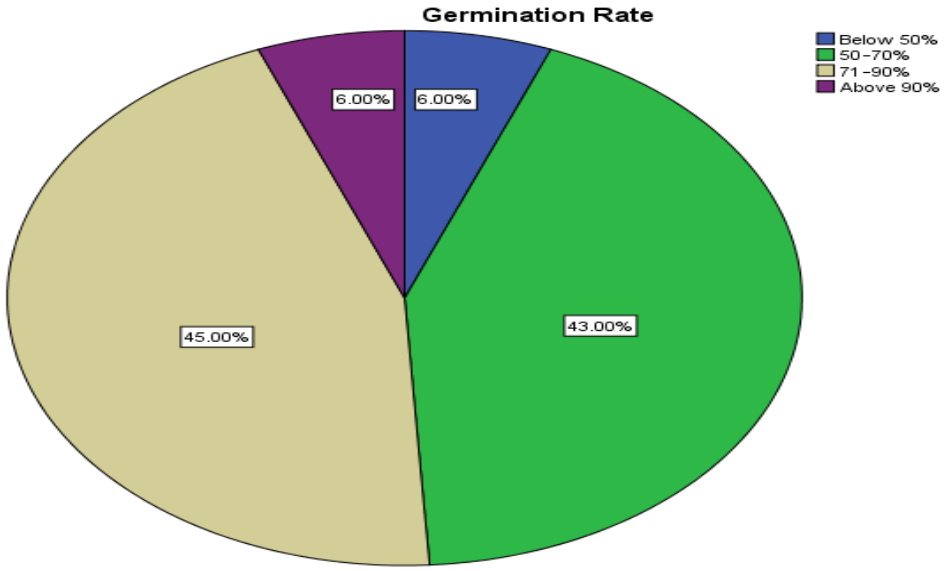
The table shows the feedback provided by farmers on the effectiveness of different subsidised agricultural inputs, including seed germination, fertiliser effectiveness, and herbicide effectiveness. For seed germination, it was evident that most farmers (89%) reported that the seeds they received germinated successfully. This suggests that there was a good outcome in this area because very few people (9%) reported that their seeds germinated badly, while 2% were not provided with seeds.

In terms of fertiliser effectiveness, it was evident that most people were not satisfied with the outcome because while 8.2% reported that the fertilisers were effective, 78.4% reported that the fertilisers were not effective in this case. Additionally, 13.4% were not provided with fertilisers. The low satisfaction with fertiliser effectiveness may not necessarily reflect poor fertiliser quality alone. Other factors, such as inadequate rainfall, poor soils, incorrect application methods, or insufficient quantities, may also have influenced farmer perceptions

For herbicide effectiveness, it was evident that while 24.4% reported that herbicides were effective, 16.7% reported that they were not effective. However, 58.9% were not provided herbicides; this suggests that input subsidy packages were probably incomplete because they lacked some critical production inputs.

Germination rate percentages

Figure 4. 5: Performance of seed germination in percentages



Source: Survey Results 2026

The findings indicate most of the samples (45% achieved germination rates between 71% and 90 %, which is considered a high-performance level. This suggests that most seeds distributed through government input schemes, including maize, were of good quality and had the potential to produce a satisfactory crop. These results are similar to the findings of Monyo and Varshney (2016), who reported that improved seed varieties distributed by the government have generally higher germination rates and contribute to improved crop performance.

Figure 4.5 also presents 43% of the samples recorded germination rates below 50%, indicating variations in seed performance. The findings are supported by FAO (2022), seed quality problems, including poor storage conditions, late input supply and exposure to adverse environmental conditions, can reduce germination rates among smallholder farmers

Only 6% of the samples show germination rates above 90 %, indicating that very few seed lots reached optimum germination performance. These results contrast with studies by Abadia & Bartosik (2018) suggesting certified seeds stored under good temperature and moisture conditions can have germination rates exceeding 90 %.

Additionally, another 6% of samples indicate poor germination rates below 50%. This could be due to factors such as seed quality, pests, or local environmental conditions.

4.4 SECTION C: EQUITY OF ACCESS AND ACCESS LEVEL

This section evaluates whether the government input subsidy programme in Bindura District provides fair and equal opportunities for different groups of farmers to access inputs. Equity is measured through key indicators such as eligibility, exclusion despite eligibility, receipt of full input allocation, quantities received and farmers' perception of fairness and accessibility. The analysis uses descriptive statistics, cross-tabulations, and regression modelling .

Table 4. 13: Equity and access level

Variable	Category	Frequency	Percentage %
Eligible for the subsidy last season	Yes	97	97.0
	No	3	3.0
Total		100	100.0

Excluded despite eligibility	Yes	17	17.0
	No	83	83.0
Total		100	100.0
Received full quantity	Yes	45	45.9
	No	53	54.1
Total		98	100.0
Comparison with other farmers	Better access	3	3.0
	Worse access	43	43.0
	Equal access	54	54.0
Total		100	100.0
Other inputs received			
None	Yes	56	56.6
	No	43	43.4
Total		99	100.0
Herbicides	Yes	15	15.2
	No	84	84.8
Total		99	100.0
Pesticides	Yes	3	3.0
	No	96	97.0
Total		99	100.0
Lime	Yes	2	2.0
	No	97	98.0
Total		99	100.0
Other subsidised inputs received	Yes	30	30.3
	No	69	69.7
Total		99	100.0
Other Input Support Programs	Yes	41	43.6
	No	53	56.4
Total		94	100.0

Source: Survey Results 2026

From the data analysis of equity of access and participation in the government input subsidy program in the Bindura District, some of the key findings include:

Eligibility and Exclusion: The data shows that most of the farmers in the region are eligible to receive the subsidies, with 97% of them having been eligible to receive the subsidies in the last season. However, 17% of the eligible farmers still do not receive the subsidies, which shows that some gaps still exist in ensuring that all eligible farmers have

access to the subsidies. Similarly, findings from the Pfumvudza programme reported that some eligible farmers fail to receive inputs due to registration problems and distribution inefficiencies. Therefore, the current results are in alignment with previous literature that government support schemes struggle to achieve complete coverage of eligible farmers.

Full Input Receipt: The results show that only 45.9% of the smallholder farmers in the region receive their full quota of inputs, which shows that some gaps still exist in ensuring that all farmers receive their inputs. The studies conducted on input support programmes in Zimbabwe and Sub-Saharan African countries have shown that budget constraints, logistical challenges, and supply shortages result in farmers receiving less than their allocated inputs.

