

BINDURA UNIVERSITY OF SCIENCE EDUCATION

TOWARDS A WORKING MODEL ON AGRO-INPUT SUPPORT AND FARMER PRODUCTIVITY. A CASE OF SELECTED INSTITUTIONAL FARMERS

BY

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B226095B

A DISSERTATION SUBMITTED TO THE BINDURA UNIVERSITY OF SCIENCE EDUCATION IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR A MASTER OF BUSINESS LEADERSHIP DEGREE, GRADUATE SCHOOL OF BUSINESS

BINDURA, ZIMBABWE

JUNE 2024

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DEGREE : MASTERS OF BUSINESS LEADERSHIP

YEAR DEGREE AWARDED : 2024

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DECLARATION

I, **Levi Livai Mabonga** do hereby declare that this dissertation is a result of my own investigation and research, except to the extent indicated in the Acknowledgements, Bibliography and comments included in the body of the report, and that it has not been submitted in part or in full for any other degree to any other university.



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STUDENT SIGNATURE DATE

DEDICATION

I dedicate this dissertation to my family who stood by me through everything.

ACKNOWLEDGEMENTS

Firstly, I would like to thank the Almighty for strengthening me throughout the research.

Secondly, I extend my gratitude to my wonderful family for their unwavering support and love.

To my fellow MBL classmates at Bindura University of Science Education, thank you for your encouragement and contributions that lightened the academic burden

Lastly, I would like to appreciate and thank my supervisor who made this journey bearable through his professional guidance and support.

ABSTRACT

This study sought to propose a working model on agro-input support and farmer productivity with specific reference to selected institutional farmers in Zimbabwe. The study came against a backdrop of growing concerns about the productivity gaps among institutional farmer organisations such as the University of Zimbabwe Agro Industrial Park, Air force of Zimbabwe and the Bindura University of Science Agriculture farm which have been supported through the CBZ Agro Yields Scheme. The study therefore aimed to examine the current state of agricultural input support offered to institutional farming organisations; determine factors influencing farmer decisions to participate in input support schemes in Zimbabwe; determine the effect of current input support schemes on farmer productivity among institutional farming organisations and to propose a working input support model for enhanced farmer productivity among institutional farmer organisations. Thus study was premised upon a mixed methods approach which sought to collect both qualitative and quantitative information on the subject of inquiry. This implies that the research philosophy was pragmatism and the design was descriptive. The population consisted of employees within institutional farming organisations in Zimbabwe that benefitted from the CBZ Agro Yields concept. It also constituted managers within the CBZ with inside knowledge of Agro yields scheme. The researcher specifically targeted senor level employees and managers within the scheme who were well versed with how the scheme affected productivity levels. Thus, the data collection criteria involved the use of questionnaires, interviews and document analysis which ensured the direct involvement of local people in problem identification. The collected information was in turn be analysed through both thematic analysis and statistical analysis in line with the mixed methods approach selected for the current study. The results indicated that institutional farmer organisations under the CBZ Agro Yields Scheme are subject to a narrow and often unsatisfactory input support regime based solely on input credit or contract farming. This means that they do not get free or subsidised inputs and are not part of integrated input support or input supply chain arrangements. In the same vein, the input credit facility itself is also subject to a range of challenges encompassing the fact that they are unaffordable through exposing farmers to additional administrative costs. The results indicated that farmer decisions to participate in input support schemes were dependent upon a range of factors which encompassed unsustainable nature of input costs on the open market wherein farmers struggle to access inputs on their own resources due to national economic challenges. The results from both questionnaires and interviews also demonstrated that current agriculture input support schemes under the CBZ arrangement had a negative effect upon farmer productivity in the sense that they failed to spur up venture profit. This means that farmers often experienced losses despite having access to agriculture credit. Overally, the results of regression analysis also indicated that a unit change in input support correlated with a 58% decline in farmer productivity. The ultimate aim of the study was to propose an alternative Zimbabwe Agriculture Input Support (ZASM) model to enhance the effect of agricultural input support on farmer productivity. Thus, to arrive at the model the researcher first diagnosed the current roots of insufficient farmer productivity under the CBZ scheme. This led to the realization that farmer productivity depended not only upon traditional inputs such as seeds and agrochemicals which the current input support scheme targeted. Rather, it dependent on additional support mechanisms such as credit, training and mechanization which were overlooked in the current scheme. In view of the above, the study proposed that the government should reconsider its input support schemes to broaden it so that it caters for other uncovered aspects.

Keywords: Bindura University of Science Agriculture, Commercial Bank of Zimbabwe,agricultural input support, Senor level employees

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LIST OF ABBREVIATIONS AND ACRONYMS

ZAISM- Zimbabwe Agriculture Input Support Model

CBZ- Commercial Bank of Zimbabwe

AFZ- Air Force of Zimbabwe

RBZ- Reserve Bank of Zimbabwe.

CHAPTER ONE

INTRODUCTION

1.0 Introduction

This study aimed to develop a working model on agro-input support schemes and farmer productivity with specific reference to institutional farmer organisations under the auspices of the Commercial Bank of Zimbabwe (CBZ) Agro Yields Scheme. The study came against a backdrop of growing concerns about the productivity gaps among institutional farmer organisations such as the University of Zimbabwe Agro Industrial Park, Air force of Zimbabwe and the Bindura University of Science Agriculture farm which have been supported through the CBZ Agro Yields Scheme. This chapter considered background literature through first delving into existing secondary and empirical literature on the subject leading to the identification of the problem to be investigated. Thus, background literature builds the context in which the study was conducted and the problem identified. This in turn dovetailed into the research objectives and resultant research questions which the current study sought to answer. It also touched upon other aspects that encompassed the significance of the study, delimitations, limitations, definition of key terms, organisation of the study and list of acronyms and ends with a chapter summary.

1.1 Background to the study

Agriculture represents an economic mainstay that contributes to national socio-economic development relative to nutrition, food and income security (Akuriba and Tangonyire, 2020). Hence, agriculture demonstrates a major policy priority for most progressive governments on a global scale (Moahid and Maharjan, 2020). However, despite its contribution to national economic growth and development, the agricultural sector has demonstrated productivity challenges which make it an unattractive investment destination for financiers (Wongnaa, Abudu, Abdul-Rahman and Prah, 2023). Mapfumo and Mushunje (2022) opine that most financial institutions have annulled their initial investment plans and financial allocations to the agricultural sector given the inherently risky character of the sector. The continuity of these challenges further predispose

countries to endemic food insecurity situations leading to failed achievement of sustainable development (Wongnaa *et al*., 2023). Taslim, Karim and Rahman (2022) contend that agricultural productivity in low income countries has fallen radically compared to upper middle income countries. Odunze and Uwizeyimana (2019) contends that cereal yields within Africa are less than those produced within Asia. There is broad scholarly consensus especially on sub-Saharan Africa that between 2002 and 2009 there was an average nitrogen use of 5.9kg per hectare within the region compared to 10.0kg in Asia and 36.6kg in South America (Shonhe and Scoones, 2022).

The low level of agricultural productivity has been attributed to a range of factors encompassing liquidity and labour constraints, environmental degradation, unfavourable environmental conditions in which farming occurs and lack of technical innovation (Makuwerere, 2021). The constraints also encompass government and market failures where at times government policies deter investors leading to limited agricultural investment while on the other hand the market may fail to deliver credit and input services (World Bank, 2020). In assessing the drivers of lower rates of fertilizer use in sub Saharan Africa, Khan, Siddique and Sarwar (2021) allude to credit constraints, escalating input costs and limited technical knowledge among farmers.

In view of the extensive farmer productivity challenges, the provision of farmer input support has been touted a failsafe solution that addresses farmer productivity challenges globally. Thus, agricultural interventions aimed at enhancing farmer productivity, profitability and income are central to national economic growth and development (Hemming *et al*., 2018). Kanyamuka, Jumbe and Gilbert (2022) opine that the adequate use of agricultural inputs such as certified seeds and conventional fertilisers is one way of enhancing agricultural productivity. This is because these inputs are often unaffordable for most farmers in developing countries hence, agriculture input support facilitate farmer access to essential inputs on time, at an affordable cost and in the highest quality possible. Thus, agriculture input support constitutes one mechanisms to incentivize the adoption of certified seeds and fertilisers thereby increasing agricultural productivity and profitability, increasing food and nutritional security, reducing poverty and stimulating economic growth (Malimi, 2023).

Given the centrality of the agricultural sector to national economic growth and development, most governments have focused upon supporting farmers through inputs and this is mainly the case in Africa given its extensive dependence upon an agricultural economic base (Osome, 2021). The United Nations Food and Agriculture Organisation (FAO, 2023) reports that 12.5% of the global population are undernourished thereby indicating the urgent need to improve food security through agriculture input support. Therefore, increased agricultural productivity has been touted as an important avenue towards enhancing food, income and nutritional security while also stimulating economic growth in most agro-based economies (Mafirakureva, Mushunje and Zantsi, 2023). This indicates that increasing the use of agricultural inputs in the form of certified seeds and inorganic fertilisers could help improve the current levels of lower productivity in most emerging economies (Chandio et al, 2020).

Empirical evidence has demonstrated a positive nexus between agricultural input support schemes and farmer productivity on a global, regional and local scale. In a systematic literature review targeting sub Saharan Africa, Wagacha (2020) contends that agricultural input subsidies that cover machinery, seeds and fertilisers enhanced farmer income and land productivity. It noted that when inputs are supplied to farmers there is increased usage of such inputs in case where traditionally, farmers relied on recycled seeds and organic fertilisers that compromise their productivity. Haque and Goyal (2021) further agree that increasing agricultural input support through subsidies has a wide productivity effect on farmers and the wider economy thought there are challenges related to bias, inefficiency and corruption in the distribution of inputs. The same study further noted that while input subsidies are important in relation to extended input use, it is the design of such initiatives that determines their effectiveness.

In Ghana, Danso- Abbeam *et al*., (2018) contends that offering credit to rice farmers in the form of cash transfers or in-kind credit has enhanced the farm level output. Related studies (Outtara *et al*., 2020; Martey *et al*., 2019) also concur that the provision of cash credit to smallholder farmers enhances their access to production inputs which pushes up their farm yields and income. Similarly, Asravoh *et al.,* (2018) agrees that timely access to inputs enhances the productivity levels among smallholder rice farmers in Ghana. Sheahan and Baret (2016) concurs that farmer access to input support enhances their acquisition of productivity inputs such as seeds, chemicals

and fertilisers. This makes sense in the context of resource constraints that characterise most farming operations in sub Saharan Africa.

Ajah *et al*., (2018) adds that input support is a catalyst for enhanced farmer productivity as it breaks the vicious cycle of poverty that characterise most farming operations in Africa. Hence, input support through access to credit smoothens production through mitigation of production risk that is not uncommon within the contemporary volatile, uncertain, complex and ambiguous (VUCA) environment in Africa. In Nigeria, Olomola (2022) concurs that agriculture input subsidies enhances farmer productivity and food security. This correlates with Malimi (2023) who notes that agriculture input subsidies enhances the productivity of maize farmers in Tanzania. The study was premised upon panel data from the National Panel Survey in Tanzania and indicate a significant rise in both land productivity and farm labour productivity.

However, empirical evidence has also demonstrated that despite its positive impacts upon farmer productivity, input support schemes come with their attendant challenges that encompass limited amounts of financial support, long waiting times (Quartey *et al*., 2018). Melesse et al (2021) allude to lack of collateral, high interest rates and bureaucratic red tape as some of the challenges in accessing agricultural input support. Ayat *et al*., (2020) state that more often financiers offer limited financial support to farmers while farmers are often unaware of the types and availability of lines of credit. In Uganda, Mpiira *et al*., (2023) notes that farmers who seek agricultural input support are often subject to high interest rates which ranged around 36% annually. The same study also notes that banks often offer shorter payback periods for loans leading to higher loan default rates which in turn impair the future creditworthiness of potential borrowers (Mpiira *et al*., 2023). Moreover, loan processing was often associated with lengthy turnaround periods resulting in the disbursement of loans at inappropriate times and this compromised productivity within the time sensitive agricultural sector. It can be inferred that the existence of these challenges impair the capacity of input support schemes to spur production thereby providing conflicting signals regarding the exact nexus between agro-input support schemes and farmer productivity.

The above empirical views indicate scholarly dichotomy regarding the impact of agricultural input support schemes and farmer productivity in general and this justifies the need to put this debate

into perspective through the current study. In addition, empirical evidence above indicates that most existing studies have focused on agricultural input support schemes targeting smallholder farmers thereby overlooking the experiences of institutional farming organisations that the current study targeted within the context of Zimbabwe. Besides, there are very few studies (if any) that have proposed models aimed to address farmer productivity challenges within an input-support scheme context.

Despite its natural resource endowment and high agriculture potential, Zimbabwe is often exposed to increasing food and nutrition challenges (Ministry of Agriculture and Fisheries, 2022). In terms of the 2023 Global Hunger Index, Zimbabwe has a Hunger Index of 28 which is considered serious. The Hunger Index has been declining since 2000 from 36 to 31 in 2008 up to 28 in 2015 and currently, to 28 (Concern World Wide, 2023). This indicates significant progress in food security improvement through the current hunger index accounts for higher levels of malnutrition, child stunting, child mortality and child wasting (Concern World Wide, 2023). Decades of policy attention have moderated the pangs of food insecurity and the country has made significant strides in boosting agricultural production through a range of mechanisms encompassing the Command Agriculture scheme which was later transferred to the CBZ under the Agro Yields Scheme to enhance its administration. Other initiatives encompass the Presidential Input Scheme and the Pfumvudza/Intwasa scheme which targets smallholder rural producers.

The current study drew information from the CBZ Agro Yields Input Credit Scheme which was implemented in 2020 to facilitate farmer access to agricultural inputs (CBZ Q4 Report, 2022). This is a CBZ bank agriculture finance initiative in partnership with the Government of Zimbabwe aimed at boosting maize and soya bean production (CBZ Q3 Report, 2021). It was set up to address the deficiencies of the Command Agriculture program which was 100% wholly government funded and was subject to extensive loan default rates. It was believed that privatizing the loan scheme would improve loan recovery rates while also boosting the production of maize and soya beans. It operated as a public-private partnership through bulk material procurement that would in turn reduce the cost of production for farmers especially institutional farming organisations like the UZ Agro Industrial Park, BUSE and Airforce of Zimbabwe (AFZ).

The scheme offers farmers inputs and technical support and the costs are recovered post sales to buyers such as the Grain Marketing Board and private contractors. This implies that input support comes through bank loans which have however been associated with higher levels of bureaucracy, demand for collateral and wider legal ramifications. Several organisations that encompass the University of Zimbabwe, the Airforce of Zimbabwe and the Bindura University of Science Education (BUSE) have accessed input support from the CBZ under the Agro Yields Scheme but little is known regarding the productivity outcomes. The scheme operates on the basis of contract farming in which selected organisations are given access to agricultural inputs after which they supply their output to the country's grain reserves.

The Agro Yields scheme demonstrates sincerity of purpose at policy level but problems remain in terms of inadequate resources, limited executive capacity, imbalance in resource allocation and weak coordination among multiple agencies. This has often resulted in missed production targets at institutional farming organisations. The Herald (2022) reports that farmers in the Agro Yields scheme continue to decry higher input prices and have largely failed to break even due to higher interest rates charged on loans. For the 2021/22 farming season the interest rate was around 45% and it has been reviewed upwards to 120% and this curtails the productivity of commercial farming enterprise (Herald, 2022).

There are also issues related to the delayed disbursement of farming inputs as some farmers have reportedly failed to pay back their loans on time and others have been subject to default on their loan obligations (CBZ, 2022). The Business Times (2023) reports that a rising number of farmers have failed to repay their loans which has compelled the CBZ to reject loan applications that are backed by government guarantees. The Ministry of Finance and Economic Development (2022) indicates that only ZWL$5 billion was recovered from farmers out of a total ZWL$22 billion disbursed to maize farmers in the 2021/22 farming season though wheat farmers had a better repayment rates at 77%. It was noted that government guarantees were not effective given that the government was under economic sanctions and was subject to resource constraints hence loans were only given to those who could pay back.

The Herald (2022) reports that in 2022, morale among the Agro Yields participants had reached an all-time low as farmers were concerned that they were being overcharged for inputs such the Sakura herbicide which traded at $17 on the open market but was being sold for $31 under the Agro Yields Program. The farmers are also concerned over delays in input disbursements which affect their planning and yield potential yet the CBZ still expect the farmers to pay back the loan at the end of the farming season. Farmers are only eligible for contract farming after having paid 80% of the previous loan and this constrains their operations given the need to address other pressing obligations such as human capital.

In addition, the stop order facility that is operated under the Agro Yields Scheme allows the bank to garnish funds without leaving funds for farmers to meet critical bills like electricity (Herald, 2022). The scheme was also affected by that farmers borrowed money in local currency yet were expected to pay back the loans in foreign currency. The Herald (2020) further contend that the scheme has failed to gain traction due to bureaucratic red tape as the government controls how the loans should be disbursed. As such, the bank is unable to drive the initiative independently leading to high number of non-performing loans. In view of these practical realities concerning the CBZ Agro Yields Scheme, it is not clear how farmer productivity and agriculture input support are related and this justifies the current study.

Against the above background, there exists limited empirical evidence of models that allude to nexus between agricultural input support schemes and the productivity of institutional farmer organisations in Zimbabwe. The current study filled this gap through adding own voice to the growing chorus on the subject matter by proposing a farmer input support scheme model to enhance farmer productivity in Zimbabwe. It does so through determining the current state of agricultural support; examining the factors influencing farmer decisions to participate in input support schemes; establishing the benefits of input support on farmer productivity and identifying the challenges in accessing input support. It eventually established a farmer input support model for enhanced productivity. Thus, in view of limited empirical evidence and the perpetuity of farmer productivity challenges in the aftermath of the scheme, it was imperative to examine the nexus between agro input support schemes and farmer productivity in Zimbabwe for purposes of establishing a farmer input support model.

1.2 Statement of the problem

The intention under the CBZ Agro Yields Scheme was to boost farmer productivity particularly within the realm of maize and soya beans but farm productivity levels have remained depressed as farmers decry challenges related to late disbursement of inputs and higher interest rates among others. See Table 1.1 for farmer productivity outcomes under the CBZ Agro Yields Scheme.

Table 1.1: Farmer productivity outcomes under the CBZ Agro Yields Scheme (2022/23)

Farmer productivity Key Performance Indicator for soya beans	Cumulative performance variance from previous year (2022)
Crop yield per hectare	-15%
Enterprise profit	-3,4%
Gross margin	-4%
Number of hectares with improved practices	-2%

Source: Adapted from CBZ Institutional farmer Q4 report (2023)

The above shows that farmer productivity in terms of soya bean crop yields, enterprise profit, gross margin and number of hectares with improved practices dropped and this is despite the adoption of agro input support schemes by the three targeted organisations under study. The government of Zimbabwe (2022) also adds that maize production recorded a -43% decline in 2022 though soya bean improved by 15% in all contract farming operations at national level. The Herald (2022) also reports that challenges such as higher input prices have contributed to missed production targets in institutional farming organisations that are part of the Agro Yields scheme. There are also concerns over high input prices and the fact that the bank still expects farmers to repay the loans at the end of the farming season. In most instances, participants have failed to pay 80% of their previous loans to qualify for the next tranche of loans (Herald, 2022). The above points towards a

gap between the promise and the reality of agricultural input support and farmer productivity hence the need to establish a model towards enhanced farmer input support in Zimbabwe through a focus on organisations under the CBZ Agro Yields Scheme.

1.3 Research objectives

The major objective was to establish a working model on agricultural input support schemes and farmer productivity with specific reference to farmer organisations under the CBZ Agro Yields scheme. The sub objectives were as follows:

1.3.1 To examine the current state of agricultural input support offered to institutional farming organisations

1.3.2 To determine factors influencing farmer decisions to participate in input support schemes IN Zimbabwe

1.3.3 To determine the effect of current input support schemes on farmer productivity among institutional farming organisations

1.3.4 To propose a working input support model for enhanced farmer productivity among institutional farmer organisations

1.4 Research questions

1.4.1 What are the current state of agricultural input support offered to institutional farming organisations in Zimbabwe?

1.4.2 What factors influence farmer decisions to participate in input support schemes?

1.4.3 What is the effect of current input support schemes on farmer productivity among institutional farming organisations in Zimbabwe?

1.4.4 What input support model for enhanced farmer productivity among institutional farmer organisations in Zimbabwe can be proposed?

1.5 Research assumptions

The researcher assumed that:

- The study participants would provide useful data
- The selected respondents would be representative of the entire population of institutional farming organisations in Zimbabwe.
- Input support mattered for the productivity of commercial institutional farming organisations in Zimbabwe.

1.6 Justification of the study

The current study which sought to establish a working model on agriculture input support schemes and the productivity of institutional farmer organisation was justified in the sense that most existing studies (Danso- Abbeam *et al*., 2018; Outtara *et al*., 2020; Martey *et al*., 2019; Asravoh *et al.,* 2018; Ayat *et al*., 2020) have focused on other countries other than Zimbabwe leading to an evident knowledge gap. This means that there was limited empirical evidence of the situation in Zimbabwe and most of these studies have also not proposed a working model that could be used to effectively address the challenges faced by institutional farmer organisations in their quest to access finance. Thus, the current study filled the gap through the examination of the current manifestations of agricultural support; determination of the factors influencing farmer decisions to participate in input support schemes; establishing the benefits of input support on farmer productivity; identifying the challenges in accessing input support and eventually proposing an agro input support model targeted at institutional farmers in Zimbabwe.

1.7 Purpose of the study

The study purpose was to establish an agro input support working model for enhanced farmer productivity among institutional farmer organisations in Zimbabwe with specific reference to the CBZ Agro Yields scheme. This enabled the researcher to target a specific agro input support scheme and collect data from the population of institutional farming organisations that encompassed the University of Zimbabwe Agro Industrial Park, Air force of Zimbabwe and the

Bindura University of Science Agriculture farm. This in turn offered an opportunity to clearly understand the connection between the Agro Yields Scheme and farmer productivity in the selected organisations for purposes of proposing a working model that would enhance farmer access to agricultural inputs for eventual enhanced productivity.

1.8 Significance of the study

This study was significant to a range of stakeholders thereby indicating its theoretical and practical implication.

1.8.1 Academic significance

On a theoretical level, the current study which established the nexus between agro input support schemes and farmer productivity represented a novel inquiry as most existing studies (Outtara *et al*., 2020; Asante-Ado *et al*., 2017; Martey *et al*., 2019; Asravoh *et al*., 2018; Sheahan and Barret, 2016) have focused on other countries not Zimbabwe's institutional farming organisations that the current study targeted. As such, the current study added its own voice to the body of knowledge on the subject. In addition, it offered future researchers an entry point in conducting their own studies in the future while also enriching the BUSE library into which the final dissertation was deposited. It proposed a working model on agriculture financing that could offer a future entry point for other future scholars who may need to interrogate the model.

1.8.2 Significance to project funders

On a practical level, the study could enable the CBZ bank and the Government of Zimbabwe to establish the extent to which the practice has been helpful. In essence, the results of the study could justify whether the initial investment into the scheme has paid off relative to farm labour productivity and land productivity. This could in turn influence future management decisions regarding the practice. It simply means that the determination on whether the scheme paid off or not will provide an evidence base for future policy decisions regarding agricultural support. This could in turn foster more effective future interventions that will recognize agriculture input support

as a form of social protection thereby reforming the entire agricultural subsidy delivery system. The proposed model would also help agricultural financiers to determine the best course of action in addressing farmer productivity challenges because it emanates from stakeholder contentions regarding how the scheme can be optimised.

1.8.3 Significance to management of farming institutions

In measuring the productivity benefits of the input support schemes, the study substantiates such interventions to determine their overall productivity effect or lack thereof. Managers would in turn be able to determine the wisdom of accessing farmer input schemes. Thus, the results of the study demonstrated the effectiveness of managerial decisions regarding input support schemes in Zimbabwe. Further, the model offers institutional managers areas they might need to focus on to expedites the productivity impact of input support schemes.

1.8.4 Significance to Zimbabwean population

The investigation of challenges facing farmers in accessing input support could enable the government to determine the correct steps to take to address input supply glitches in the agricultural sector. This could in turn foster broader food and nutritional security in Zimbabwe leading to higher living standards for the generality of the Zimbabwean population. In addition, the government would be able to achieve its Sustainable Development Goals while farmers could also be able to achieve their perfomance goals from a financial, operational and competitive advantage perspective. Moreover, measuring the food and nutritional impact of such input support interventions among institutional farming organisations is important given their central role as vanguards of research and employment creation at national level. If such institutions are capacitated to enhance their agricultural productivity, they are in turn able to contribute to the national food and nutrition as well as income security goals.

1.9 Delimitations

The delimitations indicate the margins of the research given that it is practically impossible to cover all aspects in research. In that vein, the current study boundaries were defined in terms geographical, methodological and conceptual as explained in detail below.

1.9.1 Conceptual delimitation

The subject of agricultural input support schemes and its relationship with farmer productivity manifests itself in various forms. In the current study the focus was on an understanding of the subject matter within the context of three public farming institutions that are part of the CBZ Agro Yields scheme. The researcher wanted to establish the current manifestations of the support scheme; the factors influencing farming organisations to join the scheme; its benefits and the inherent challenges in accessing agricultural inputs. Eventually, it proposed an input support model for enhanced farmer productivity in Zimbabwe. Thus, the study does not only seek to find out what is happening in the sector but also suggest working mechanisms for enhanced farmer productivity in the future.

1.9.2 Methodological scope

The current study was premised upon a mixed methods approach which sought to collect both qualitative and quantitative information on the subject of inquiry. This implies that the research philosophy was pragmatism and the design was descriptive. The population consisted of employees within institutional farming organisations in Zimbabwe that encompassed the University of Zimbabwe Agro Industrial Park, Air force of Zimbabwe and the Bindura University of Science Agriculture farm which have benefitted from the CBZ Agro Yields concepts. It also constituted managers within the CBZ with inside knowledge of Agro yields scheme. The researcher specifically targeted senor level employees and managers within the scheme who were well versed with how the scheme affected productivity levels. Thus, the data collection criteria involved the use of questionnaires, interviews and document analysis which ensured the direct involvement of local people in problem identification. The collected information was in turn be analysed through both thematic analysis and statistical analysis in line with the mixed methods approach selected for the current study. Thus, in terms of presentation, the results were in the form

of narratives, descriptive and inferential statistics. The research was underpinned by key ethical considerations that encompass informed consent, confidentiality and anonymity.

1.10 Study limitations

The current study was affected by several factors such as limited access to potential respondents who were bound by non-disclosure requirements that prohibited them from sharing information with unauthorised 3rd parties. This explains the researcher decision to approach the subject organisations prior to information collection to obtain executive permission to conduct the study. To ease the process, the researcher requested the BUSE to provide an official introductory letter that authorized the research to be conducted. In addition, the researcher assured the respondents of the confidential nature of data collection and how the final information would be utilised and disposed of.

Secondly, the researcher failed to access local literature that alluded to the aspects of agricultural input support and farmer productivity. This means that there was little comparative local literature which compelled the researcher to focus on borrowed foreign literature. While this was helpful, the challenge was that at times, it painted a different context compared to the one that the researcher was targeting.

1.11 Dissertation outline

This dissertation is divided into five chapters where the first chapter offers a detailed background literature check which indicates the context in which the study occurred. This contributes to the problem identification and resultant research objectives and questions. Chapter 2 offers a detailed analysis of empirical literature thereby demonstrating what other scholars have written on the subject and the gaps that their studies left. Chapter 3 provides details on the research methodology thereby showing the techniques utilised in relation to information collection, analysis and resultant presentation. Chapter 4 presents the results, analyses and discusses the same through establishing the nature of linkages with existing empirical literature. This in turn enable the researcher to determine if any parallels can be drawn between such studies and the current inquiry. Chapter 5

sums up the study through presenting a summary of study findings, conclusions and recommendations based on each research objective as well as targeting various stakeholders.

1.12 Chapter summary

This chapter indicated introductory details regarding the subject of inquiry. It showed that the area of agriculture input support and farmer productivity has attracted scholarly interest though there ae no current and context-specific researches targeting the selected organisations. It noted the centrality of farmer productivity challenges regardless of the adoption of agro input support schemes. It also considered other aspects encompassing the significance of the study, delimitations, limitations and organisation of the study.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter offers a detailed and critical examination of empirical literature on the aspect of agriculture input support schemes in relation to employee productivity on a global, regional and local scale. Thus, the review simply enables the researcher to identify the gaps in knowledge that other researchers overlooked. In this vein, literature review justifies the need for the current study through indicating grey areas within the body of knowledge. Literature review therefore unearths unanswered research questions and indicates the potential gaps that the current study could occupy. In addition, a review of literature helps to streamline the current study through placing the study into the orbit of existing knowledge thereby indicating that the current study was not an attempt to reinvent the wheel but rather to add new knowledge to the body of literature. By focusing on the current state of knowledge in the area of study, the literature review process sets the literary and theoretical context within which the study occurred thereby indicating its place within the existing body of literature. In essence, the literature review enables the researcher to critically evaluate existing knowledge in terms of its thrust, methodologies, findings and margin of departure compared to the current study. The review process starts off with an overview of theories that informed the study before touching upon key concepts and then evaluating scholarly perspectives on the subject of inquiry.

2.2 Theoretical framework

A theoretical framework is a body of knowledge that provides a conceptual basis for the study of a phenomenon (Saunders et al, 2023). Thus, it outlines the key variables, concepts, assumptions and relationships that guide the study thereby enabling the researcher to understand, analyse and interpret their findings within the orbit of proven knowledge. This study was underpinned by the economic theory as explained in detail below.

2.2.1 Economic theory

The costs and benefits of agricultural input support schemes are best understood within the context of economic theory. Thus, according to conventional micro economic theory, the subsidies on private goods like agro inputs within competitive markets distorts resource allocation. In this vein, an input subsidy constitutes a negative tax on farmers thereby reducing the input prices that the farmers pay while at the same time raising the demand for the agricultural inputs. This distorts the market price in that a wedge is created between the price that the farmer pays and the price that the input producers get (Pindiriri *et al*., 2021). Thus, like a tax, agricultural input subsidies act as a deadweight loss that violates the Pareto efficiency (Mas-Collel *et al*., 1995). However, in cases where farmers lack the full knowledge regarding the impact of agricultural input support schemes, input subsidies generate net economic returns to given countries (Siamwala and Valdes, 1986). Baltzer and Hansen (2011) claim that the lower usage of agricultural inputs in most African countries is due to ignorance of their value. In this vein, agriculture subsidies are considered useful tools in increasing input usage while subsequently increasing farmer productivity through alleviating market failures (Pindiriri *et al*., 2021).

The economic theory is linked to the problem of ineffective agriculture input support in several ways. Ineffective input support can lead to market failure, where resources are not allocated efficiently, and farmers may not have access to necessary inputs, resulting in reduced productivity and economic inefficiency. Farmers may also lack information about the quality and effectiveness of inputs, leading to inefficient choices and reduced productivity. Input suppliers may prioritize profits over farmer needs, leading to ineffective support and farmers may take excessive risks or underinvest in inputs, knowing they will receive support regardless of outcomes. Input support may benefit larger farmers more than smaller ones, exacerbating income inequality and can create perverse incentives, encouraging farmers to focus on subsidized inputs rather than best practices and innovation. They could also lead to waste, corruption, and misallocation of resources, hindering economic growth and development. By understanding these economic concepts, policymakers can design more effective input support programs that address market failures, information asymmetry, and other issues, ultimately improving agricultural productivity and economic efficiency.