Perceived Access Comparison: The data shows that the majority of the farmers in the region feel that their access to the inputs is worse compared to other farmers, with 54% of them feeling that their access is the same, 43% feeling that it is worse, and only 3% feeling that it is better. These results are consistent with studies that address equity in input distribution. The previous studies have shown that politics, social connections, geographic location and local leadership structures all play a role in the distribution of subsidised inputs among farmers, making some beneficiaries view the process as being unfair. Therefore, the results support literature highlighting persistent inequalities in access to government input schemes.

Other Inputs received: The results show significant disparities in farmers' access to complementary inputs. According to Table 4.14 above, the majority of the respondents (56.6%) recorded receiving at least one type of input, while only 43.4 % indicated they did not get any input. Additionally,15.2% recorded they received herbicides, e.g., glyphosate, whilst the majority did not. These results show limited support for weed management. In contrast, access to pesticides was limited, with only 3% who reported receiving. This indicates that pest and disease management support was limited or absent for small-scale farmers. Thus, the absence of pesticides may increase crop losses due to pests and diseases, thereby causing a decline in agricultural yields. Moreover, access to Lime was limited, with only 2 %. Lime is a crucial input that is used for correcting soil acidity and improving nutrient availability in areas with acidic soils. Hence, the low

distribution of lime indicated limited support for soil fertility management. In addition, the results further show that 30.3 % of the participants received other subsidised inputs, while 69.7 did not get anything. This may indicate that additional forms of support were available to other farmers, but they were not widely distributed within the area.

Additional Support Programs: The data show that 43.6% of the farmers in the region receive input subsidies from other input support programs. However, approximately 56.4% did not receive subsidies from other programs. The previous studies have suggested that farmers who are better connected to extension services, farmer groups or development projects have the opportunity to benefit from multiple initiatives (Ragasa et al., 2021; Liverpool-Tasie et al., 2020)

Research shows that most of the farmers in the region are eligible to receive the subsidies and do receive them. Therefore, gaps persist in ensuring all eligible farmers have the opportunity to access inputs.

Perception statements on government input subsidy programs

Tables 4. 14: Perception statements on government input subsidies

Category	N (Frequency)	Mean	Std deviation
Fairness of selection	100	3.2	0.9
Ease of access	100	2.8	0.8
The selection criteria were fair	64	3.1	0.9
Gender did not affect inputs	67	4.3	1.1
Wealthier farmers not favoured	67	3.2	1.3
The program reached vulnerable farmers	57	3.5	1.3
No bribery	54	4.0	1.5
Information clear	61	4.0	1.3
Qty of seed received	98	8.5	7.7
Basal fertilizer received	97	37.9	42.7
Qty of top dressing received	99	35.1	37.8

Source: Survey Results 2026

Results in Table 4.14 show the perceptions of the farmers regarding the fairness and transparency of the government's seed subsidy program. The mean for fairness in the selection of the program beneficiaries was 3.16, showing a moderate level of satisfaction.

However, ease of access to inputs was lower, at 2.84, showing that there are problems with accessibility of inputs to most of the farmers.

Regarding the factors that affect the distribution of inputs, perceptions that gender does not affect the amount of input that a farmer can receive were the highest, at a mean of 4.25. This implies that most of the farmers think that gender does not affect the amount of input that a farmer can receive. In addition, perceptions of clarity and timeliness of information for program beneficiaries were also positive, with a mean of 3.95.

Perceptions of the farmers that there is no need for any form of bribery to access inputs were also positive, with a mean of 3.69. This implies that most of the farmers think that there is no need for any form of bribery. In addition, perceptions of the inclusiveness of vulnerable and poor households were positive, with a mean of 3.46. This implies that there is a relatively moderate level of inclusiveness of poor households.

From the results above, it is very clear that there is a relatively high level of transparency and fairness in the program, but there are also problems with ease of access.

Determinants of access to subsidised inputs

Table 4. 15: Determinants of Access

Predictor	B	St. Error	Beta (β)	t-value	Sig (p-value)
Constant	1.397	0.451	—	3.102	0.003
Gender	-0.204	0.133	-0.125	-1.533	0.129
education level	-0.126	0.054	-0.189	-2.339	0.022
Distance to seed collection	0.009	0.012	0.071	0.782	0.436
Long distance to collection point	0.090	0.057	0.146	1.569	0.120
Late delivery of seed	0.332	0.057	0.514	5.847	0.000
Not receiving the correct amount	0.252	0.057	0.407	4.382	0.000
Household size	-0.287	0.104	-0.242	-2.760	0.007

Model Statistics	Value
R	0.668
R^2	0.446
Adjusted R^2	0.402
F-Statistics	10.125
VIF range	1.0-1.3
Durbin Watson	2.453
VIF Range	1.0-1.3
Std. error of estimate	0.631

Source: Survey Results 2026

Estimated Regression Equation

$$\begin{aligned} \textit{Ease of Access} &= 1.397 - 0.204(\textit{Gender}) - 0.126(\textit{Education Level}) \\ &+ 0.009(\textit{Distance to Seed Collection}) \\ &+ 0.332(\textit{Late Delivery of Seed}) - 0.287(\textit{Household Size}) \\ &+ 0.252(\textit{Not Receiving Correct Amount}) \\ &+ 0.090(\textit{Long Distance to Collection Point}) + \varepsilon \end{aligned}$$

Regression results

To identify the key factors influencing smallholder farmers' access to subsidised seed inputs in Bindura District, a multiple linear regression model was estimated. The model integrated demographic, socio-economic, and institutional variables to explain the variance in the ease of access. The results of this analysis are summarised in Table 4.15.

Model fit and statistical significance

The regression results produced an F-statistic of 10.125 ($p < 0.001$). It indicates that the set of explanatory variables jointly and significantly influences access to subsidised inputs. The coefficient of determination (R^2=0.446) shows that the model explains 44.6% of the variation in the ease of access.

When adjusted for the number of predictors, the Adjusted R^2 of 0.402 shows a solid model fit. The R value (0.668) indicates a strong positive relationship between observed

data and predicted values. The standard error of estimate (0.631) indicates a moderate spread around the regression line.

Diagnostic Test

The multicollinearity (VIF 1.0 -1.3) and autocorrelation (Durbin Wtson =2.453, falls within the recommended range of (1.5 -2.5 range).The study conducted two other tests which include the Shapiro-Wilk tests to assess whether residuals were normally distributed (W=0.947,p=0.002).the p-value falls below the 0.05 threshold, indicating a statistically significant departure from normality.