2.3 Conceptual framework

The conceptual framework shows the relationship between the input and output variables of the study. The input variables are the determinants of agricultural input support schemes and the output variable is farmer productivity as shown in Figure 2.1 below

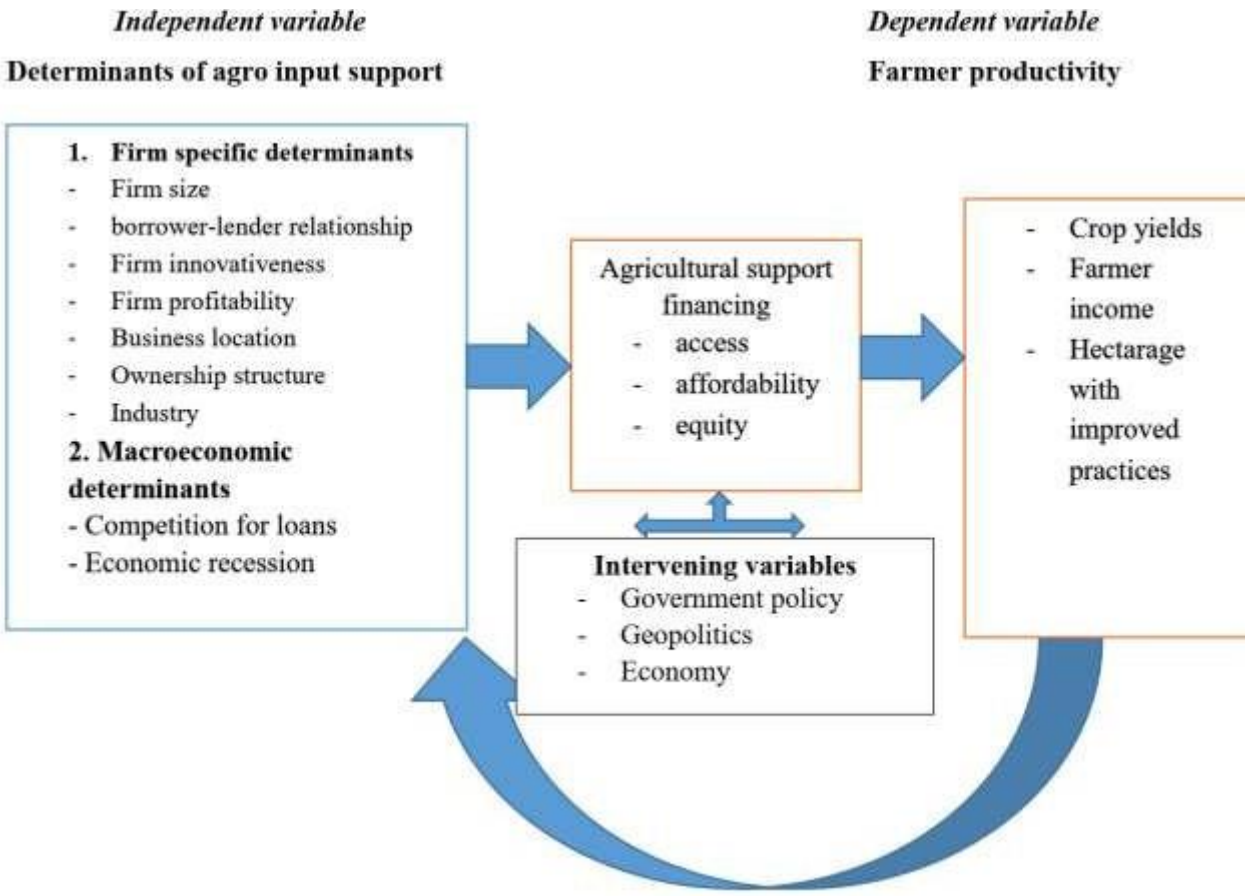


Figure 2.1: Conceptual model of agro input support and farmer productivity

Source: Researcher (2024

The conceptual framework indicates that the determinants to agro input support are both private and public and it is through interrogating such determinants that the study will unearth the exact nature of the relationship between such input schemes and farmer productivity. It also indicates that addressing the barriers to agricultural support in terms of access, affordability and equity will

foster broader based farmer productivity from a capacity utilisation, competitive advantage, financial performance and operational efficiency perspective. This conceptual model differs from existing models because it enables the researcher to conduct a holistic assessment of farmer productivity challenges through a consideration of both internal and external determinants of farmer input support. The conceptual framework resonates with the provisions of the economic theory which was explained in detail above.

2.3.1 Agriculture input support schemes

Agriculture input support schemes, also regarded to as input subsidies in other instances, represent official interventions into farmer input challenges through easing access to inputs like certified seeds, fertilisers and chemicals as well as machinery (Behera, 2019). The genesis of such input support schemes should be found within Asian economies, particularly within India's Green Revolution. Conventional input support schemes have always been targeted at increasing user appreciation of certified agricultural input support given that most farmers who lack external support often use moribund production techniques (Kotze, 2020). It has been argued that reducing access challenges increase farmer productivity and makes the adoption of the practice more attractive to farmers (Ogouvide et al,. 2022).

Alongside credit and agricultural extension services, agro input support schemes could enable farmers acquire their own inputs in the future and increase their appreciation of conventional agricultural practices (Anang and Dagunga, 2023). The practice has largely been introduced with a focus on remote rural areas but in view of the centrality of agriculture to national economic development, it has been extended towards institutional farming organisations (Silong and Gidanakis, 2019). Standard economic analysis in terms of cost benefit analyses have shown that farmers' supply curves shift to the right in the context of agricultural input support schemes.

In general input support schemes were associated with political pressure to increase support to struggling farmers as well as address challenges related to declining soil fertility, agricultural stagnation and rural poverty (Nkwi, Ahungwa and Nkwain, 2022). These schemes have also been considered a means of extending social protection. In this vein, agriculture input support schemes

resonated with broad based development aims related to replenishment of soil fertility, input market development, social protection of poor input recipients and addressing household food security for broad based national development (Ruml and Qaim, 2021).

2.3.2 The concept of farmer productivity

Productivity refers to the efficiency, efficacy and economics of any organisation hence an entity is considered productive when it is economic, efficient and effective (Abdul-Mukadas, 2022). This implies that success is about combining all the variables wherein efficiency is about achieving the highest level of results from the resources given or achieving optimum performance through the usage of even less resources while efficacy is about exceeding the predetermined results and this represents a firm's ability to meet and exceed user expectations (shareholders, associates, clients, suppliers, employees and customers) as noted by Acheampong, Assemoah and Bonsu, 2022). Thus, a firm achieves efficacy when it is able to improve its way of using the resources available to it to the satisfaction of the stakeholders (Addison et al, 2023).

Productivity has been defined as the extent to which organisations are able to fulfil their objectives effectively through the use of minimum resources efficiently (cost optimization) as argued by AGRA (2020). It is a set of financial and non-financial indicators such as sales growth, relative market share, customer retention and the bottom line (profitability) that offer information on the degree of achievement and objectives (Akuriba and Tangonyire, 2020). Thus, productivity is about value creation where the value created from the contributed assets is more than the expected value of those who contributed the assets (the stakeholders) as noted by Anang and Asante (2020).

Productivity can be viewed from the point of view of shareholders who look more towards the financial returns on investment or the other stakeholders who hold expectations about the organisation (Anang and Ayambila, 2020). Thus, it relates to the effectiveness and efficiency in fulfilling its objectives whether of a financial or non-financial nature. It is imperative to note that the ultimate objective of most organisations is to meet the expectations of their shareholders who provide the seed capital to drive processes but they also have to be cognisant of the desires of other interested parties such as customers or the community at large (Angrah, Kwampong and Egan,

2021). In relation to farming such productivity is measured in terms of operational efficiency, financial performance, capacity utilisation and competitive advantage (Asah et al, 2020).

2.4 Manifestations of contemporary agriculture input support schemes

Literature demonstrates that various agriculture input support mechanisms have been adopted on a global scale. Within the context of agriculture input support, various models have been used to provide farmers with requisite resources for improved productivity and income. These encompass input subsidies, input credit, direct cash transfers, input vouchers and mechanization support among others. These are explained in detail below.

2.4.1 Free input systems model

In Tanzania, the Bill and Melinda Gates Foundation (2014) introduced the input voucher system that targeted maize and rice farmers. The report indicates that in this case, farmers were given three vouchers for seed, top dressing fertiliser and basal fertiliser and the farmers were weaned off the program after three years. Pindiriri *et al*., (2021) add that in Zimbabwe, the Presidential inputs support schemes targets agricultural recovers in remote rural communities. The aim is to promote economic self-sufficiency and food production at domestic level through offering direct input handouts to selected farmers. The challenge however is that it can foster a dangerous farmer dependency syndrome that ultimately kills their productivity in the long run (Tanko et al, 2020).

2.4.2 Input credit finance (contract farming) model

This involves the practice whereby financial institutions or government agencies offer credit facilities to farmers for the purchase of agricultural inputs (Ayat, Akudugu and Seidu, 2020). In this scheme credits are offered at subsidised interest rates or are based on flexible repayment terms (Balana et al., 2023). Pindiriri *et al*., (2021) note that, state-led input support schemes entailed mobilizing agricultural resources in the form of affordable and sustainable funding that targeted large scale livestock and crop producers. This constituted part of the Command agriculture initiative in which farmers were paired with potential sources of financial support such as banks

while the government acted as a guarantor on all issued loans. Mazwi et al (2019) contend that the Targeted Command Agriculture Program was an agriculture financing model aimed at boosting agricultural production.

Li and Stuber (2022) agree that contract farming is a practice in which farmers enter into a production agreement with financiers and under the TCAP farmers were supposed to supply their produce to the Grain Marketing Board. The state would provide inputs such as fertilisers, seeds, chemicals and agricultural extension services in return for farmer submission of their produce to the GMB (Makuwerere, 2021). However, several scholars contends that input credit models are subject to a debt burden as farmers are exposed to debt in the event of crop failure or market fluctuations (World Bank, 2020; Thapa, 2019). It also promotes farmer dependency on credit, foster financial exclusion as certain farmers fail to get credit, increases farmer risk exposure, exposes farmers to poor quality inputs and is associated with sustainability concerns (Yaro et al., 2017).

2.4.3 Subsidy-based model

In this model, government or private organisations offer financial assistance or subsidies to farmers for the purchase of agricultural inputs like certified seeds, fertilisers and machinery (Diedong, 2019). Scholars such as Hemming et al (2023) opine that input support schemes may be in the form on input subsidies whereby the government pays part of the cost of securing inputs and the farmers pay the rest. It has been noted that more often, farmers struggle to access inputs due to higher costs (Moyo, 2011) hence subsidized inputs are more affordable to the farmers. This implies that agriculture input subsidies will ensure that certain inputs like seeds and fertilisers are made available to end users at below-market prices thereby increasing their adoption and ultimate usage (Anang and Dagunga, 2023). Example of such schemes encompass tax exemption or deliberate price reductions for inputs that are part paid by a third party such as government or its proxies. In some cases, farmers are issued with vouchers which they can redeem for inputs at selected input dealers (Kumar et al., 2019).

In Malawi, these input subsidies have covered only fertiliser and seeds (Wagacha and Odini, 2020) though in other instances they have been extended towards wider inputs such as fuel, chemicals, agricultural extension and machinery. The underlying assumption is that reducing the input price of given inputs through part payment will increase their usage leading to production growth and this is particularly so among farmers operating in markets that experience input market failure (Haque and Goyal, 2021). The input subsidies have been extensively adopted on a global scale especially in the case of Africa where there are "smart subsidies." These are aimed at maximising the multiple benefits to different stakeholders and address the distortionary effects on efficient commercial market operation (Vitoria et al., 2012). These smart subsidies aim to promote the efficient use of inputs such as fertilisers, leverage the private sector through redeemable vouchers to foster competition among input suppliers, give farmers market choice, ensure sustainability and promote pro-poor economic growth (Morris et al, 2007).

2.4.4 Extension services model

It has also been noted that at times, farmer productivity is curtailed by limited farmer knowledge hence, agriculture extension services are earmarked at providing farmers with knowledge, technical support and training. This covers areas like pest management, crop production, soil conservation and other related farming aspects (Donkoh et al, 2021). In their assessment of contract farming as a financing model, Ragassa et al (2021) notes that in Ghana, extension services are associated with several benefits encompassing knowledge dissemination which offers farmers access to up-to-date information, innovative technologies and best practices It also fosters capacity building through workshops, demonstrations and related educational activities for enhanced farmer capacities (Sekyi et al, 2020). It also offers tailored advice in which farmers get access to personalized advice and support to meet their specific needs and circumstances thereby addressing their unique circumstances. It is also associated with technology transfer from research institutions to farmer communities thereby enabling farmers adopted new pest management techniques, new varieties of crops, new mechanization techniques for enhanced farmer productivity and resilience (Shenge and Chancellor, 2019). Further, it is associated with market linkages through the provision of information regarding market demand, quality standards, marketing channels and price (Tanko et al., 2019). The same study adds that extension services are pivotal in promotion of sustainable

agro-based development, reduction in poverty levels and fostering food security through bridging the divide between agriculture research, technology and practice thereby empowering farmers for improved livelihood and economic growth.

2.4.5 Integrated input support model

This model is a combination of various forms of farmer support and it touches upon subsidies, input supply chain and credit facilities for the provision of comprehensive farmer support (Kim and Lee, 2020). Within the model, farmers may obtain subsidised input like seeds, chemicals and fertilisers alongside other forms of support encompassing technical training on their use as opined by Kiros and Meshesha (2022) who studied agricultural input support schemes in Ethiopia. The understanding is that what often curtails farmer productivity is not only limited access to agricultural inputs but the failure to optimally utilise the inputs for productive outcomes. Hence, integration offers a comprehensive approach to farmer productivity challenges as it attacks farmer constraints from multiple angles as observed by Mohammed- Nurudeen (2021) in a study in northern Ghana. The model contends that farmers often require a wide range of inputs, technical knowledge and financial resources for optimised production that fosters sustainable development as noted by Ngomi et al (2021) in the case of Cameroon. Thus, combining various forms of support addresses the multiple challenges that farmers face thereby enhancing their overall productivity as Ngwako et al (2022) noted in the case of Botswana smallholder goat farmers.

The model is associated with several benefits that encompass comprehensive assistance in the form of subsidies, credit facilities, input supply and extension services thereby providing wide ranging support in a manner that meets specific farmer needs (Nkebge et al, 2022). Thus, the model addresses multiple farmer constraints thereby improving their overall productivity and income. In their assessment of farmer challenges in northen Ghana, Nyaaba et al (2022) notes that integrated input support schemes increase access to agricultural inputs like fertilisers, seeds and pesticides which are central to the achievement of higher yields and better quality crops. Pauw (2022) notes that in the case of Ghana's rice farmers, integrated input support schemes offer opportunities for knowledge transfer and farmer capacity building. This is because the scheme is associate with farmer training, information and technical training in agricultural best practices for improved farm

management. In essence, the model caters for financial inclusion and sustainable agriculture while also creating a conducive atmosphere for farmer empowerment, productivity improvement and income generation.

2.4.6 Input supply chain model

In this model, private companies, the government or cooperatives manage the agricultural inputs supply chain to ensure their affordability, availability and quality (Iddrisu et al, 2021). It has been noted that at times, farmers struggle to access high quality inputs while others contend with prohibitive input costs all of which point towards sub optimal supply chains (Jumpah, Adams ans Ayeduvor, 2020). Thus, the model focuses on direct input sales, expediting distribution networks and partnerships with input suppliers (Kalaiselvi et al, 2021). In essence, the model is associated with farmer access to high quality inputs, timely input availability, convenience, technical support, cost effectiveness, market integration (Tekuni et al, 2020). The model has been credited for supporting farmer productivity, promotion of farm efficiency and enhancing farmer livelihoods through optimizing farmer access to inputs in a manner that reduces time and cost overruns (Thapa, 2019).

2.5 The factors influencing farmer decisions to participate in agriculture input support schemes

Studies on factors affecting farmer participation in input support schemes revealed several authors such as Khan et al (2020); Muroiwa et al (2019) and Taslim et al (2021) who used binary logistic regression analysis. Others such as Etwire et al (2013) used the binary probit model while Gaisina (2011) used the bivariate probit model to understand the factors. These factors are categorised as follows:

2.5.1 Unsustainable input costs

Research has indicated that several factors influence farmer decisions to participate in agriculture input support schemes. In Zimbabwe, Mafirakureva, Mushunje and Zansi (2023) note that

smallholder farmer decisions to participate in loan based farming is influenced by unsustainable input costs. The study noted in particular that most eligible farmers are subject to extensive resource shortages that limit their potential to purchase agriculture inputs. Thus, in most resource-constrained settings, agriculture input support schemes represent perhaps the only option for farmers as also opined by Lowery, Greif and Huntington, 2023; Debata, Wamulume and Wansakilwa, 2014; Chandio et al., 2020; Wagacha and Odini, 2020; Haque and Goyal, 2021).

2.5.2 Limited access to finance

OECD (2015) contends that in Zimbabwe, the post-independence era was characterised by severe input shortages, vulnerability to weather related risks, pests and diseases as well as lack of credit. Commercial banks simply refused to extend credit to most farmers due to lack of collateral and this compounded their attempt to secure agricultural inputs (Vitoria, Mudimu and Moyo, 2012). Even though the Zimbabwe government offered to farmers 99 year lease agreements these were not bankable and could not be used as collateral to secure bank loans (Moyo, 2011). This indicates the centrality of poverty in influencing farmer decisions to take part in input support schemes. Mazwi et al. (2019) contends that in view of the underdeveloped agriculture value chain most banks are unwilling to fund agriculture due to heightened risk profiles of most borrowers. This simply points towards generally low financing for most farmers especially smallholder operators since commercial banks are more willing to fund larger established corporates. Thus, in the context of a financing gap, most farmers participate in agriculture input support schemes since they offer relatively flexible conditions compared to orthodox sources of financial support.