A Breusch test was also conducted to assess homoscedasticity of the residuals (LM (7)=7.809,p=0.350). This p value exceeds 0.05, suggesting that the variance of the residuals does not vary with fitted values. The homoscedasticity assumptions, holds ,supporting the validity of the standard errors used for hypothesis testing in this model

Evaluation of explanatory variables

According to Table 4.15, the intercept is positive and statistically significant (B=1.397, then P=0.003). This suggests that even when all other factors are constant, farmers still have a base level of access. The specific influence of the predictors is discussed below

Institutional Inefficiencies: Late delivery of seed was a significant determinant (β = 0.514, $p< 0.001$). This means that delays in distribution reduce effective access, likely by disrupting planting schedules essential for rain-fed farming. Additionally, not receiving the correct quantity of inputs was highly significant (B = 0.252, $p < 0.001$), showing that inconsistent allocation weakens the programme's effectiveness.

Household demographics: Household size exerted a negative and significant effect (B = -0.287, β = -0.242, p = 0.007). This indicates that larger households are more likely to face constraints in accessing subsidised inputs, possibly due to higher demand relative to limited supply.

Socio-economic factors: Education level is also negatively associated with access (B = -0.126, β = -0.189, p = 0.022). This indicates that more educated people are less likely to rely on government programs.

Non-Significant Predictors: In contrast, gender (p = 0.129), distance to seed collection points (p = 0.436), and long distance to collection points (p = 0.120) are not statistically significant. This indicates that these factors are not critical in influencing access in this region

The regression analysis indicates that the main constraints to accessing seed in Bindura District are institutional, delivery timing, and accurate input allocation. This is more important than other conventional factors, such as demographics and geography. Therefore, improving logistics in the subsidy supply chain is more important for seed access than physical proximity to the distribution centres.

4.5 HYPOTHESIS TESTING

Hypothesis is tested as follows:

H0: Government input subsidies have no significant effect on the efficiency and equity of seed distribution among smallholder farmers in Bindura District.

H1: Government input subsidies significantly affect the efficiency and equity of seed distribution among smallholder farmers in Bindura District.

The results showed the regression model was significant ($F=10.125$, $P<0.001$). Four of the variables assessed late delivery of input seed, quantity received, household size, and education level were significant determinants of access at the 5% level. The null hypothesis (H0) is rejected, and the Alternative (H1) is accepted. Research concludes that government input subsidies significantly affect the efficiency and equity of seed distribution among smallholder farmers in Bindura District.

4.6 SECTION D: CHALLENGES AND RECOMMENDATIONS

This section focuses on challenges and recommendations for the subsidy program in Bindura Province.

Table 4. 16: Severity of challenges

Challenges	Mean	Std deviation
Long distance to the collection point	1.7	1.3
High cost of transportation	3.0	1.8
Late delivery of seed	4.5	1.3
Not receiving the correct amount	4.3	1.3
Poor quality inputs	4.2	1.4

Source: Survey Results 2026

The greatest challenges rated as severe by the participants include the late delivery of seed, which was rated the highest with a mean of 4.45 and a low SD of 1.253. This implies that all participants agree on the impact of late distribution of seeds. The late delivery of seeds may impact some farm activities, such as fertiliser application and irrigation, leading to inefficiency (World Bank, 2017). This may lead to delayed harvesting, and as a result, the price may fall as it will not coincide with the demand cycle (IFPRI, 2016). These results are similar to Tagara (2017), who observed that the Presidential input scheme has negatively affected farmers' yields, as they are compelled to plant late or store seeds under unsuitable conditions.

The immediately following factor is not receiving the right number of inputs, with an average of 4.27 and a moderate deviation of 1.308. This implies that most farmers feel they are getting insufficient quantities. As a result, poor growth and yield can occur due to improper use of farming inputs such as seeds, fertilisers, and pesticides.

The participants also rated poor quality of inputs as one of the major factors, which scored a mean of 4.19 and a relatively high SD of 1.377. The poor-quality seeds often contribute to low germination and stunted growth, resulting in reduced agricultural yields. Low-grade seeds could also lead to low income for the farmers (IFPRI, 2016). Low-grade pesticides and fertilisers could also lead to low crop yields since they may not

be effective in controlling pests and diseases. Research studies have shown that crops of poor genetic composition are also prone to pests and diseases

High transportation costs are a moderate problem for the farmers. This is indicated by a mean of 3.04 and a relatively high SD of 1.831. This implies that the problem varies among the farmers and could be attributed to farm location. Farmers with farms in remote areas are likely to experience transportation problems due to long distances and poor road networks. Conversely, farmers with farms near main roads or towns are likely to experience lower transportation costs. Weather conditions, such as poor weather, could also hinder access to transportation. Recent research indicates that high transportation costs constrain farmers, thereby reducing their productivity and income (Mikou et al., 2019; Food and Agriculture Organisation, 2017). Improved transport services in rural regions could reduce costs and enhance farmers' productivity and income (International Fund for Agricultural Development, 2021).

The distance to collection points presents the least challenge for farmers, as indicated by a mean of 1.66 and a standard deviation of 1.304. This suggests that most farmers can access distribution centres without difficulty. This could also indicate that input distribution centres are strategically located, so farmers face minimal distance-related challenges. However, this measure of distance does not account for any challenges that may arise during transportation, such as costs.

Recent studies also show that while physical distance is minimal, other issues such as affordability and infrastructure quality are significant in improving access to agricultural inputs (Food and Agriculture Organisation, 2017; World Bank, 2019). Effective distribution systems have also been noted to reduce travel distance, thereby improving programme effectiveness (International Fund for Agricultural Development, 2021).

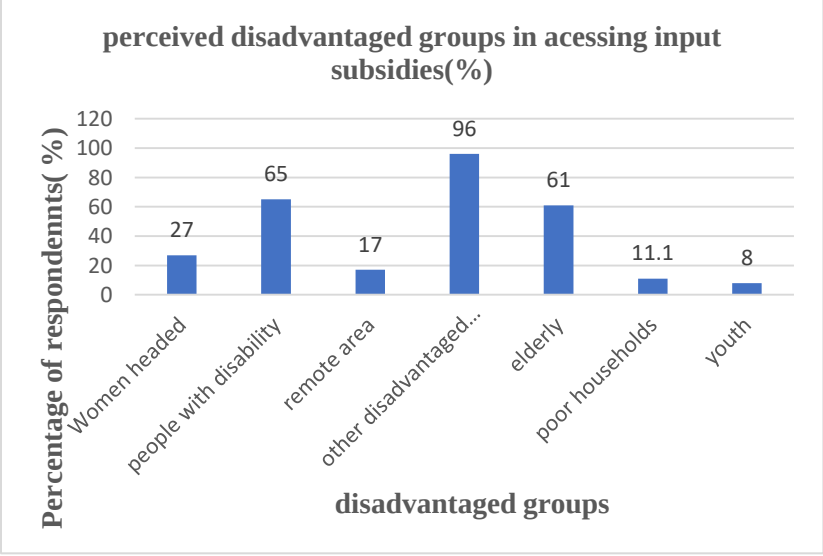
Disadvantaged farmers

Table 4. 17: Disadvantaged farmers

Disadvantaged group	Category	Frequency	Percentage centres%
people with disability	Yes	65	65.0
	No	35	35.0
Total		100	100.0
Women headed	Yes	27	27.0
	No	73	73.0
Total		100	100.0
remote area	Yes	17	17.0
	No	83	83.0
Total		100	100.0
other disadvantaged farmers	Yes	96	96.0
	No	4	4.0
Total		100	100.0
Elderly	Yes	61	61.0
	No	39	39.0
Total		100	100.0
Poor	yes	11	11.1
	No	88	88.9
Total		99	100.0
Youth	Yes	8	8.0
	No	92	92.0
Total		100	100.0

Source: Survey Results 2026

Figure 4. 6: disadvantaged groups



Source: Survey Results 2026

The analysis shows that a majority of the population (96%) believes that other disadvantaged farmers, especially marginalised and socially excluded individuals, face significant barriers to accessing government agricultural inputs. This is supported by past research that socio-economic barriers may be greater than geographic barriers in accessing agricultural inputs (FAO, 2015; World Bank, 2018).

For example, people living with disabilities, as identified by 65% of the sample population, are also considered to be faced with significant barriers in accessing government agricultural inputs. This is supported by past research studies that emphasised the need for inclusive agricultural policies to address physical inaccessibility and communication barriers (IFAD, 2017; WHO, 2019). Similarly, older people (61%) are also believed to face significant barriers to accessing agricultural inputs. This may be associated with their limited adoption of technology, as suggested by past research (UNDESA, 2020).

Women-headed households, which made up 27% of the population, also faced significant barriers in accessing agricultural inputs. These results support research conducted by the World Bank Group (2021), which noted that women farmers face inequalities in land ownership, access to finance and decision-making.

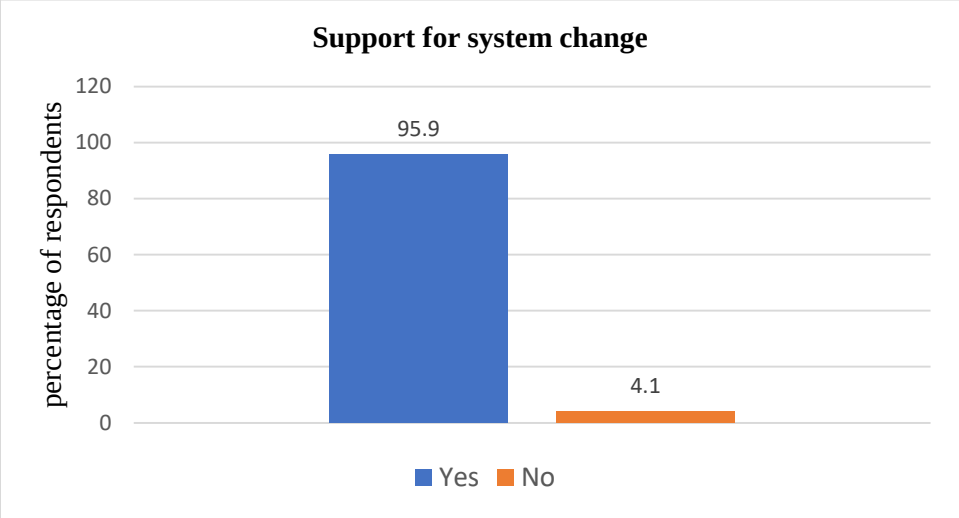
17% of the population believed that farmers in remote areas faced significant barriers in accessing agricultural inputs. These findings differ from those of the International Food Policy Research Institute (2018), which identified poor infrastructure and long travel distances as key challenges affecting rural smallholder farmers' access to agricultural services.

Youth were perceived to face the fewest barriers in accessing agricultural inputs, with only 8% of respondents identifying them as disadvantaged. This is supported by past research (FAO, 2017; UNESCO, 2019), which noted that younger people are more adaptable to modern technologies and have better access to improved agricultural information.

Social, economic, and physical barriers may be greater challenges for farmers than geographic location. This is supported by previous research, which highlights the need for inclusive approaches to address multiple disadvantages (World Bank, 2020).