2.5.3 Farm characteristics

Mafirakureva et al., (2023) establish that the decision to participate in input support schemes depends upon the characteristics of the farm which explains why A2 farmers with significant pieces of land and related equipment are more likely to engage in input support schemes to work larger pieces of land. The results of the quantitative analysis indicated that land size (hectares), type of farming (dryland/irrigation), farm equipment, livestock and crops grown determine the decision to participate in input support schemes. For instance, farmers involved in cash crop

farming were more likely to seek additional support compared to those focused on maize production. This indicates that the magnitude of production was influential in pushing farmers towards participating in input support schemes.

It is also evident from the results that large scale farmers were more likely to meet the conditions for input support compared to small scale farmers and this explains the prevalence of A1 farmers in input support schemes such as Command Agriculture (Mafirakureva et al., 2023). These results indicate that farmer type is also an important participation driver. This correlates with Moahid and Mohajan, 2020; Tira, Kinea and Kaso, 2017; Kumar et al., 2019) who noted that as the size of the farm land increases so too does the need for input support arise. Mafirakureva et al., (2023) established that an increase in the size of the farm increased the propensity of farmer participation in input support by 12%. In the same vein, it was noted that larger farmers were more likely to engage in input support given easy access to collateral and bank loans, market linkages, income diversification and capacity to engage in productive agriculture.

2.5.4 Size of the human capital

Mafirakureva et al. (2023) also noted that as the size of the labour force grew, so too does the propensity to participate in agriculture input support schemes. It was noted that a unit increase in family size contributed to a 21% likelihood of farmer participation in Command agriculture loans. These results correlate with Moahid and Mahajan, (2020) and Muroiwa et al., 2018) who noted that the size of the labour force was an important determinant of farmer participation in contract farming thereby indicating the security that the farmer derives from an extensive human capital.

2.5.5 Farmer knowledge

Mafirakureva et al., (2023) found that knowledgeable farmers were more likely to engage in input support schemes compared to ill-informed ones. This also means that farmers who were trained in the modalities of Command agriculture were more likely to go for larger loans compared to those with no training. An increase in command education which fostered wider information dissemination resulted in a 24% increase in request for loan support among A1 farmers

(Mafirakureva et al., 2023). Training and knowledge also motivated farmers to seek to higher loan amounts given the demonstrated benefits of participation as also opined by Anang and Dagunga (2023). Mafirakureva et al. (2023) notes that training capacitates farmers in relation to financial management, risk management, a view supported by Mkwi, Ahungwa and Kwain (2022) and Ruml and Qaim (2021).

2.5.6 Quest for profitability

Other researchers such as Carlisle (2016) note that the participation in such schemes is driven by the quest for profitability which follows the realization that supported farmers enhance the level of their productivity and ultimate profitability. Vitunskienė & Vinciūnienė (2014) contend profitability is one of the most sought after goals of sustainable agriculture. This means that participation enables farmers to meet their economic objectives which also dovetail with environmental and social benefits in line with sustainable development discourses (Haque and Goyal, 2021). Researchers agree that farmer participation in agro input support schemes is driven by the need to change the agricultural land use, preserve environmental integrity and enhance the level of farm profitability (Bostian et al., 2020; Henderson and Larkonski, 2019). These views correlate with Barghusen et al., (2021) who established the importance of both environmental and economic factors in stimulating Dutch farmer participation in input subsidy schemes. Teff-Sekker et al., (2022) also established that Israeli farmers' participation in input support schemes was influenced by social, environmental and economic considerations and profitability featured high in such ambitions.

These views correlate with Wittsock et al., (2022) who note that in Germany the decision to participate is premised on an economic point of view. In the USA, Carlisle (2016) noted the validity of agronomic and financial factors in pushing farmers to participate in input support schemes. In general, literature that examined the factors influencing farmer participation divided these factors into environmental, social and economic. Research has therefore demonstrated that the decision to participate in such schemes is driven by several factors and it was imperative to find out the exact factors that influenced the decision of the institutional farmer organisations under study in Zimbabwe.

2.6 The effect of agriculture input support on farmer productivity

Conventional arguments regarding agriculture input support schemes dominate empirical literature and the general argument is that the scheme enhances farmer productivity while fostering long term sustainable agriculture (Hemming et al., 2018; Kanter et al., 2015; Jayne and Rashid, 2013; Pindiriri et al., 2021). The positive effects of agriculture input support schemes out outlined below.

2.6.1 Dynamic effects on growth

Firstly, agriculture input support schemes have been associated with dynamic effects on growth. In Malawi, Chirwa and Dorward (2013) contend that input support schemes are associated with land and labour productivity and raises staple food prices leading to growth in real income among both consumers and producers. It implies that input support schemes are associated with several growth multipliers relative to wages and food prices for poor consumers and producers alike. In addition, input support schemes also stimulate increased input and output trade and fosters wider economic activity with positive spillover effects of market thickening. It simply means that input support schemes are associated with a growing volume of economic activity which reduce coordination and transaction costs for farmers. This also fosters institutional, communication and infrastructural development thereby indicating their dynamic positive impact on farm productivity.

Chirwa and Dorward (2013) however contend that these dynamic effects are only evident when input support schemes are sustained to such an extent that they induce structural and behavioural change and integrates the input support policy with other policies that promote this change. This concurs with the results of a systematic literature review by Hemming et al (2018) which note that in most low and middle income countries, agriculture input support schemes are associated with improved productivity, farm income and wider economic growth.

2.6.2 Soil fertility replenishment

The need to replenish alarming depletion of soil nutrients has been considered a major reason put forward in support of agricultural input schemes particularly in view of their support towards conventional fertilizer use. It has been noted that limited use of fertilisers account for soil fertility problems in most resource constrained settings leading to declining fallows, rapid deforestation, decline in nitrogen, phosphorus and potassium as well as land degradation across most arable soils. Thus, agro input support schemes promotes extended fertilizer use leading to higher soil preservation, soil fertiliser and extended on farm productivity.

In essence, the use of fertilisers which is commonly associated with agricultural subsidies has is associated with ecosystem-wide benefits such as reduced levels of soil erosion, flooding, siltation, deforestation and carbon footprint. It forestalls biodiversity loss leading to reduced pressure to cultivate marginal lands while reducing poverty and increasing farm and rural incomes. Agricultural input support schemes also foster better soil management thereby forestalling nitrate leaching which ultimately reduce overall crop productivity on farms. It is evident therefore that agriculture input support schemes raise productivity substantially through sustaining long term intensive agriculture without depletion of soil fertiliser.

2.6.3 Input profitability

Input support schemes have been considered one of the ways of enhancing the profitability of inputs use (Chirwa and Dorward, 2013). This is because input support schemes enhances the physical productivity of inputs as farmers adapt new technologies and manage them. It also reduces the costs associated with input purchases through increasing efficiencies in input production and delivery. Moreover, input support schemes increase output prices given their higher quality thereby indicating the willingness of buyers to pay a premium price for higher quality outputs emanating from extended use of certified seeds and conventional fertilisers. There are therefore inherent opportunities for raising both productivity and reducing the costs of accessing inputs.

2.6.4 Input affordability

Most farmers contend with input affordability challenges leading to outright neglection of conventional input use. Ordinarily, farmers can finance agriculture through owner's equity, non-farm income or borrowing but very few farmers are actually able to marshal sufficient resources through these avenues of fund raising. It simply means that very few farmers can easily intensify their production through own mechanisms hence the need for agricultural input support schemes in the form of credit, subsidies or other mechanisms. In view of the above empirical observations, it was imperative to determine the extent to which this applied to institutional farming organisations in Zimbabwe that were the subject of the current inquiry.

Despite the growing recognition of input support schemes relative to agricultural productivity, poverty alleviation and food security, literature (Chisango and Tichakunda, 2018; Banful, 2010) demonstrated growing concerns. Walls et al., (2018) assert that the effectiveness of input support schemes relative to farmer productivity is a major area of scholarly contention despite the policy belief that the support schemes are an effective antidote to farmer productivity challenges in general.

Chirwa and Dorward (2013) contend that in Malawi, input subsidies, a form of input support, were considered inefficient and fiscally and economically unviable policies responsible for the distortion of market incentives while at the same time blunting competition among farmers and undermining growth in African agriculture. While the input support schemes looked attractive from a farmer's perspective, the problems were compounded by diversion and inefficiency to the extent that the actual benefits were limited rather than widespread (Chirwa and Dorward, 2013). It has been noted that while countries like Zimbabwe and Malawi registered initial success in agriculture input support schemes, there was no long term traction due to varied economic and political reasons that led to failure in agricultural productivity. This not only indicated that failure of such initiatives but the weakness of the base upon which they were founded.

Chirwa and Dorward (2013) found that such failures were more common in state-led approaches though limited evidence was available for private market-led initiatives. It has been argued that

large scale input support schemes are costly and offer substantial opportunities for rent capture by a variety of stakeholders such as politicians, programme administrators, input suppliers, banks and affluent farmers. This points to the political economy difficulties associated with such input support schemes which may be inefficient but have continued to be doled out because they serve particular political interests (Lopez et al., 2017). This simply means that the intended beneficiaries may not necessarily benefit much from such schemes because the real beneficiaries are elsewhere. This means that the political objectives behind agriculture input support schemes may often focus around short term patronage opportunities rather than sustainable farmer productivity. It means that in the long run, input support schemes may end up being directed towards less poor farmers with more political voice, directing support schemes towards cash crops as opposed to food crops thereby limiting diversification and increasing input leakages.

These views were echoed by Pindiriri *et al.*, (2021) who note that agriculture input support schemes do not resonate with enhanced input usage, food security and poverty alleviation in Zimbabwe. In essence, the quantitative study which assessed the spatial distribution of free inputs note that the current design of the free inputs regime falls short relative to spatial equality, gender and regional sensitivity. The study noted that free inputs have potential to enhance farmer productivity when they are well designed and implemented since in most instances, farmers receive inputs late or get less than what they request. However, the results from regression analysis indicate that in reality free inputs have no impact on seed application, poverty and farmer income. It was noted in fact that the recipients of input support were subject to lower per capital consumption and were also food insecure compared to non-recipients.

Chisango and Tichakunda (2018) find fault with the Command Agriculture scheme implemented in 2017/18 farming season which fell victim to political interference as farmers were provided with fuel, fertiliser, seeds and chemicals. This finds resonance with Banful (2010) who notes that fertiliser subsidy programs applied in most developing countries are subject to inefficiencies resulting from political manipulation and higher administrative costs. Pindiriri *et al.*, (2021) contends that in Zimbabwe, the Presidential inputs scheme has remained by far the most popular free inputs exercise with far reaching ramifications upon the agricultural sector but it has remained holed in political circles. In essence, Command Agriculture was noted to have a significant

negative impact upon the national budget leading to its abandonment in preference of private sector led approaches and the Presidential inputs schemes was in turn targeted at vulnerable households only (Pindiriri *et al*., 2021). Gwatidzo and Muyengwa (2020) also came to the same conclusion regarding the inefficacy of Command Agriculture in spurring the production of maize and this led to food insecurity challenges at a time extensive resources were being forwarded towards the scheme. The study which utilised propensity score matching found no evidence of increased farmer productivity following participation in Command agriculture. In fact, there was no significant difference between those who participated and those who did not.

The International Monetary Fund (IMF, 2019) aver that input support schemes in Zimbabwe have been a commonplace phenomenon that characterised the agricultural sector at least since independence in 1980. The study however indicates that the practice is associated with high default rates on loans issued while free inputs (grants) issued to poor rural households have not fostered widespread productivity benefits. It was noted that in certain instances, farmers who obtain input support tended to sell them to other farmers at below market price thereby indicating that without proper supervision input support schemes may be counterproductive.

In addition, Lopez et al (2017) established that even in cases where agricultural input support schemes have been associated with productivity gains, there has been very high administrative costs involved. It was noted that input support schemes may assist farmers to increase their productivity but at times the cost involves is difficult to justify. It is for this reason that Anriquez et al (2016) suggested the transfer of resources from agricultural subsidies towards public goods as this can substantially improve the agricultural sector in the long run. In a study in Guatemala that utilised propensity score matching, Anriquez et al (2016) note that fertiliser subsidies reduced bean yields per hectare and had no impact upon maize yields. At the same time the program failed to stimulate farmer food security and income (Lopez et al, 2017).

2.7 Gaps in agriculture input support and farmer productivity literature

The area of agriculture input support schemes has been subject to growing scholarly interest as shown in the summary of reviewed studies in Table 2.1 below.

Table 2.1: Summary of reviewed studies

Author(s)	Research thrust	Methodology	Findings	Margin of departure with current study
Iddrisu et al (2020)	Implications of fertilizer subsidies on farmer productivity and income growth in Ghana	The study adopted a quantitative methodology based on questionnaire data targeting rural farmers	Fertilizer subsidies improved GDP growth and sector-based productivity in main agricultural sub sectors of maize (8.3%), sorghum (4.5%) and rice (3.8%). Subsidies had a value added effect on the food industry showing a backward linkage with agriculture.	The study focused on Ghana and not Zimbabwe and considered the economic wide impact of fertilizer subsidies through targeting productivity, employment, economic growth and welfare.
Malimi (2023)	The nexus of agricultural input subsidies, extension services and farm labour productivity in Tanzania	Used panel data from the National Panel Survey in Tanzania	Agricultural input support has a significant effect upon farm labour productivity and land productivity in maize plots.	The study focused on Tanzania not Zimbabwe.

Agymang, Ratinger and Bavorova (2022)	Impact of agricultural input subsidies on farmer productivity in Ghana	The study adopted a quantitative methodology targeting the contributions of 285 farmers who benefitted from the agricultural input support scheme	Input subsidies have a causal effect on food production	The study did not target Zimbabwean based institutional farming organisations that the current study focuses on.
Dlamini et al (2019)	The impact of agricultural input subsidies on productivity of small scale farmers in Eswathini.	Quantitative study that collected primary data from 224 smallholder farmers using structured questionnaires and interviews.	Input support schemes enhanced farmer productivity and recommended the government to extend the scheme to other farmers currently not catered for by the facility.	The study focused on another country not Zimbabwe and harvested the sentiments of small scale farmers not institutional ones.
Kinuthia (2020)	Agriculture input subsidies and farmer outcomes in Tanzania.	The study utilised panel data to analyse the relationship between the study variables.	The National agriculture input voucher enhanced the production potential of smallholder farmers	The study overlooked the experiences of institutional farming organisations in Zimbabwe.

Source: Researcher (2024)

The subject of agricultural input support and farmer productivity has attracted extensive academic interest (Danso- Abbeam *et al*., 2018; Outtara *et al*., 2020; Asante-Ado *et al*., 2017; Martey *et al*., 2019; Asravoh *et al*., 2018; Sheahan and Baret, 2016; Quartey *et al*., 2018; Ayegba and Ikani, 2013; Ayat *et al*., 20202). However, various scholars have considered varied aspects on the subject matter leading to bewildering notions on the same subject. It is important to note that the record of input support schemes which constitute a major part of state –led development approaches, indicates mixed results. This therefore calls for a detailed consideration of the context, program design and implementation of such schemes in the appraisal of the potential of input subsidies in fostering agricultural development through enhanced farmer productivity.

While empirical evidence point towards ubiquitous literature that alludes to the correlation of agriculture input support schemes and farmer productivity, most of these impact studies are limited in Zimbabwe and other developing economies (See Chirwa and Dorward, 2013; Lopez et al., 2017; Jayne and Rashid, 2013). Others such as Gwatidzo and Muyengwa (2020) studied the poverty implications of input support schemes that are targeted at poor households. Pindiriri *et al*., (2021) assessed the impact of free input support schemes on food security, income and poverty in Zimbabwe. This study therefore attempted to close this gap through an impact evaluation of productivity implications of input support schemes through a consideration of the state of affairs among institutional farmer organisations; factors influencing farmer participation in such schemes; the benefits and challenges of input support schemes relative to farmer productivity. In addition, there is scholarly dichotomy regarding the exact impact of agriculture input support schemes as some scholars (Chirwa and Doward, Pindiriri *et al*., 2021) established a positive correlation while others like Pindiriri *et al*., (2021) established their negative productivity impact. This indicates general lack of scholarly consensus on the exact impact of the scheme and this justified the current study that targeted institutional farmer organisations under the CBZ Agro Yields scheme.

2.8 Chapter summary

This chapter offered a detailed examination of empirical literature on the subject of agriculture input support schemes and farmer productivity in other contexts. The aim was to establish the existing body of knowledge to identify the gap that the current study could fill. The review

indicated that though the area of agriculture input support and farmer productivity has attracted scholarly interest studies targeting institutional commercial farming institutions in Zimbabwe are missing. Besides, existing studies have adopted various methodologies thereby indicating lack of scholarly consensus on the ideal methodologies to be used in such studies. The current study embraces a mixed methods approach to collect participant sentiments regarding the subject matter. The next chapter offers a detailed explanation of the methodologies used for data collection, interpretation and presentation.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

The methodology outlines the techniques for data collection, interpretation, analysis and presentation. This chapter specifically spells out the techniques that encompassed the research philosophy, research approach, population, sampling, data collection instruments, validity and reliability aspects as well as ethical considerations that informed the current study. The research methodology was largely premised upon Saunder's research onion (2009) which contends that effective research unfolds in the form of layers that encompass the following.

3.2 Research philosophy

Saunders, Lewis and Thornhill (2023) opine that the research philosophy outlines the researcher's perception regarding knowledge. In essence, knowledge is divided into both factual, observable and objective phenomenon and opinionated, subjective participant experiences. In this regard, knowledge is viewed from the perspective of both the natural sciences in which the researcher sought to collect numeric objective data and the social world in which the aim was to gather subjective participant experiences of the studied phenomenon. Thus, the research philosophy manifests itself in terms of both the epistemology and ontology.

In terms of epistemology, the current study ascertained that the reality regarding the relationship between agro input support schemes and farmer productivity was rooted in both numeric and non-numeric data. In turn, the ontological position was both subjective and objective and this justified the adoption of the pragmatism philosophy. Thus, pragmatism entailed that the researcher focused on what worked and disregarded what did not based on practical expediency. For instance, given the inherent strengths and weaknesses of both questionnaires and interviews for data collection, the researcher used both to cancel out the method effect. This means that questionnaires were not

capable of collecting subjective participant experiences while at the same time interviews failed to account for respondent objective experiences hence the need for this methodological triangulation.

The pragmatism research philosophy was adopted for the current study given the need to consider the aspect of agriculture input support and farmer productivity from multiple perspectives. The researcher did not adopt other philosophies such as interpretivism which is aligned to qualitative inquiries or positivism which is aligned to quantitative inquires as these were exclusive approaches. Thus, adoption of positivism would have entailed abandoning the subjective experiences of the study population thereby producing skewed data. On the other hand, focusing on interpretivism only would have entailed the abandonment of numeric quantitative data thereby reducing the potential for data generalisability. Thus, pragmatism offered opportunities for a compromise between quantitative and qualitative designs and this entailed the collection of subjective and objective data on the subject with recourse to both questionnaires and interviews.

3.3 Research approach

Maxwell (2019) contends that research approaches can be divided into three that are deductive, inductive or abductive approaches. Deductive approaches are amenable to the natural sciences through seeking to deduce information from collected facts on the subject of inquiry (Matunhu and Munemo, 2015). Inductive approaches are related to qualitative paradigms in which the aim is to read between the lines and makes sense of data through inferences (Bryman and Bell, 2017). In turn, abductive (mixed methods) approaches combine aspects of both induction and deduction thereby indicating the intention to utilise both numeric and non-numeric data in seeking to understand the relationship between the subject of agro input support schemes and farmer productivity in Zimbabwe. In line with McCombs (2019), the abductive approach enabled the researcher to move between the data and the theory. In essence, the abductive approach is adaptable and can suit multiple research situations while being aligned to the pragmatic philosophy as opined by Curran and Blackburn (2017).

3.4 Research strategy

Sassower (2017) define the strategy as a step by step plan that guides the researcher's thought processes leading to a systematic inquiry. It guides the overall direction of the research (Zuber, 2023). In general, several research designs encompass ethnography, action research, case studies, phenomenology and surveys. This study embraced the multiple case study design that focused on selected institutional farmer organisations in Zimbabwe that encompassed the University of Zimbabwe Agro Industrial Park, Air force of Zimbabwe and the Bindura University of Science Agriculture farm which have benefitted from the CBZ Agro Yields concepts. Thus, multiple cases studies entailed a detailed investigation of a single phenomenon within its real life experience (McMurdo, Mole & Paterson, 2020). The case studies therefore enabled the researcher to delve deeply into the experiences of various agricultural stakeholders to establish the exact linkages between agro input support schemes and farmer productivity. The focus on multiple cases allowed for a comparative assessment of the effects.

In this vein, the case study allowed for a detailed in-depth examination of the institutions that were part of the CBZ Agro Yields scheme. The study did not leverage upon ethnography because of the inability to go native in studying institutional farmer organisations. This also meant that the researcher could not adopt action research in which they would have been expected to participate in the activities of the farmer organisations. Further, phenomenology was not adopted because the researcher was not solely concerned with the subjective experiences of the farmer organisations in line with Bartunek, Li, and Easterby-Smith (2019). In addition, surveys were also not utilised as the researcher was not keen on utilising standard data collection tools but rather a mixture of data collection instruments that would suit the situation at hand. Since the experiences under investigation were both objective and subjective in terms of ontology, the researcher made the decision to embrace the case study which allowed for the utilisation of multiple data collection instruments.

3.5 Research design

This entails the plan of attack in seeking answers to a given research problem (Saunders et al, 2023). Poole and Poole (2020) considers it as a framework of the procedures used to conduct the study. It focuses on the techniques of data management, collection and analysis as opined by Bell (2021). Common research designs encompass the exploratory, explanatory, descriptive or quasi experimental designs.

The exploratory design is most commonly used when the researcher has limited knowledge on a given study aspect (Schlein, 2017). It offers a casual and disorganized approach to research and constitutes a part of preliminary studies. It is most commonly used when the researcher wants to learn more about a subject of inquiry and targets smaller samples. The researcher had access to diverse information on input support schemes and farmer productivity hence exploratory designs were not appropriate. A quasi-experimental design focuses on cause and effect relationships between the study variables as Rieger (2019) contends. This, experimental models seek to manipulate variables to see what would occur (Raimond, 2016). The experimental design is commonly associated with quantitative studies which means that it was not amenable with the current study which was premised on both qualitative and quantitative approaches. On the contrary, correlational study designs seek to establish the link between the study variables in terms of relationships and similarities (Sassower, 2017). Since the design is quantitative it was not in line with the current study.

Since this study entailed aspects of both qualitative and quantitative paradigms, the descriptive design was selected. In line with Saunders et al (2018) the descriptive design was used since the researcher wanted to characterise an instance. Given that it is founded on theory, such a descriptive design targets questions such as why, how, what, when and where (Bell, 2021). In line with Hanrahan et al (2021) descriptive designs seek to collect as much information about a study phenomenon as possible and this explains the methodological triangulation based on interviews, questionnaires and observations. This descriptive design enabled the researcher to focus on specific respondents who held useful information on the subject of inquiry and could be

approached for information through the range of data collection instruments indicated for a multidimensional comprehension of the subject of inquiry.

The descriptive design aimed to draw deeper and detailed conclusions regarding the subject of inquiry. The descriptive design solved the challenges associated with both the explanatory and exploratory designs which enhanced the validity and reliability of collected data due to methodological triangulation. It simply means that the researcher considered the varied realities of the subject of inquiry through integrating aspects of both positivism and interpretivism. The descriptive design also meant that data analysis was two pronged wherein the questionnaire data was analysed statistically through SPSS and interview and observation data analysed thematically through NVIVO.

3.6 Population

Matunhu and Munemo (2015) define the population as the entire universe from which the research participants can be drawn. This supports observations by Kersley et al (2017) who notes that the population is the entire set of study participants to whom the results can be attributed. The population consisted of employees within institutional farming organisations in Zimbabwe that encompassed the University of Zimbabwe Agro Industrial Park, Air force of Zimbabwe and the Bindura University of Science Agriculture farm which have benefitted from the CBZ Agro Yields concepts. It also constituted managers within the CBZ with inside knowledge of Agro yields scheme. Our understanding was that issues related to agriculture input support and farmer productivity should only be addressed from the perspective of participants with sufficient knowledge of the subject rather than target ordinary members of the public with limited technical understanding of the subject of inquiry. At the time of inquiry, the population across the selected institutional farmer organisations was 4 800 employees.

3.6.1 Target population

The target population encompassed both managerial and non-managerial employees as well as top executives within both institutional farmer organisations and CBZ Agro Yields. The researcher

specifically wanted to ensure a cross sectional understanding of the subject of agro input suppliers on the productivity of the farming organisations in terms of farm and labour productivity which were expressed in terms of capacity utilisation, competitive advantage, financial perfomance and operational efficiency. It was noted that these productivity indicators could only be obtained from employees within the institutional farmer organisations as alluded. To qualify for participation one had to be employed by the institutional farmer organisation while also being available to comment on aspects that the researcher was inquiring on. The researcher collected information from employees within the departments of agriculture only in these institutions.

3.7 Sampling

Sampling entailed the reduction of the study population into a manageable subset. Maxwell (2019) contends that sampling is the process through which a larger population is reduced to a smaller representation from which results of the entire population can be generalised. This means that sampling is driven by time and financial considerations as well as the need to concentrate on an effective sample size. Thus, the sampling section covers aspects related to the sampling frame, sampling and the sample size as depicted below.

3.7.1 Sampling frame

Noor (2017) defines the sampling frame as the list that specifies the population of interest. Hence, it constituted the components that the researcher used to select the sample to be approached for information. Due to resource constraints the researcher could not possibly collect data from the entire population of employees within the institutional farmer organisations. Thus, the sampling frame consisted of employees within all branches and departments and with various responsibilities within the selected organisations.

3.7.2 Sample

The sample was the subset of respondents that could provide reliable information on the subject of inquiry. As opined by Mintzberg and Waters (2018) ideal samples should be representative of

the entire population. In this case, the sample was collected from employees at all levels of the organisation that were the lower, middle and upper level. The justification was that agro input support systems affected all levels of employees relative to productivity hence the need to obtain a cross sectional understanding of their effect on the selected organisations.

3.7.3 Sampling strategies

Linus (2020) defines the sampling strategy as the technique through which the sample can be drawn. This means that the sample can be drawn by means of both probability and non-probability sampling.

3.7.3.1 Non probability sampling

In this study, the researcher adopted non-probability sampling in which the researcher deliberately focused on those respondents who were available to provide the needed information. This occurred because of limited time and resources on the part of the researcher and the fact that the organisations under study were composed of employees with extensive field related duties. Thus, the researcher had to inquire from those respondents who were physically present on the day and those who agreed to participate in the study. Thus, the researcher did not assume that all employees were willing to participate or held useful information. This entailed the usage of purposive sampling to purposively select employees to take part in the study. In other instances, the researcher was referred to particular respondents within the selected organisations and this snow ball sampling technique entailed that the researcher had easy access to knowledgeable respondents. Thus, non-probability sampling techniques were used for the selection of interview participants.

3.7.3.2 Probability sampling

However, given that all employees could participate in the study, the researcher also utilised probability sampling techniques which gave every respondent an equal participation chance. In this regard, the study participants for questionnaires were selected on the basis of stratified random sampling given that employees operated in different areas of responsibility. This entailed the need

to collect information from every employee strata to obtain a representative sample of the entire organisation. Kivunjal (2017) noted that stratified random sampling is ideal when the population is heterogeneous and consists of different strata of employees.

3.7.4 Sample size

The sample size was calculated using Krejcie and Morgan's (1970) sample size calculator as depicted below. It therefore implies that:

Formula: $S = X^2NP\ (1-P) \div d^2\ (N-1) + X^2P\ (1-P)$

Where:

S – Required Sample Size

X – Z value for 95% confidence level (1.96)

N – Population size (4800)

P – Population proportion (assumed to be .50 since this will provide the maximum sample size)

d- Degree of accuracy expressed as a proportion (0.05) this is the margin of error

The following holds:

$$\frac{1.96^2(4800 * 0.5)(1-0.5)}{0.05^2 * (4800-1) + 1.96^2 * (1-0.5)}$$

$$\frac{4609.92}{13.9183}$$

$$= 331.213$$

$$= 331 \text{ respondents}$$

Thus, data was collected from 331 employees in the selected organisations who were subjected to questionnaire inquiry. Their views were in turn corroborated by 11 managerial level respondents across all three selected organisations as shown in Table 3.1 below.

Table 3.1: Population

Participant	Size	Instrument
Business development manager (farmer organisations and CBZ)	4	Interview Guide
Farm manager (at farmer organisations)	3	Interview Guide
General manager (farmer organisations and CBZ)	4	Interview Guide
Non-managerial employees in farming organisations	331	Questionnaire
TOTAL	**340**	

Source: Researcher (2024)

3.8 Data collection procedures

Data collection procedures are the techniques for the gathering of information in the study (Maxwell, 2019). Thus, the data collection criteria involved the use of questionnaires, interviews and document analysis which ensured the direct involvement of local people in problem identification. This ensured that local perceptions, attitudes, values and shared knowledge were taken into account in trying to understand the subject of agriculture input support and farmer productivity in Zimbabwe. This interactive methodology was premised on the need to learn directly through face to face encounters with local people so as to incorporate technical know-how and learn about the social and physical conditions of the areas into which agriculture input support and farmer productivity were situated. The researcher intended to learn by listening and seeking from local people their concerns and priorities regarding agriculture input support and farmer productivity. Thus, we intended to use participatory assessment methods and activities in creating dialogue with local people for the collection of relevant information.

3.8.1 Questionnaire

Wright and Boswell (2018) define a questionnaire as a list of questions posed upon respondents to solicit for information on a subject of inquiry. The questionnaire (See Appendix 1) was used because the researcher wanted to rapidly collect information in a cost effective manner. Thus, the questionnaire consisted of two sections where the first part considered the demographic

information on the respondents thereby indicating the respondent profiles in terms of gender, age, area of responsibility and length of service among others. Section B consisted of non-demographic data in which the researcher requested the study participants to tick their preference from a list of suggested responses. This section contained Likert scale questions in which the responses were numbered and the questions were close ended. Only the last section of the questionnaire had an open ended question to collect subjective respondent experiences of the subject of inquiry. In collecting the data, the researcher did not influence the respondents on what to say but rather allowed the respondents to complete the instruments without interruption and this entailed the collection of objective information. This corresponds with observations by Yin (2018) who contends that self-administered questionnaires allow respondents the freedom to complete them with minimal supervision leading to elimination of subjective bias.

The questionnaire was used largely because of its ability for objectivity and the rapidity of information collection. Besides, the study sample was large hence the need to utilise an instrument with a wider scope of coverage that also collected numeric data that the researcher could use to deduce meanings. Hakim (2017) adds that questionnaire data is also easy to analyse statistically through techniques such as SPSS. It was also ideal as it did not disturb work processes in line with ethical conduct as the researcher did not aim to upset official work proceedings within the organisations under inquiry. Balnaves (2017) also contends that questionnaires provide consistent data thereby allowing for easier data interpretation. The questionnaire was also associated with additional privacy and confidentiality in its completion leading to valid data collection.

However, the questionnaire was difficult to design as the researcher had to read extensively into existing literature to guide the nature of the questions to ask and it was not easy to cover all aspects that the researcher wanted. This simply means that there was a limit to the number of aspects that the researcher could ask the respondents leading to only a limited understanding of the subject of inquiry. In addition, the questionnaire did not offer the researcher room to interpret the questions for the participants and this means that the responses provided largely depended on how the respondents interpreted the questions asked. Besides, questionnaires only focus on the collection of numeric data thereby overlooking subjective respondent experiences that could enable the researcher to develop a better understanding of the subject of agro input supplies and farmer

productivity. Leavy (2019) also contends that questionnaires are subject to natural attrition as some respondents can easily ignore the questions leading to lost data. It is for such reasons that the researcher adopted in-depth interviews to buttress the sentiments expressed in interviews.

3.8.2 In-depth interview

The interview has been considered a dialogic conversation between the researcher and the respondent (Bryman and Bell, 2017). The interview allowed the researcher to deeply pore into the subject of inquiry through search for clarification, reflection and descriptions of the phenomenon. The interviews involved a series of open ended questions that in turn allowed the respondent to provide detailed information on the subject of inquiry. The researcher targeted the collection of both verbal and non-verbal cues in the collection of interview data leading to a better and detailed understanding of the subject of inquiry. This was possible because most of the interviews were face to face while a few were online. In cases where interviews were face to face the researcher recorded and later transcribed the interviews to ensure that the collected information mirrored exactly what the respondents said and this fostered wider validity and reliability.