SUPPORT FOR SYSTEM CHANGE

Figure 4. 7:Support for System Change

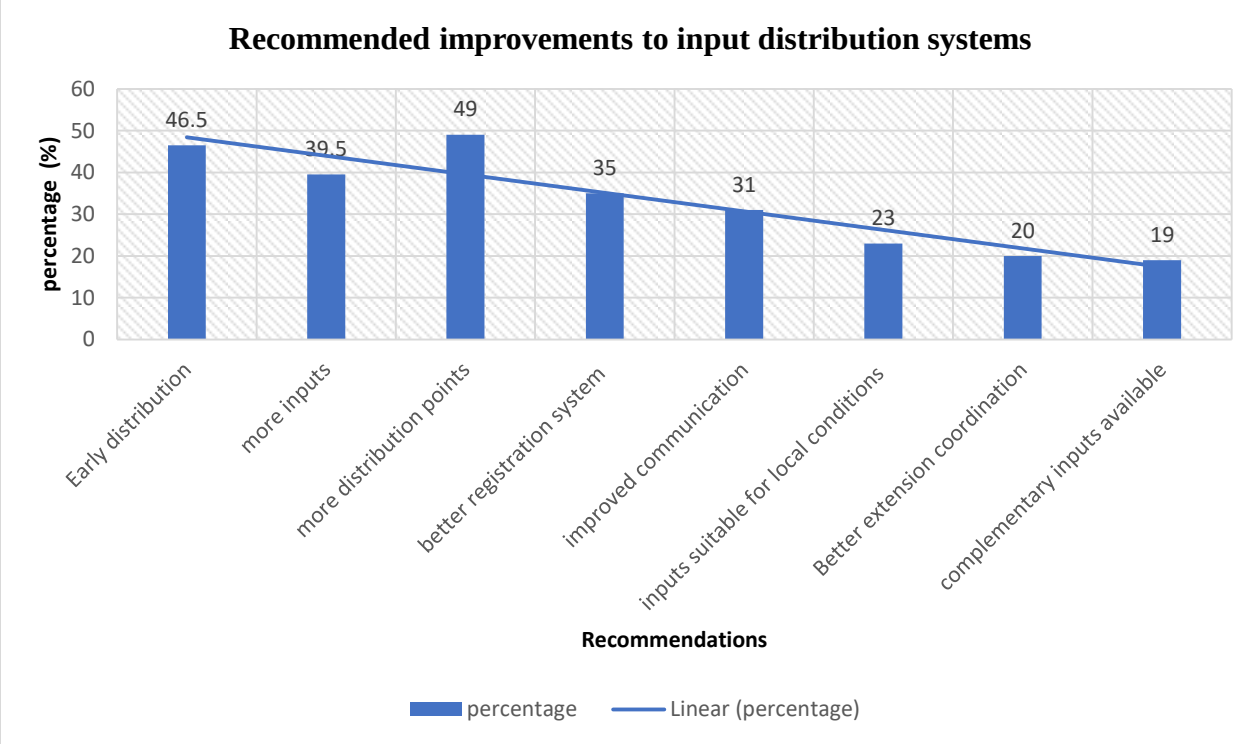


Source: Survey Results 2026

From the findings presented in figure 4.7, it is evident that most respondents from the Manhenga area in Bindura have a strong preference for changes in the government input subsidy system, particularly the Pfumvudza (Intwasa). This could be because many farmers have been affected by problems associated with the prevailing seed distribution system, which made it difficult for others to access. A few (4.1%, n = 4) of the 96 farmers preferred the system to be maintained and did not support a change. These results are consistent with recent research that most smallholder farmers in Zimbabwe have called for changes to the agricultural subsidy system. This is to ensure a more efficient and effective system that benefits all farmers (Muzangwa, 2022).

RECOMMENDATIONS ON IMPROVING EFFICIENCY AND DISTRIBUTION OF GOVERNMENT INPUT SUBSIDIES IN BINDURA

Figure 4. 8: Recommendations on improving efficiency and distribution



Source: Survey Results 2026

Results above show the priorities of smallholder farmers in addressing the improvements that need to be made to the current system of input subsidies. The findings show that almost half of the smallholder farmers (49%) identified the need to increase the number of input distribution points. This shows that a limited number of input distribution points is a barrier to the success of the government programmes. This is because smallholder farmers are located far from the input distribution centres. Similar observations have been made in previous studies, where Mushunje and Muchopa (2021) and the FAO (2022)

found that decentralised input distribution systems significantly improve access, reduce transport costs, and enhance the overall efficiency of subsidy programmes

This is followed by the importance of early input delivery, which was identified by 46.5% of households. This is important in ensuring farmers plant their crops at the right time and maximise their crop yields. This finding aligns closely with the World Bank (2021) and IFAD (2020), which both highlight that delayed input delivery undermines productivity, reduces yields, and weakens the effectiveness of agricultural support programmes. Therefore, there is a clear similarity between the study findings and global evidence on the importance of timely input distribution

In addition, 39.5% of the respondents emphasised the need to increase the input quantities. This means the input allocations are not enough to satisfy the demands of the households in production. This further emphasises the need to reassess the input allocation criteria and ensure equitable distribution of inputs according to the size of farms and the demands of the households.

35% of the respondents reported the need for improvement in communication. This includes the provision of effective communication of information to the farmers on government input schemes procedures. Inefficiencies in communication systems often result in poor implementation of the programme. This can be addressed through effective communication using already established leadership structures and mobile technology platforms, which can strengthen the effectiveness of the programme (FAO, 2022).

The findings of this study suggest that, to enhance the efficiency of the government input subsidy program in Bindura, a phased approach is required. In this regard, immediate interventions to enhance input distribution points, timely delivery of inputs to farmers, input availability, and registration must be taken. Secondary interventions to enhance input subsidy program efficiency may also be undertaken to support the implementation of immediate interventions. This phased approach to improving input subsidy program efficiency is likely to enhance equity and effectiveness in the distribution of inputs to smallholder farmers.

4.7 LINKING THE FINDINGS TO THEORY

The results and findings of this chapter are consistent with the theoretical framework discussed in chapter 2. According to Institutional theory (North,1990), weak formal institutions often result in poor coordination among implementing agencies and inconsistent allocation guidelines. This results in inefficiencies and unequal outcomes. Late input distribution was identified as the strongest and most significant predictor of access (β=0.514 and β=0.0407, respectively); thus, it predominated over demographic and geographical variables. These results are aligned with North's (1990) theory, which suggests that the way the programme is managed and implemented plays a crucial role in determining outcomes rather than characteristics of the farmer. Market failures are reflected in this chapter through the challenges farmers face in collecting subsidised inputs, which may include insufficient input quantities, limited fertiliser quantities and herbicide effectiveness, and additional transportation costs incurred when collecting inputs (Pettinger, 2019). The government input subsidies exist because the private sector often fails to supply agricultural inputs to farmers at affordable prices. The findings in this chapter show that the government itself may create problems of inefficiency and inequalities. The non-significance of gender and distance in the regression model is also theoretically informative, as it indicates that in Bindura, institutional failure is a more common explanatory factor for equity than the demographic and geographical factors emphasised in Sub-Saharan Africa in the literature review. The results suggest that rectifying institutional processes may be more crucial for improving equitable access to inputs than focusing on demographic and geographical factors.

CHAPTER 5: CONCLUSIONS AND RECOMMENDATIONS

5.1 INTRODUCTION

This chapter presents the conclusions of the current research study and discussion of the implications associated with the identified problems. Based on results in Chapter 4, seed distribution networks and related problems are evaluated, and the factors affecting seed distribution processes among small-scale farmers are discussed. The analysis shows that although input subsidy programmes play a key role in improving access to agricultural inputs and supporting rural livelihoods, problems remain. These challenges include delays in seed delivery, inconsistent input allocation, and unequal access among farmers. Consistent with hypothesis testing in Chapter 4, the null hypothesis that government input subsidies have no significant effect on efficiency and equity was rejected in support of the alternative hypothesis.

This chapter provides measures to improve the performance of input subsidy programmes in Bindura District of Mashonaland Central. These measures are particularly directed to relevant institutions such as the Ministry of Agriculture, Fisheries, Water and Rural Development, Agritex officers, local authorities and other bodies. It is important to focus on proper coordination, accountability mechanisms, and timely delivery of inputs among all groups of farmers. Lastly, this chapter highlights areas where future research is still required, particularly district-level studies.

5.2 CONCLUSIONS

The study assessed the effectiveness, efficiency, and accessibility of agricultural input subsidy systems among the smallholder farmers in Bindura. The findings show that government input subsidy programmes remain an important policy instrument for boosting agricultural production and sustaining rural livelihoods. However, various structural, institutional, and operational challenges still prevent these programs from

reaching their full potential.The conclusions are presented inline with study's five objectives as shown below:

1.Objective 1: Efficiency of government input subsidies

Input subsidy programs have improved access to farm inputs such as seeds and fertiliser among poor farmers and farmers who benefited from timely input supply recorded increases in production and food security. However, inefficiencies in the input distribution process were reported, including late delivery, inadequate transportation, and poor coordination among the implementing agencies. As agricultural activities are season-dependent, delays prevent beneficiaries from planting at the right time, which results in lower yields. The government programmes are concluded to be efficient in principle but they are often undermined by logistical and administrative hurdles in the delivery system.