The in-depth interviews targeted the lived experiences of the respondents who were expected to hold more detailed and pertinent information on the subject of inquiry. Besides, they had more time on their hands to accommodate a cross cutting inquiry compared to general staff who were subjected to questionnaire inquiry. Each interview lasted for about 30 minutes and was conducted at a time and place of the respondents' choice. Prior to the interview, the researcher made advance bookings to ensure that their presence on the day of inquiry did not disrupt work processes. Prior to conducting the interviews, the interview guide was piloted upon 3 selected senior managers in the agricultural institutions in Zimbabwe.

The benefit of interviews is that they were interactive thereby enabling the researcher to deeply pore upon issues that arose during the discussion. This means that the interview guide was simply an instrument to guide the inquiry but when new information emerged the researcher followed it up allowing for a broader and detailed understanding of the subject matter. Given the presence of the researcher during the inquiry, it was possible to clarify on any issues or questions that the

respondents did not understand and this fostered a wider understanding of the subject under investigation.

However, interviews were prone to subjective bias in the sense that the researcher's presence could influence respondents to answer in a manner that they felt appealed to the researcher and this is regarded to as the Hawthorne effect. In addition, interviews were also time consuming as the researcher had to follow up on any information that arose. Since the interviews were targeted at largely executive professionals, the researcher had to conduct the interviews outside normal working hours such as lunch time and after hours. The interview was also affected by the fact that the collected information was based on the ability of the researcher to recall information.

3.8.3 Document analysis

Both interviews and questionnaires collected primary data and they were in turn supported by secondary data that the researcher came across during the inquiry. The researcher relied on secondary data to collect the views of other scholars on the subject matter. This entailed reading into existing empirical journal articles, grey literature sources, government and industry reports such CBZ audited financial results. Secondary data enabled the researcher to extensively understand the subject of inquiry in the sense that the data was freely available hence the researcher could easily engage in desk research. This also allowed for a varied understanding of the subject of inquiry given access to multiple sources of information on the subject under investigation. In addition, secondary data focused on both internal and external sources of information leading to a multipronged understanding of the subject of agro input support schemes and farmer productivity.

Document analysis implies that the researcher subjectively interpreted the context of visual, textual or audio material on the subject of investigation. This entailed the systematic coding and collection of thematic information on the subject. Secondary data allowed for an easy and detailed analysis of the subject of inquiry. The challenge however is that secondary data could be biased as it may not have been collected for the purposes of the current study. This entailed the need for extensive reading leading to significant time and cost investments. Besides, some information was outdated

while the other may have been incomplete and this explains the extensive reading that was in turn adopted.

3.9 Ethical considerations

Research that involves human beings is supposed to embrace ethical considerations thereby ensuring that the rights of respondents are not violated during the process. The key ethical considerations included informed consent in which the researcher obtained the consent of respondents to participate in the study thereby ensuring that none on the participants participate under duress. Thus, prior to the inquiry the researcher explained to the respondents the purpose of the inquiry and how the information would be used. In turn, the respondents were allowed to withdraw from the study if they felt that it no longer served their interests.

In addition, the researcher observed the principle of confidentiality and anonymity which ensured that the respondent identity was unknown during the inquiry. This means that during data collection, the researcher did not request the participants to identify themselves and this in turn protected the respondents in view of the information they offered. This also added to the objectivity of the study as the researcher analysed information without knowing who said what.

The researcher also ensured information integrity through keeping all collected information in lockable drawers. Thus, access to such information was only given to authorized individuals and this in turn added to the protection of the respondents. Further, the researcher ensured objectivity throughout the research process through collecting information using impersonal data collection tools like questionnaires. Besides, the analysis process was also based on SPSS especially in relation to questionnaires and this implies that the analysis process was value free.

3.10 Data analysis criteria

Given that the research collected both qualitative and quantitative information, the analytic process was therefore two pronged. This means that qualitative interview data was analysed through thematic analysis and quantitative questionnaire data was analysed through statistical analysis

based on SPSS. Collis and Hussey (2019) contends that thematic analysis entailed the identification and recording of recurring themes in the data leading to a detailed understanding of the subject of inquiry due to methodological triangulation. Statistical analysis was through SPSS in which the researcher entered the data into SPSS which produced descriptive and inferential statistics on the subject of inquiry. The collected data was presented by means of both descriptive statistics and verbatim quotes.

3.11 Validity and reliability

All research is supposed to answer to the dictates of credibility in terms of both validity and reliability as explained in detail below.

3.11.1 Validity

Valid instruments measure that which they purport to measure and several steps were taken in order to ensure that valid data was collected. Validity was achieved first through the usage of methodological triangulation in which multiple data collection techniques were used for purposes of cross verification. This means that the mixture of both qualitative and quantitative techniques enabled the researcher to verify the truth behind given assertions. In addition, the researcher ensured validity through focusing on the respondents that had a direct lived experience of the study phenomenon. This means that focusing on farming organisation staff which improved the quality of information collected as the respondents told of their personal experiences of the subject of inquiry. The researcher therefore overlooked general members of the public because they were not aware of the subject matter under investigation.

3.11.2 Reliability

In order to reduce errors, the researcher utilised standardized data collection approaches that encompassed the standardised questionnaire and semi- structured interview guides. This meant that the respondents were subjected to the same information thereby allowing the researcher to score the responses on the basis of similar criteria. In interviews the researcher also asked cross

reference questions which allowed them to check whether the responses were similar as per each respondent. The researcher was also able to cross check responses in interviews through revisiting a given aspect.

3.12 Chapter summary

This chapter offered a detailed evaluation of methodological aspects that encompassed the research philosophy, research approach, population, sampling, data collection instruments, validity and reliability aspects as well as ethical considerations that informed the current study. The next chapter presents the results on the subject of inquiry.

CHAPTER FOUR

DATA PRESENTATION, ANALYSIS, INTERPRETATION AND DISCUSSION

4.1 Introduction

This study aimed to develop a working model on agro-input support schemes and farmer productivity with specific reference to institutional farmer organisations under the auspices of the Commercial Bank of Zimbabwe (CBZ) Agro Yields Scheme. This chapter presents the results on the study and offers a commensurate analysis, interpretation and discussion of the results through linking them up with the body of knowledge on agricultural input support schemes and farmer productivity in general. The results were obtained from questionnaires and key informant interviews targeted at employees within the institutional farming organisations that were part of the (CBZ) Agro Yields Scheme.

4.2 Response rate

The response rate demonstrated the rate at which the research instruments were responded to. Sunders et al (2016) contends that the response rate is the proportion of successfully completed instruments and the results are presented in Table 4.1 below.

Table 4. 1: Response rate

Research instrument	Dispersed	Returned	Response
Questionnaire	340	298	88%
Interview Guide	11	11	100%
OVERALL	**351**	**309**	**88%**

Source: Primary data (2024)

The above results show that the researcher distributed 340 questionnaires and only 298 (88%) were returned while 12% were not as some respondents who asked for permission to complete the

instruments in their own free time did not manage to bring the instruments back in time. Of the intended 11 interviews, all were successfully completed thereby indicating a 100% response rate for interviews. The high response rates resonate with Shirley and Sushanta (2018) and Altman and Bland (2017) who opine that acceptable response rates are over 70% and 80% respectively. This indicates the reliability and validity of the current study results in terms of response rate alone.

4.3 Demographic information

This showed the profile of the study participants and it was divided into information on interview respondents and information on questionnaire respondents as indicated below.

4.3.1 Interview demographic information

The participants who were interviewed displayed varying demographic characteristics as shown in Table 4.2 below.

Table 4. 2: Interviewee profiles (N = 11)

Age	Gender	Area of responsibility
29	Male	Business Development manager
34	Female	Farm manager
42	Male	General manager
38	Male	Business Development manager
38	Female	General manager
29	Male	Business Development manager
35	Female	Farm manager
39	Male	General manager
44	Male	Business Development manager
48	Female	General manager
42	Male	Farm manager

Source: Primary data (2024)

The results in Table 4.2 indicate that there were 11 interviewees whose ages ranged from 29 to 48 years thereby increasing the reliability of the results given the maturity of the respondents. In addition, there were more males (7) compared to females (4) which indicates the gendered nature of the agricultural sector though it demonstrated a significant balance in terms of responses as the results were representative of both males and females. The results were obtained from participants with different responsibility portfolios as 4 were general managers while 4 were business development managers and 3 were farm managers. This demonstrated the varied nature of the respondents which amplified the results in terms of validity and reliability in line with Bordens and Abbot (2018) who opine that respondent diversity increases the credibility of study findings as they are not skewed in favour of one group at the expense of others.

4.3.2 Questionnaires demographic information

Table 4.3 shows the demographic information of the questionnaire respondents.

Table 4.3: Respondent demographic evidence (n=298)

DEMOGRAPHIC ASPECT	RATE OF RECURRENCE	PERCENTAGE RESPONSE RATE %
RESPONDENT AGE		
Below 30 years	27	9
31 – 40 years	202	68
41 – 50 years	39	13
Over 50 years	30	10
RESPONDENT SEX		
Male	188	63
Female	110	37
HIGHEST LEVEL OF EDUCATION		
O Level	39	13
A Level	54	18

Certificate/diploma	72	24
Degree	133	45
AREA OF RESPONSIBILITY		
Managerial	113	38
Non managerial	137	46
Top Executive	48	16
PERIOD OF EMPLOYMENT		
Below 5 years	39	13
6-10 years	54	18
11-15 years	83	28
Over 15 years	122	41

Source: Primary data (2024)

The above indicates that in terms of age distribution, most (68%) of the respondents were between 31 and 40 years of age while 13% were between 41 and 50 years and 10% were over 50 years and the rest (9%) were below 30 years of age. This shows that most respondents were middle aged which corresponds with the physical nature of farming and in turn it increased the validity and reliability of the results considering the relative maturity of the respondents. This correlates with Markos & Sridevi (2020) who notes that age contributes to respondent experiences of the studied phenomenon.

The results further show that in terms of gender distribution, most (63%) were male while 37% were female thereby indicating the domination of the farming sector by males. However, the presence of both males and females in the data set increases the validity of the results as they represent the views of both sexes on the subject under investigation. This supports observations by Barrick et al (2020) who contends that the presence of members of both genders increases the representativeness of the results.

In terms of educational status, most (45%) of the respondents has university degrees while 24% had diplomas or certifications and 18% had attained A level while the rest (13%) had attained O levels. This shows that all the respondents were fairly educated to be able to clearly understand what the study was all about and this increased the validity of the results based on respondent comprehension. This supports views by Idowu et al (2020) who notes that educated respondents are more likely to provide credible information as they understand the nature of the inquiry and can take it seriously compared to lowly educated respondents.

The results also showed that in terms of employment status, most (41%) had served their organisation for over 15 years while 28% had served for periods ranging from 11 to 15 years and the rest (31%) had served for much shorter periods. This shows that most respondents had relatively longer service periods in their organisation leading to reliability of the information provided since it was based on their lived experiences of their organisations. Idowu et al (2020) agrees that long serving respondents are able to better articulate issues as they have a long history with their organisation.

In terms of areas of responsibility, the results indicated that most (46%) of the respondents had non managerial roles while 38% had managerial roles and the rest (16%) had top executive positions. This indicates that most data emanated from respondents with actual experience of the studied phenomenon through daily interacting with farming practices in which agricultural inputs were central. This improved the validity and reliability of the results according to Idowu et al (2020) who notes that respondent direct experience of study phenomenon increases the credibility of their contributions which are not based on conjecture but practical lived experiences.

4.4 Presentation of results

The study utilised frequency tables to present the results from questionnaires before linking them up with interview data in line with methodological triangulation.

4.4.1 Current manifestations of agricultural input support for farmer organisations

Table 4.4 provides the results on the current manifestations of agricultural input support for farming organisations under the CBZ Agro Yields Scheme.

Table 4.4: The current manifestations of agricultural input support for farming organisations

STATEMENT	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
	%				
Our institution obtains inputs on credit	0	8	0	92	0
Input credit offers affordable inputs for us	83	17	0	0	0
The credit input support is reliable	92	8	0	0	0
There is low risk associated with input credit	91	9	0	0	0
The input credit scheme is inclusive	89	11	0	0	0
We get free inputs in our organisation	78	9	0	9	4
We receive subsidised inputs in this organisation	67	6	0	0	27
We get agricultural extension services in this organisation	68	6	0	20	6
Our organisation is part of an integrated input support scheme	67	8	0	25	0
Our organisation is integrated into an input supply chain	87	9	0	4	0

Source: Primary data (2024)

When they were asked about the current manifestations of agricultural input support most respondents (92%) agreed that their organisation obtains inputs on credit. However, the results further indicated unanimous (100%) respondent agreement that the inputs were not affordable; not reliable; exposed farmers to risk and were not inclusive. The results also showed that most farming

organisations do not get free inputs according to 87% of the respondents though 13% had different views. Most respondents (73%) also indicated that their organisation does not receive subsidised inputs; that they were unreliable (74%) while most respondents (75%) also claimed that their organisation is not part of an integrated input support scheme. Lastly, most (96%) claimed that their organisation is not part of an input supply chain. This indicates that currently, the input support under CBZ is premised solely upon contract farming while other forms of support are missing. This demonstrates the narrow nature of current input support which could compromise farmer productivity. These results demonstrate that most respondents were concerned about the current state. These views were further corroborated by interview data as some participants alluded to aspects of risk, lack of flexibility and limited reliability of the scheme as summarised in the following statements:

> Interviewee 4- *Agricultural input support sounds like a good idea until you commit yourself to the deal in which you are expected to repay the loan regardless of the season. For instance, this year the rains were erratic and as you saw on your way here all the crops are a right off but the bank does not seem to understand this as they have to recover their investments in one way or the other.*

> Interviewee 6- *At times inputs are delayed leading to late planting and the biggest challenge is the fact that CBZ has to rely on third parties for the supply of inputs and it is not always easy to get inputs on time especially since the same suppliers are saddled with meeting the input needs of other customers as well.*

> Interviewee 10- *The challenge is that the supply contract is cast in concrete and it is often difficult to renegotiate terms following failed harvests as what occurred this year.*

These views were also supported by most (9) interviewees who alluded to the inadequacy of current agro input support schemes under the banner of the CBZ. Their views are summarised in the following statements:

Interviewee 4- *Ideally, we could benefit from access to agriculture extension services but given that the bank concentrates on only input access without commensurate knowledge and skills building, this does not produce the desired results for most farmers.*

Interviewee 6- *In other countries, farming organisations like ours obtain subsidised inputs and this reduces the cost often incurred in the search for inputs. However in our case perhaps the feeling is that we are too big to attract the sympathy of the government.*

Interviewee 10- *The challenge is that we are not firmly integrated into the global input supply chain and this compromises the achievement of our productivity targets.*

Interviewer 8- *The package only covers inputs such as fertilisers, certified seeds and crop chemicals but do not cover related aspects like electricity, water and capital equipment.*

4.4.2 Factors influencing farmer decisions to participate in input support schemes

The results in Table 4.5 indicate the factors influencing farmer decisions to take part in input support schemes in Zimbabwe.

Table 4.5: Factors influencing farmer decisions to take part in input support schemes

STATEMENT	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
	%				
The cost of inputs is unsustainable hence the need for input support	8	92	0	0	0
We have limited access to independent finance hence we require input support	94	6	0	0	0
Our farm is very large in size hence we cannot manage on our own without external input support	94	6	0	0	0
We are a commercial farm with special needs hence we require input support	92	8	0	0	0
We are aware of sources of potential input support whom we can easily approach for help when needed	91	9	0	0	0
We are focused on farm profitability which is only possible when we get input support	74	26	0	0	0

Source: Primary data (2024)

When they were asked about the factors that influenced their decision to enter into agricultural input support, there was unanimous respondent agreement (100%) that input costs are often unsustainable hence the need for additional support; that farmers had limited access to independent finance; that they cannot manage on their own without external support given the size of their operations; that they have special needs since they engage in commercial farming which requires additional input support; that they are aware of various input support options and that their quest for profitability pushes them towards input support schemes. These views were in turn corroborated by several interviewees who noted that:

Interviewee 4- *Commercial farming ventures are input and resource intensive operations and like all businesses it is impossible to produce anything without support as we need finances to secure seeds, fertilisers, equipment and pay for electricity and water.*

Interviewee 2- *Input support from reliable creditors catalyses production and we have seen that successful farmers are well funded even in other countries such as the European Union. This also applies in our case because profits are elusive without support.*

Interviewee 7- *Independent financiers or venture capitalists provide expensive forms of credit and are unaffordable for most farmers who deal in products that are of lower economic value. This means that we are often unable to secure independent finance hence the decision to approach government linked banks.*

4.4.3 Effect of agriculture input support schemes on farmer productivity

Table 4.6 shows the results on the effect of agriculture input support on farmer productivity in Zimbabwe.