2.Objective 2: Equity of seed distribution Network

The benefits of government programs have not been equally enjoyed by all farming households. 97 % of the farmers were eligible for the government schemes, but 17% received no input, and ease of access recorded a mean score of 2.84 only. The disadvantaged groups, comprising the disabled and elderly encountered greatest challenges, with other additional constraints reported by female-headed households and farmers in remote areas.

3.Objective 3: Determinants of Access

The regression model was statistically significant ($F=10.125$, $P<0.001$) and explained 44.6% of the variation in ease of access ($R^2=0.446$). The variables such education level, late delivery, not receiving the correct quantity, household size were the significant determinants of access at the 5% level, while distance to collection point and gender were not significant. Therefore, the study concludes that access is shaped by programme implementation and allocation factors other than geographical characteristics.

4.objective 4: Key challenges faced by farmers

The fourth objective showed the challenges that were identified by farmers including long distances to collection points, high transportation costs, late delivery, insufficient quantities and poor-quality inputs. Governance issues continue to affect the transparency and fairness of distribution of inputs to beneficiaries. Weak monitoring, lack of accountability and favoritism in beneficiary selection were identified as factors affecting trust in the programmes. Additionally, farmers with limited access to extension services and communication networks have limited knowledge on registration deadlines and distribution schedules. It can be concluded that logistical, governance, and information access barriers reduces programme reliability and prevents the most vulnerable households from benefiting.

5.Objective 5: Measures for improving efficiency and equity

As the results show from objective 1 to objective 4, simply increasing input subsidies will not achieve sustainable development in agriculture. There needs to be a greater focus on efficiency and equity issues such as timely distribution of input subsidies, transparent beneficiary targeting, and stronger communication and extension support. These measures are explained in detail as direct stakeholder recommendations in section 5.3.

In general, the findings indicate that although agricultural input programmes are needed to support small-scale farmers, their long-term success depends on major improvements in targeting, governance, transparency, and distribution efficiency. Hence, such improvements will strengthen the contribution of smallholder agriculture to food security in Zimbabwe.

5.3 RECOMMENDATIONS

Based on the results of this study, several recommendations have been proposed to improve the implementation and impact of input subsidy programmes in Bindura. The recommendations in this study are directed to the Ministry of Lands, Agriculture, Fisheries, Water and Rural Development, AGRITEX staff members, local authorities, GMB, and the development partners. These recommendations align with Zimbabwe's NDS1, which focuses on agricultural development, food security, climate change

resilience and rural inclusion to achieve Vision 2030 through economic empowerment and modernised agriculture.

Improve the Timeliness of Input Distribution

The Ministry of Lands, Agriculture, Fisheries, Water and Rural Development, in collaboration with the Grain Marketing Board (GMB) and other input providers, should ensure that agricultural inputs such as seeds, fertilisers, and chemicals are delivered to farmers before the onset of the rain season. The study findings show that delays in input delivery are major challenges that limit the effectiveness of agricultural subsidy schemes. In most cases, inputs arrive after the farming activities have already started. To address this, early procurement and stronger coordination between national, provincial, and district levels are needed. In addition, inputs should be pre-positioned in ward-level centres, such as schools, GMB outlets and community halls, to improve access for beneficiaries.

For example, inputs can be supplied from August to September through programmes such as the Pfumvudza/Intwasa rather than waiting until later in the season. This would give farmers enough time to prepare land by clearing, applying manure and planting as soon as the first rains fall. Timely delivery of inputs will not only improve agricultural efficiency but also build resilience to climate change impacts, including droughts and irregular rainfall. Hence, improving input delivery will support national efforts to enhance food security and cereal production in Zimbabwe.

Strengthen and Decentralise Distribution Systems

Although the study found that farmers could access distribution centres, high transportation costs remained a major challenge, especially for low-income households. The Ministry of Agriculture and local authorities should therefore decentralise input distribution by bringing services closer to farming communities. This can be achieved by establishing temporary ward-based distribution points during peak periods. Schools, churches, rural service centres, and community halls can serve as local collection points to reduce travel distance and transport costs for farmers.For example, farmers in remote parts of Bindura, such as Manhenga and surrounding areas, often spend significant

amounts of money travelling to central distribution points. Introducing temporary local centres during input distribution periods would reduce these costs and improve accessibility, particularly for elderly farmers, women, and vulnerable households.

Improve Targeting and Beneficiary Selection

However, some deserving farmers did not get the inputs, while others appeared to have received them twice. This shows inefficiency in the current process of selecting and verifying beneficiaries. To promote fairness, accountability, and transparency, the Ministry of Lands, Agriculture, Fisheries, Water and Rural Development should introduce better targeting methods by building credible farmer databases and ensuring community verification processes.

The AGRITEX agents must ensure active participation by village headmen, ward development committees, and other community structures in identifying beneficiaries using clear selection criteria. The use of community structures in the verification process is likely to help avoid discrimination against some deserving beneficiaries. Beneficiaries must be posted in the community before the distribution of subsidised inputs. Public posting allows community members to verify information and helps prevent corruption, misappropriation, and duplication.

In addition, the government needs to consider electronic registration and voucher systems as used in countries such as Zambia and Nigeria, to improve management of these subsidy programs (Jayne et al., 2018; World Bank, 2020). Hence, such systems can reduce duplication, improve monitoring, and strengthen record-keeping. They can also ensure fair representation for vulnerable groups such as women, young people, elderly farmers, and poor households.

Moreover, AGRITEX should develop a comprehensive farmer database covering land size, crop type, and household socio-economic status. A digital database that identifies farmers needing assistance during drought or input shortages works better than outdated handwritten registers. This would simplify input allocation and strengthen beneficiary targeting mechanisms.

Enhance Farmer Access to Information and Extension Services

The study findings show that access to information significantly influences farmers' participation in subsidy programmes. Farmers who received timely information about registration procedures and input collection dates were more likely to benefit from the programmes.

The Ministry of Agriculture should strengthen extension services through AGRITEX officers and improve community links. The information on application dates, input collection, and input application procedures must be disseminated early enough through meetings, local radio stations, short messaging service, and WhatsApp platforms, where applicable. For example, mobile notifications can inform farmers on input collection dates and locations. This would reduce confusion and cut travel costs for farmers living in faraway places. Furthermore, the AGRITEX officers must organise training programs for the farmers on the principles of conservation agriculture, climate-smart agriculture, and optimal input application practices.

Promote Agro-Ecological Matching of Inputs

The Ministry of Agriculture should ensure that distributed inputs match the agro-ecological conditions of each community. The study shows that farmers received inputs incompatible with local agro-ecological conditions, resulting in low productivity. For example, drought-resistant crops such as sorghum and millet, rather than only maize seed, suit areas with low rainfall. Farmers can be allowed to select seeds which are compatible with the local rainfall and soil composition.

Invest in Rural Infrastructure and Transport Support

The government, local authorities, and development partners should invest in rural infrastructure, especially roads and transport systems. Although distance may not be the main barrier, poor road conditions and high transport costs hinder access to inputs. The construction of road infrastructure will facilitate easy and affordable transportation of inputs to the rural areas. Construction and maintenance of road infrastructure will enable affordable transportation of inputs to rural areas. During mass distribution, local authorities should partner with transport operators to provide affordable transport for

farmers. Community transport days can allow farmers in the same ward to collect inputs at lower costs.

Strengthen Monitoring, Quality Control, and Accountability

The Ministry of Agriculture should implement accountability measures to improve transparency in subsidy schemes. The findings identified weaknesses in input quality, inconsistent distribution, and weak monitoring mechanisms. To overcome these weaknesses, monitoring and tracking systems are needed at all stages of input distribution. New technologies such as bar coding, electronic registers, and other tracking platforms can support monitoring. District administrators and AGRITEX personnel should conduct regular checks to confirm farmers receive adequate quantities of quality inputs. Farmers need clear channels to report complaints about low-quality inputs. For example, a procedure should allow farmers who receive non-germinated seeds to report the issue and obtain replacements.

Recommendation on Overall Improvement

Improving input subsidy schemes in Bindura District requires more than just increasing the quantity of inputs provided. Efforts should focus on improving distribution efficiency, ensuring accessibility, and strengthening institutional support to address challenges farmers face. In summary, there is a need to improve the efficiency and equity of distribution processes. This will not only increase production among farmers, but also advance national goals for food security and poverty alleviation.

Contribution of the Study

The study contributes to the existing literature by examining the challenges and opportunities in agricultural input distribution systems in Zimbabwe. It highlights the gap between policy design and implementation, particularly in efficiency, equity, and governance. The study also provides practical recommendations that can inform policymakers, development practitioners, and agribusiness stakeholders. By focusing on real-world challenges faced by smallholder farmers, the research adds value to ongoing discussions on improving agricultural productivity and food security in developing countries. Theoretically, the study contributes to the expansion of the scope of

institutional and market failure theory, which has been extensively applied at the national or regional levels in Sub-Saharan Africa. It tests them jointly in a single district-level regression model with institutional, socio-economic, and geographical factors. Therefore, findings from Bindura District support the view that institutional quality influences subsidy programme outcomes more than demographic and geographical characteristics.

5.4 AREAS FOR FURTHER RESEARCH

This study addressed efficiency and equity aspects in input distribution mechanisms, but several topics need further investigation. The study focused on the distribution of subsidised inputs among smallholder farmers, specifically in one district in Zimbabwe.

Future research should examine how input subsidy programmes affect the overall livelihood of smallholder farmers. Although this study revealed that smallholder farmers benefit from access to subsidised seed and fertiliser, it did not assess whether such access brings any other positive changes to households' livelihoods. Future studies could explore whether consistent participation in schemes such as Pfumvudza/Intwasa promotes economic improvements to farmers' lives. More precisely, future studies could reveal whether participating farmers experience any positive outcomes, such as increasing their income level, creating additional savings to purchase items needed by their families, accumulating assets, or becoming more self-sufficient.

Secondly, comparative studies should be conducted between different districts and provinces of Zimbabwe. There is a high variability of agricultural conditions across different parts of the country. While subsidy programmes succeeded in Bindura, others face different obstacles in areas such as Chiredzi, Binga, or Mudzi, where droughts are more frequent. Comparative studies can identify regional differences in programme effectiveness and show policymakers which policies and strategies work best under specific environmental and social conditions.

Another area for future research is technology in agricultural input distribution. As this study revealed, delays in the distribution process, inefficient monitoring systems, and inconsistency of allocations are among the main challenges faced by subsidy programmes. Future research could investigate the application of digital technologies in

agricultural practices to overcome these difficulties. For example, research could examine how farmers in remote rural districts respond to SMS or app alerts on input collection dates, and whether online beneficiary registration improves transparency in the programme.

Furthermore, there is a need for research regarding how the vulnerable population perceives subsidy programmes. While it was observed that women, young people, and poor households encounter problems when accessing subsidised inputs, this study did not provide insight into the factors that make them vulnerable. Further research should investigate why widow farmers, older farmers, and young farmer-headed households often receive little from subsidies.

It is also essential to study the connection between subsidy programmes and climate change adaptation. With frequent droughts, low rainfall, and increasing climate shocks in Zimbabwe, studies could test whether input subsidy programmes support climate-smart agriculture. In general, more research into these topics will lead to a greater appreciation of how agricultural input subsidy programmes can be enhanced to help small-scale farmers. Hence, such studies could help compare the productivity and resilience of farmers who cultivate sorghum and millet with those who grow maize. This evidence can help policymakers design programmes that are efficient, transparent, sustainable, and relevant to rural farmers in Zimbabwe.

More research on these topics can improve understanding of how agricultural input subsidy programmes support small-scale farmers. This evidence can also help policymakers design programmes that are efficient, transparent, sustainable, and relevant to the challenges facing rural farmers in Zimbabwe.

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APPENDICES

APPENDIX 1: HOUSEHOLD QUESTIONNAIRE: SEED SUBSIDY IMPACT STUDY

Analysing the impact of Government input subsidies on the efficiency and equity of seed distribution for smallholder farmers in Bindura District, Zimbabwe.

My name is Ashley Chiimbira (Student ID: B221513B), a student at Bindura University of Science Education. I am currently studying for a Bachelor of Science Honours Degree in Agricultural Economics and Management. In the course of my studies, I'm researching agricultural input subsidies, equity and the efficiency of seed distribution systems among smallholder farmers in Bindura. The responses will be treated with the highest confidentiality, and the data collected will be used for academic purposes only. Your identity will not be recorded or disclosed in any part of the research report. Your willingness to take part in this interview will be greatly appreciated, as your views and experiences are valuable in helping us better understand and improve agricultural support programs.