Table 4.6: Effect of agriculture input support on farmer productivity

STATEMENT	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
	%				
There has been improvement in profitable operations since we started receiving input support	82	9	0	9	0
Input support has resulted in increased input usage and higher crop yields	65	10	0	0	25
We have noticed an improvement in crop quality since we started getting input support	88	6	0	0	6
Input support has promoted income growth for our organisation	87	13	0	0	0
The Hectarage with improved practices has grown since we started getting input support	92	8	0	0	0

Source: Primary data (2024)

When they were asked about the effect of agriculture input support on the productivity of their organisations, most respondents (91%) disagreed that there has been an improvement in venture profitability. In addition, most (75%) disagreed that there has been an improvement in yields while 94% denied that there has been improved crop quality. There was also unanimous (100%) respondent denials regarding the effect of input support on income growth and improvement in practices per each hectare of land. These results therefore indicate that the effect of current input support schemes on farmer productivity is negative thereby indicating its inadequacy to address the current challenges faced by the farmers. These views were also corroborated by some interviewees who claimed that:

> Interviewee 5:- *If anything our organisation has continued to complain about regular losses despite receiving input support on a yearly basis.*

Interviewee 3- *There hasn't been any meaningful improvement in agricultural techniques since the adoption of input support in fact the hectares that demonstrate improvement are not related to input support.*

Interviewee 6 – *The fact that input support has not been successful is evident in the fact that our organisation continues to borrow yearly and has been unable to wean itself from its debt obligations to the bank.*

Interviewee 7- *the amount of our loan has been reduced because our productivity has refused to go up.*

To further test the relationship between current input support schemes and farmer productivity under the CBZ scheme, the researcher engaged in regression analysis. Table 4.7 presents the results of the regression analysis.

Table 4.7: Regression model summary

Model	R	R SQUARE	SE of the estimate
1	-0.738[a]	-0.534	0.52348

Source: Primary data (2024)

The fact that R = -0.738 depicts a strong negative association between agriculture input support and farmer productivity among institutional farmer organisations. That R Square = -0.53 specifies that a negative change in farmer productivity is explained in terms of changes in input support. It simply demonstrates that the increase in input support had no effect on farmer productivity. This confirms study results by Pindiriri et al (2021) who notes that the results from regression analysis indicate that in reality free inputs have no impact on seed application, poverty and farmer income.

4.4.4 Ideal model for enhanced agricultural input support

A diagnostic assessment indicates that the root causes of impaired farmer institutional farmer productivity encompass inflexible loan repayment terms, unaffordable inputs, unreliable input supplies, higher risk exposure and exclusivity. There is also absence of other viable alternatives like input subsidies, free inputs, agricultural extension services and integrated input support schemes. It is because of the unsatisfactory nature of current input support schemes that farmer productivity in terms of yields, income and improved practices per hectare is impaired. When some interview respondents were asked about an ideal input support scheme they claimed that:

> Interviewee 4- *Under normal circumstances, an ideal input support scheme should focus on timely access of inputs for farmers while at the same time addressing administrative challenges that increase input costs.*
>
> Interviewee 5- *It is important for the CBZ bank to demonstrate flexibility and vary the loan repayment terms especially in the aftermath of poor seasons such as what we experienced this year.*
>
> Interviewee 10- *It is important to diversify the nature of input support to also provide for electricity, water supply, agriculture extension services and farm mechanization which capacitate production at farm level. The current approaches based on only seeds and agrochemicals are not sufficient to cater for all the farmers' production needs.*

The above indicates that the targeted interventions encompass reliable input provision, flexible loan repayment options, access to additional inputs such as electricity, water and farm equipment. The introduction of technology such as drones (for crop monitoring), mobile applications (for market information and weather updates) and capital equipment for efficiency would resonate with precision agriculture. There is also a need for a model that takes into account the factors influencing farmer decision to participate in input support schemes. The results further indicate that when done well input support schemes are subject to a range of achievements among farmers who borrow though they can be associated with significant challenges. This means that the

proposed model should amplify the benefits while minimising the challenges faced by institutional farmer organisations.

The objective of this model was to improve farmer productivity represented by crop yields, farmer income and Hectarage with improved practices under an input support arrangement. The key components of the model encompassed agriculture inputs (agrochemicals, seeds) and support mechanisms (mechanization, training, access to credit). The information for the model was collected from a primary study premised on a sample of farm employees across three farming ventures in Harare. The model was developed with the aid of linear programming and the mathematical system representation in the form of equations, relationships and variables is presented below.

The final model is offered below.
Agricultural Input Support Model (AISM)

Inputs components

1. *A (Agrochemicals): 0-100 kg/ha representing fertilisers, pesticides and herbicides
2. *S* (Seeds): 0-100% high-quality seeds
3. *T* (Training): 0-10 hours/season
4. *C* (Credit): 0-100% access to affordable credit
5. *M* (Mechanization): 0-100% use of efficient machinery

Farmer Productivity (FP):

1. *Y* (Yield): tons/ha
2. *I* (Income): $/season

Relationships:

1. *$Y = 0.5A + 0.3S + 0.2T + 0.1C + 0.1M$* (Yield increases with inputs)
2. *$I = 2Y - 0.5A - 0.3S - 0.2T - 0.1C - 0.1M$* (Income increases with yield, but decreases with increase in input costs, inflexible input credit, unreliable input suppliers, higher input risk, lower quality inputs, exclusive input distribution and narrow input choices)

Constraints:

1. *$A + S + T + C + M \leq 100$* (Total input support is limited)
2. *$Y \geq 1$* (Minimum yield requirement)
3. *$I \geq 500$* (Minimum income requirement)

Objective:

Maximize *I* (Farmer Income) subject to the constraints.

Solution:

Through the use of linear programming or optimisation procedures, it follows that:

Optimum input points:

1. *A = 60 kg/ha*
2. *S = 80% high-quality seeds*
3. *T = 6 hours/season*
4. *C = 80% access to affordable credit*
5. *M = 60% use of efficient machinery*

Optimal Farmer Productivity:

1. *Y = 12.5 tons/ha*
2. *I = 12000 $/season*

This model show that different agriculture input combinations can be easily optimised for maximum farmer productivity represented in terms of yield and income. The model assumption is that an ideal scenario to improve both yields and income would be for the CBZ bank to enhance farmer access to various input combinations encompassing agrochemicals (fertilisers, herbicides, nematicides and pesticides), seeds, training (agricultures extension services), input credit and mechanization (farm equipment). This will entail the need to address aspects of accessibility, affordability, reliability, risk exposure and inclusivity of input processes targeted at institutional farmer organisations in Zimbabwe. The final model can be depicted in the form of a diagram as shown below.

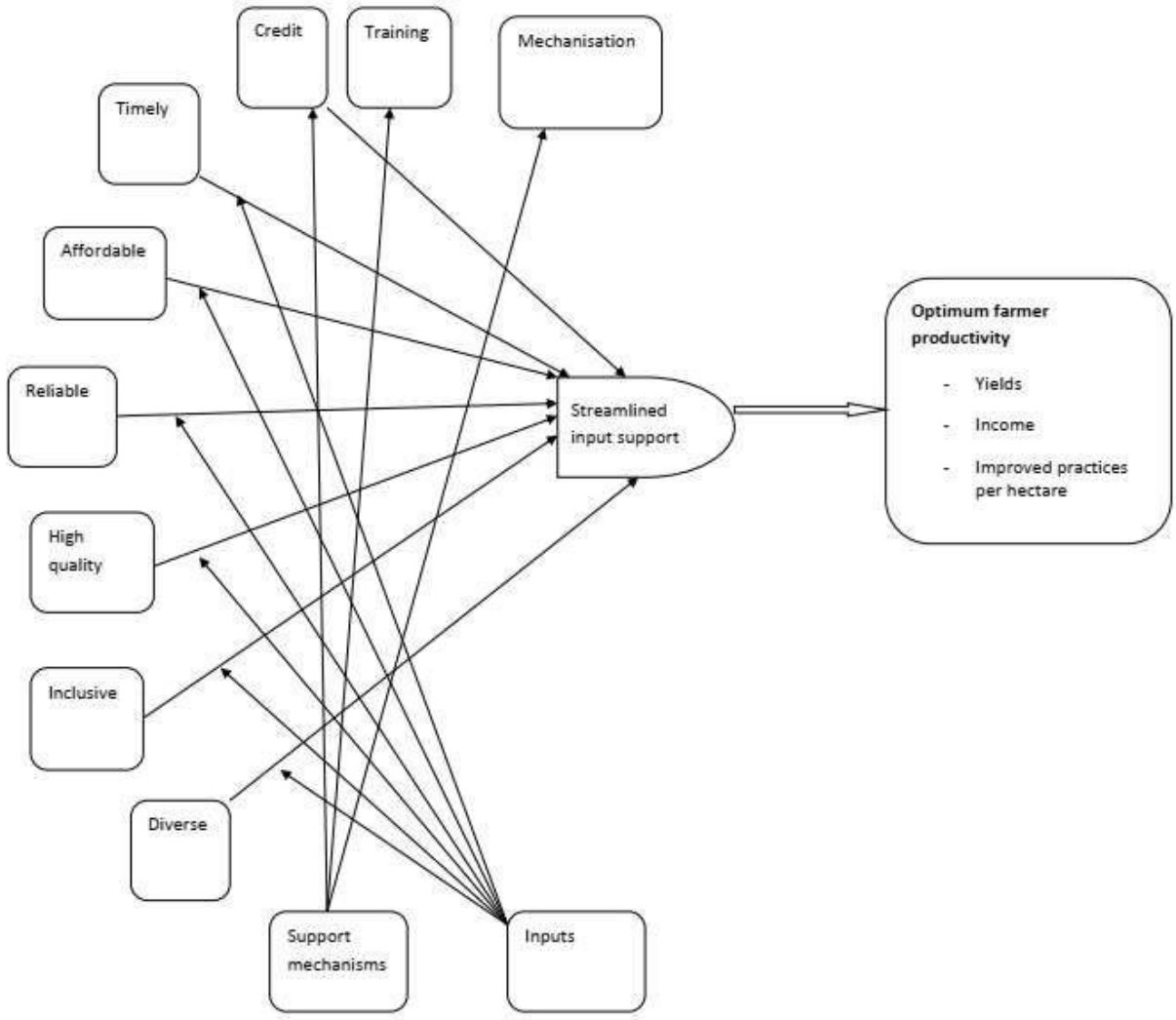


Figure 4.1: Zimbabwe Agriculture Input Support (ZAISM) model

Source: Primary data (2024)

4.5 Analysis and discussion

The results cumulatively indicate that though farming organisations receive various forms of inputs on credit under the CBZ scheme, there are inherent challenges which makes the scheme less attractive to participants. Thus, the absence of flexibility in repayment means that farmers who enter into contractual agreements with the bank risk losing their collateral in the event that they fail to repay on time. This offers farmers limited legroom in the event that they encounter bad harvest which are now a frequent occurrence in view of climate change threats. In addition, the respondents also cited the lack of affordability in inputs thereby indicating the potential for over pricing among input suppliers who capitalise on the higher levels of input demand. When inputs are unaffordable this increases the total cost of the loan as farmers are only able to get a limited amount of inputs that they originally planned. This means that farmers are often unable to plant the required Hectarage which compromises their productivity.

In addition, unreliable input supplies means that farmers struggle to plan in advance which affects their productivity projections in relation to crop quality and quantity. In essence, the input support scheme seems to place farmers under a significant risk as they are designed on the basis of successful farming season. Some respondents also pointed towards the exclusive character of the input support scheme thereby indicating that not all aspirants are able to get support. This indicates the potential for failing to get inputs at times despite having made the application in the first place. These results show that current forms of input support are limited to only input credit which could increase the debt burden of most farmers since they are expected to pay back the loan issued regardless of the nature of the season. This simply shows that farmers only get financial support through which they obtain the inputs but even when they lack knowledge on input use, this is not available as part of the package of input support. The lack of access to other productivity enablers such as electricity, water and capital equipment could further compromise the yield potential of most commercial farmers involved in bank led input support schemes.

These views regarding the problematic state of agricultural input support were also echoed in related studies elsewhere. Several scholars add that that input credit models are subject to a debt

burden as farmers are exposed to debt in the event of crop failure or market fluctuations (World Bank, 2020; Thapa, 2019). It also promotes farmer dependency on credit, foster financial exclusion as certain farmers fail to get credit, increases farmer risk exposure, exposes farmers to poor quality inputs and is associated with sustainability concerns (Yaro et al., 2017). Kanyamuka, Jumbe and Gilbert (2022) opine that these inputs are often unaffordable for most farmers in developing countries. It has been noted that more often, farmers struggle to access inputs due to higher costs (Moyo, 2011).

This contradicts observations by Olomola (2022) who notes that input support through access to credit smoothens production through mitigation of production risk. Haque and Goyal (2021) contend that reducing the input price of given inputs through part payment will increase their usage leading to production growth and this is particularly so among farmers operating in markets that experience input market failure. This echoes views by Morris et al (2007) who notes that smart subsidies promote the efficient use of inputs such as fertilisers, leverage the private sector through redeemable vouchers to foster competition among input suppliers, give farmers market choice, ensure sustainability and promote pro-poor economic growth. Thus, in the absence of such subsidies or free inputs, most farming organisations look up to input credit which is saddled with its own challenges.

Agricultural extension services are associated with market linkages through the provision of information regarding market demand, quality standards, marketing channels and price according to Tanko et al., (2019). Integrated input support offers a comprehensive approach to farmer productivity challenges as it attacks farmer constraints from multiple angles as observed by Mohammed- Nurudeen (2021). Our results therefore pointed towards the problematic character of current agricultural input support and this justifies the need for an alternative input support model that aims to enhance farmer access to inputs for enhanced productivity.

These results indicate that the quest for input support is premised on the fact that most input sources and suppliers are unsustainable and despite their inherent challenges, government related suppliers are at least capable of meeting the farmer's long term production needs. Besides, most commercial farmers are extensive in nature and one is hardly able to make meaningful production through

reliance on owners' equity alone. This demonstrates the role of input support in capacitating farmers. The support offers the basis for sustainability of production, ability to meet special needs and profitability. These results indicate that farmers enter into input support agreements because of several factors beyond their control and this implies that the input support schemes should meet the pressing needs of the farmers.

Several studies also produced related evidence regarding the factors influencing farmer decisions to enter into input support schemes. In most resource-constrained settings, agriculture input support schemes represent perhaps the only option for farmers as also opined by Lowery, Greif and Huntington, 2023; Debata, Wamulume and Wansakilwa, 2014; Chandio et al., 2020; Wagacha and Odini, 2020; Haque and Goyal, 2021). Mazwi et al (2019) concur that in the context of a financing gap, most farmers participate in agriculture input support schemes since they offer relatively flexible conditions compared to orthodox sources of financial support.

Mafirakureva et al (2023) add that land size (hectares), type of farming (dryland/irrigation), farm equipment, livestock and crops grown determine the decision to participate in input support schemes. This correlates with Moahid and Mohajan, 2020; Tira, Kinea and Kaso, 2017; Kumar et al., 2019) who noted that as the size of the farm land increases so too does the need for input support arise. Thus, larger farms involved in cash cropping are most likely to engage in input support schemes as our results also established. These results therefore show that the determinants of farmer productivity encompass the sustainability of input costs and their ability to meet special needs.

The above results indicate that current agricultural input support schemes are associated with negative productivity outcomes as evidenced by lower venture profits, reduced crop yields, poor crop quality, lower income growth and reduced practices on all hectares. During field visits the researcher noted that most farming ventures are still dependent upon rain fed agriculture and cannot afford to irrigate their crops which explains the poor harvests. This simply shows that the intended purpose of the input support has not been achieved leading to productivity gaps among the institutional farmer organisations. These views were also echoed in related studies. Agriculture input support schemes have been associated with dynamic effects on growth and they are also one

of the ways of enhancing the profitability of inputs use (Chirwa and Dorward, 2013). However, other scholars like Lopez et al., (2017) note the political economy difficulties associated with such input support schemes which may be inefficient but have continued to be doled out because they serve particular political interests. This might indicate that the reasons for the failure of input support schemes to spur agricultural productivity may be beyond the organisations themselves. These views were echoed by Pindiriri *et al.*, (2021) who note that agriculture input support schemes do not resonate with enhanced input usage, food security and poverty alleviation.