INSTRUCTIONS TO PARTICIPANTS

- *Tick the answer and fill in information where required*
- *Select only one answer per question unless instructed to "select all that apply".*
- *There are no right or wrong answers; we are only interested in your views and experiences*
- *If you do not understand a question, ask the enumerator for clarification*
- *Never put your name on any of the pages*

RESEARCH DETAILS (FOR ENUMERATOR USE ONLY)

Researcher name: _____

Date: _____

Enumerator Name: _____

Ward: _____

Village: _____

Interview Start time: _____

SECTION A: DEMOGRAPHIC AND FARM CHARACTERISTICS

D1. Age of household head (years)

1 = 18–24
2 = 25–34
3 = 35–44
4 = 45–54
5 = 55+

D2. Gender of household head 1=Male 2=Female

D3. Marital status

1=Single 2=Married 3= Widowed 4= Divorced/Separated 5= Other (specify) _____

D4. Household size (number living and eating together) _____ persons

D5. Economically active household members in farming_____ persons

D6. Highest Education Level attained 1=Primary 2=Secondary 3=Vocational 4=University/college 5=Other _____ 6=None

D7. Total size of arable land _____ hectares

D8. Main crops grown last season

1= Maize 2= Groundnuts 3=Soyabeans 4= Cotton 5= Small grains 6= Other _____

D9. What is your primary source of household income?

1=Crop sales 2= Livestock 3=Wage labor 4= non-farm business 5=Remittances 6= Other _____

D10. Average monthly household income 1=< $100 2= $101–200 3= $201–300 4=> $300

D11. Years of farming experience _____ years

D12. Approximate distance from the household to the seed collection/input distribution point _____ km

D13. Approximate distance to nearest seed market_____ km

D14. Average yield (last season) main staple crop _____ kg / _____ tonnes

D15. Did you sell any of your produce in the last season? 1= Yes 0=No

D16. Main market used (if yes)

1= GMB 2= Local traders 3= Contract buyers 4= Other _____

D17. Do you have regular Access to extension services? 1=Yes 0=No

D18. Frequency of extension support 1= Monthly 2= Once per season 3=Rarely

SECTION B: EFFICIENCY OF DISTRIBUTION

E1. After the start of the rainy season, how many weeks later did you receive subsidised agricultural inputs (seed, fertiliser, and herbicides)?

1=0–2weeks Early October 2= 3–4 weeks Late October -early November 3= 5–8 weeks Late November -early December 4=9–12weeks Mid -late December 5=More than 12 weeks After December 6= Did not receive subsidized inputs

E2. How did this timing affect your planting?

1= No effect 2= Delayed 3= Reduced area 4= Switched variety 5= Other _____

E3. Number of visits to collect inputs _____ visits

E4. Did you incur any additional transportation/logistical costs (e.g., hiring a truck, bus fare) to collect the subsidised seed? 1=Yes 0= No

E5. Estimated cost (if yes)$_____

E6. Rate your satisfaction with the efficiency of the delivery process (timing, queue management, ease of collection)

1 = Very dissatisfied 2 = Dissatisfied 3 = Neutral 4 = Satisfied 5 = Very satisfied

E7 Received requested crop/variety? ☐ Yes ☐ No

E8. Were the quantities and quality of inputs received satisfactory based on performance?
Seed germination: 1=Yes 0=No 2=Not received
Fertiliser effectiveness: 1=Yes 0=No 2=Not received
Herbicides effectiveness: 1=Yes 0=No 2=Not received

E9. What was the approximate seed germination rate?

1=<50% 2=50–70% 3= 71–90% 4= >90%

SECTION C: EQUITY OF ACCESS

A1. Were you eligible to receive subsidised seed inputs in the last season? 1= Yes 0= No

A2. Have you ever been excluded from receiving subsidised inputs despite being eligible?

1= Yes 0= No

A3. If yes, what was the main reason for exclusion?

1= Inputs ran out 2= Limited selection 3= Documentation issues 4= Lack of information about distribution dates 5= Late registration 6=Other _____

A4. Did you successfully receive the full allocated quantity? 1=Yes 0= No

A5. Quantity of seed received _____ kg

A6. Basal fertiliser received _____ kg

A7. Top dressing fertiliser received _____ kg

A8 Other inputs received 1= None 2=Herbicides 3= Pesticides 4= Lime 5=Other _____

A9. Please rate the fairness of the selection process for the seed subsidy in your community (1 -5)

1 = Very unfair
2 = Unfair
3 = Neutral
4 = Fair
5 = Very fair

A10. Please rate how easy or difficult it was for you to access subsidised seed inputs.

1 =Extremely difficult 2=Difficult 3=Neutral 4=Easy 5=Very Easy

A11. Compared to other farmers in your community, do you feel you had better, worse, or equal access to the subsidised inputs? 1=Better Access 2=Worse Access 3= Equal Access

Perception Statements (Likert Scale 1–5)

Please indicate your level of agreement (1 = Strongly disagree, 5 = Strongly agree)

Statement	**1**	**2**	**3**	**4**	**5**
A12.Selection was fair and transparent	☐	☐	☐	☐	☐

A13.Gender did not affect access	☐	☐	☐	☐	☐
A14.No preferential treatment for wealthy farmers	☐	☐	☐	☐	☐
A15.Programme reached vulnerable farmers	☐	☐	☐	☐	☐
A16. No bribery required	☐	☐	☐	☐	☐
A17.Information was clear and timely	☐	☐	☐	☐	☐

A18. Apart from government input subsidy programs (Pfumvudza Intwasa program), have you received any agricultural input support from other sources in the last farming season?

1=Yes 0= No

A19. If YES, which type(s) of organisations provided the subsidised inputs? 1=Other Government programs 2=NGOs 3=Private sector companies 4= Farmer groups/cooperatives

A20. Please specify the name(s) of the program (s) or organization(s) (if known): _____

SECTION D: CHALLENGES AND RECOMMENDATIONS

C1. Please rate the severity of the following challenges to accessing subsidised inputs.

(1 = Not a challenge, 5 = Very severe)

Challenge	1	2	3	4	5

Long distance to collection point	☐	☐	☐	☐	☐
High transport costs	☐	☐	☐	☐	☐
Late delivery of seed	☐	☐	☐	☐	☐
Incorrect quantities	☐	☐	☐	☐	☐
Poor quality inputs	☐	☐	☐	☐	☐

C2. Which farmers are most likely to be disadvantaged?

1=Women 2= Elderly 3= Poor 4= Youth 5=Disabled 6= Remote 7= Other _____

C3. Measures to improve access ***(Tick all applicable)***
1=Early distribution before the planting season
2= Increase quantities of seed and fertiliser
3= More decentralised distribution points
4= Improve farmer registration and verification systems
5=Better communication on distribution dates and procedures
6= Provision of inputs suitable for local
7= Timely availability of complementary inputs (e.g. top-dressing fertilisers)
8= Improved coordination between extension officers and farmers

C4. Would you support changes to the current input distribution system to improve fairness and efficiency? Yes=1 0=No

C5. What recommendations do you have for the government/stakeholders to improve the subsidised seed program and input program in Bindura? (Open-ended)

_____

`1**THANK YOU FOR YOUR PARTICIPATION**