4.6 Chapter summary

This chapter presented, analysed, interpreted and discussed the results. It capitalised on information obtained through interviews and questionnaires targeted at employees within institutional farmer organisations in Zimbabwe. The results were first presented in terms of demographic data before focusing on non-demographic data. The researcher utilised a combination of data presentation techniques encompassing frequency tables supported by verbatim quotes as well as inferential statistics in the form of regression analysis. The model was designed with the aid of linear programming. The next chapter sums up the study.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This study aimed to propose a model on agriculture input support schemes and farmer productivity in Zimbabwe with specific reference the three selected farming institutions supported under the CBZ Agro Yields scheme. The study aimed to propose a model that would enhance the efficacy of input support in terms of farmer productivity. The objectives entailed the need to examine the current state of agricultural input support offered to institutional farming organisations in Zimbabwe; determine factors influencing farmer decisions to participate in input support schemes; determine the effect of current input support schemes on farmer productivity among institutional farming organisations in Zimbabwe and to propose a working input support model for enhanced farmer productivity among institutional farmer organisations in Zimbabwe.

5.2 Summary of major findings

5.2.1 The current state of agricultural input support offered to institutional farming organisations in Zimbabwe

The results indicated that institutional farmer organisations under the CBZ Agro Yields Scheme are subject to a narrow and often unsatisfactory input support regime based solely on input credit or contract farming. This means that they do not get free or subsidised inputs and are not part of integrated input support or input supply chain arrangements. In the same vein, the input credit facility itself is also subject to a range of challenges encompassing the fact that they are unaffordable through exposing farmers to additional administrative costs. Moreover, input supplies under the credit input scheme are often unreliable as farmers get their suppliers late due to logistical challenges. The results also showed that input credit is hamstrung by the fact that the facility is exclusive at times disenfranchising deserving farming due to political interference. Both questionnaire and interview respondents agreed that the current manifestations of agro input

support under the CBZ scheme are not satisfactory and this justified the need for an alternative input support model that would spur farmer productivity.

5.2.2 Factors influencing farmer decisions to participate in input support schemes

The results indicated that farmer decisions to participate in input support schemes were dependent upon a range of factors. These encompassed unsustainable nature of input costs on the open market wherein farmers struggle to access inputs on their own resources due to national economic challenges. In addition, farmers had limited access to independent sources of finance such as venture capitalists and angels who often charged exorbitant interests hence the decision to approach banks and other government related institutions offering agricultural credit. It was also noted that most farms are large while also engaging in commercial agricultural activities which were capital intensive and this justified their need for input support. This also pointed towards their special needs which required financial injection on the form of contract farming arrangements. Moreover, most farmers were aware of the available input support options and were also motivated towards input support programs by their quest for profitability.

5.2.3 The effect of current input support schemes on farmer productivity among institutional farming organisations in Zimbabwe

The results from both questionnaires and interviews also demonstrated that current agriculture input support schemes under the CBZ arrangement had a negative effect upon farmer productivity in the sense that they failed to spur up venture profit. This means that farmers often experienced losses despite having access to agriculture credit. In addition the scheme was not associated with improved yield potential at farm level as farmers continued to produce the same amount of output. Besides, the respondents claimed that there has been limited improvement in crop quality since most crops often failed especially during droughts thereby indicating the limited impact of input support interventions which were considered to be limited. This means that even if farmers could access inputs on time and in adequate quantities, this was not sufficient to guarantee productivity in terms of crop quality and quantity since there were other additional resources such as water, electricity, farming equipment and knowledge that were not catered for by the input support

scheme. The results also showed that farmer incomes failed to respond to input support schemes and hectares demonstrating improved practices did not increase in number. Overally, the results of regression analysis also indicated that a unit change in input support correlated with a 58% decline in farmer productivity which indicated a negative correlation.

5.2.4 A working input support model for enhanced farmer productivity among institutional farmer organisations in Zimbabwe

The ultimate aim of the study was to propose an alternative model to enhance the effect of agricultural input support on farmer productivity. Thus, to arrive at the model the researcher first diagnosed the current roots of insufficient farmer productivity under the CBZ scheme. This led to the realization that farmer productivity depended not only upon traditional inputs such as seeds and agrochemicals which the current input support scheme targeted. Rather, it dependent on additional support mechanisms such as credit, training and mechanization which were overlooked in the current scheme. Thus, the proposed model, designed with recourse to linear programming indicated that farmer productivity under the CBZ scheme could be enhanced through improving input support through focusing on aspects of flexibility of loan repayment, affordability of inputs, reliability of input supplies, lower risk exposure, inclusivity and diversity of input options.

5.3 Conclusions

5.3.1 The current state of agricultural input support offered to institutional farming organisations in Zimbabwe

It is evident that farming organisations receive various forms of inputs on credit under the CBZ scheme, but the inherent challenges makes the scheme less attractive to participants. Thus, the absence of flexibility in repayment means that farmers who enter into contractual agreements with the bank risk losing their collateral in the event that they fail to repay on time. This offers farmers limited legroom in the event that they encounter bad harvest which are now a frequent occurrence in view of climate change threats. In addition, the respondents also cited the lack of affordability in inputs thereby indicating the potential for over pricing among input suppliers who capitalise on the higher levels of input demand. When inputs are unaffordable this increases the total cost of the

loan as farmers are only able to get a limited amount of inputs that they originally planned. This means that farmers are often unable to plant the required Hectarage which compromises their productivity.

In addition, unreliable input supplies means that farmers struggle to plan in advance which affects their productivity projections in relation to crop quality and quantity. In essence, the input support scheme seems to place farmers under a significant risk as they are designed on the basis of successful farming season. Some respondents also pointed towards the exclusive character of the input support scheme thereby indicating that not all aspirants are able to get support. This indicates the potential for failing to get inputs at times despite having made the application in the first place. These results show that current forms of input support are limited to only input credit which could increase the debt burden of most farmers since they are expected to pay back the loan issued regardless of the nature of the season. This simply shows that farmers only get financial support through which they obtain the inputs but even when they lack knowledge on input use, this is not available as part of the package of input support. The lack of access to other productivity enablers such as electricity, water and capital equipment could further compromise the yield potential of most commercial farmers involved in bank led input support schemes.

5.3.2 Factors influencing farmer decisions to participate in input support schemes

The results showed that most input sources and suppliers are unsustainable and despite their inherent challenges, government related suppliers are at least capable of meeting the farmer's long term production needs. This means that input support schemes offered to farmer netter hope than owner's equity. Besides, most commercial farms are extensive in nature and one is hardly able to make meaningful production through reliance on owners' equity alone. This demonstrates the role of input support in capacitating farmers. The support offers the basis for sustainability of production, ability to meet special needs and profitability. These results indicate that farmers enter into input support agreements because of several factors beyond their control and this implies that the input support schemes should meet the pressing needs of the farmers.

5.3.3 The effect of input support schemes on farmer productivity

It can be inferred from the results that current agricultural input support schemes are associated with negative productivity outcomes as evidenced by lower venture profits, reduced crop yields, poor crop quality, lower income growth and reduced practices on all hectares. The fact that most farmers are still dependent upon rain fed agriculture and cannot afford to irrigate their crops explains the poor harvests which come against a backdrop of loan related debt burdens for farmers. This simply shows that the intended purpose of the input support has not been achieved leading to productivity gaps among the institutional farmer organisations.

5.3.4 Ideal model agriculture input support scheme

It is cogent to opine from the results that there is need for a holistic intervention mechanism in which farmers would have access to inputs on time so that they can prepare for the farming season in advance. This also resonates with the aspect of input quality since input support often resonated with fraudulent input suppliers who offer defective seeds and chemicals to suppliers hence the need for effective supplier supervision and relationship management. The diversity of input options would also address farmer challenges since focusing on only input credit would narrow the farmer's choices to only those inputs offered by the bank. It can be concluded therefore that effective input support has to be holistic thereby catering for all the factors that affect farmer productivity. These factors could be social (knowledge and culture), economic (financial resources, chemicals, equipment, seeds), natural (water supply). Thus, there is need to augment current supply patterns if input support schemes are anything to go by.

The objective of the Zimbabwe Agriculture Input Support Model (ZAISM) shown in Figure 4.1 above was to improve farmer productivity in terms of crop yields, farmer income and hectarage with improved practices under an input support arrangement. The results indicated that institutional farmer organisations under the CBZ Agro Yields Scheme are subject to a narrow and often unsatisfactory input support regime based solely on input credit or contract farming. This

means that they do not get free or subsidised inputs and are not part of integrated input support or input supply chain arrangements.

In the same vein, the input credit facility itself is also subject to a range of challenges encompassing the fact that they are unaffordable through exposing farmers to additional administrative costs. The results indicated that farmer decisions to participate in input support schemes were dependent upon a range of factors which encompassed unsustainable nature of input costs on the open market wherein farmers struggle to access inputs on their own resources due to national economic challenges. The results demonstrated that current agriculture input support schemes under the CBZ arrangement had a negative effect upon farmer productivity in the sense that they failed to spur up venture profit. This means that farmers often experienced losses despite having access to agriculture credit.

The ultimate aim of the study was to propose an alternative model to enhance the effect of agricultural input support on farmer productivity. Thus, to arrive at the model the researcher first diagnosed the current roots of insufficient farmer productivity under the CBZ scheme. This led to the realization that farmer productivity depended not only upon traditional inputs such as seeds and agrochemicals which the current input support scheme targeted. Rather, it dependent on additional support mechanisms such as credit, training and mechanization which were overlooked in the current scheme. The key components of the model encompassed agriculture inputs (agrochemicals, seeds) and support mechanisms (mechanization, training, access to credit).

The model shows that different agriculture input combinations can be easily optimised for maximum farmer productivity represented in terms of yield and income. The model assumption is that an ideal scenario to improve both yields and income would be for the CBZ bank to enhance farmer access to various input combinations encompassing agrochemicals (fertilisers, herbicides, nematicides and pesticides), seeds, training (agricultures extension services), input credit and mechanization (farm equipment). This will entail the need to address aspects of accessibility, affordability, reliability, risk exposure and inclusivity of input processes targeted at institutional farmer organisations in Zimbabwe.

5.4 Recommendations

In view of the above observations several recommendations were made as shown below:

- The CBZ bank is urged to improve the affordability of inputs to farmers through binding contractual agreements with seed companies like Seedco and Karoo Klein that would ensure that farmers on credit are not cheated.
- The bank is also urged to relax loan repayment terms in view of seasonality to enable farmers to recover from their losses
- Farmer organisations are also urged to invest in crop insurance to hedge against bad harvests
- The CBZ is also encouraged to consider additional forms of input support encompassing mechanization, water supply and electricity that are currently not covered given the sole focus on seeds, fertilisers and chemicals.
- The government of Zimbabwe is urged to invest in agriculture extension services to augment the knowledge of supported farmer organisations.
- The government and the CBZ ban are also urged to improve on transparency in input candidate vetting to ensure that deserving beneficiaries get inputs.
- Agro input support to be diversified to cater for other areas encompassing technology, mechanization, water and electricity supply as well as agricultural extension services.
- The CBZ is urged to communicate and consult with the farmers to determine their exact financing needs before rolling out input support. This means that the targeted interventions are based upon the exact needs of the farmers for productivity and not those of the bank which are premised on own profitability. Thus, a mismatch between the objectives of farmers (productivity) and the objectives of the bank (profitability) needs to be aligned through constant communication and consultations.
- The government of Zimbabwe is also urged to incorporate other input support partners who deal in different forms of support such as the Zimbabwe Electricity Supply Authority and the Zimbabwe National Water Authority (ZINWA) for water supply. This will reduce the burden upon banks to fund other related farming activities that are outside their primary mandate.

5.5 Suggestions for future research

The current study proposed a model to enhance the efficacy of agricultural input support for improved farmer productivity in Zimbabwe. It targeted only three commercial farms in the vicinity of Harare which could limit the external validity of the results hence the need for future researchers to expand the inquiry scope through looking into other farming ventures in other areas. There are also other forms on input support being offered by organisations like Irvines Chickens which can be subjects for additional research in the future. Since the current study produced a model on agro input support, other researchers can test the model in future studies.

5.6 Chapter summary

This chapter summed up the study through first summarizing the results of the study. This offered an overview of the results based on each objective thereby demonstrating the extent to which each research objective was achieved. It then offered conclusions based on each objective and this simply indicated what the results meant for the researcher. It then offered recommendations to various stakeholders within the agricultural value chain in Zimbabwe and ended with suggested areas for future research.

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BINDURA UNIVERSITY OF SCIENCE EDUCATION (BUSE)

APPENDIX 1: QUESTIONAIRE FOR FARMER ORGANISATION STAFF

TO WHOM IT MAY CONCERN

My name is Levy Mabonga and I am a student at the Bindura University of Science Education (BUSE) and I am conducting an investigation that seeks to develop a working model on agro-input support schemes and farmer productivity with specific reference to institutional farmer organisations under the auspices of the Commercial Bank of Zimbabwe (CBZ) Agro Yields Scheme. You have been identified as a potential respondent in this investigation and please kindly respond to the following questions as objectively as possible. We are interested in your contributions regarding **agro input support schemes and farmer productivity in Zimbabwe** with a view of establishing effective interventions to address the challenge **faced by farmers**. Please read the following items. Please kindly tick your preference on the boxes presented below. There are no right or wrong answers to these questions so please be as honest and thoughtful as possible in your responses. All responses will be kept strictly confidential. Thank you for your cooperation!

If you agree to participate in the study please kindly append your signature on the space provided below.

Respondent signature: _____

Date: _____

SECTION A: DEMOGRAPHIC DATA (Please tick applicable)

1. **What is your age group?** 1. Below 30 years ☐ 2. 31-40 years ☐
   3. 41- 50 years ☐ 4. Over 50 years ☐
2. **What is your sex?** 1. Male ☐ 2. Female ☐
3. **Your highest level of education?** 1. O level ☐ 2. A level ☐
   3. Diploma/certificate ☐ 4. Degree ☐
   5. Other (please specify)…….
4. **Period of employment?** **1.** Below 5 years ☐ 2. 6-10 years ☐
   3. 11-15 years ☐ 4. Over 15 years ☐
5. **Area of responsibility?** 1. Non managerial ☐ 2. Managerial ☐
   3. Top executive ☐
   4. Other (please specify)……..

SECTION B: NON-DEMOGRAPHIC DATA (Please tick applicable)

7. A working model on agro-input support schemes and farmer productivity

SCALE:

1 = Strongly disagree, **2** = Disagree, **3** = Neutral, **4** = Agree and **5** = Strongly agree

The current state of agricultural input support offered to institutional farming organisations in Zimbabwe

CODE	ITEM	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
CS1	Our institution obtains inputs on credit					
CS2	The organisation is subject to flexible repayment terms					
CS3	The input support scheme is both affordable and sustainable					
CS4	We have been paired with reliable financial institutions who offer in put support					
CS5	The current input support model is inclusive					
CS6	The input support scheme does not expose us to risk					

Factors influencing farmer decisions to participate in input support schemes

CODE	STATEMENT	Strongly agree	Agree	Neither agree	Disagree	Strongly disagree
F1	The cost of inputs is unsustainable hence the need for input support					
F2	We have limited access to independent finance hence we require input support					
F3	Our farm is very large in size hence we cannot manage on our own without external input support					
F4	We are a commercial farm with special needs hence we require input support					
F5	We are aware of sources of potential input support whom we can easily approach for help when needed					
F6	We are focused on farm profitability which is only possible when we get input support					

Effects of current input support among institutional farming organisations in Zimbabwe

	ITEM	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
E1	The current input support is associated with growth in our incomes as a farm					
E2	The input support schemes has increase the usage of certified seeds and chemicals					

E3	Input support schemes have helped us replenish our soil fertility					
E4	Input support schemes have resulted in profitable use of inputs					
E5	Inputs have become more affordable for our organisation					
E6	The extent of our yields has improved due to input support					
E7	Our operations have become more profitable due to input support					
E8	The current input support scheme is inefficient					
E9	There are delays in the issuance of inputs					
E10	There are input leakages to undeserving beneficiaries at times					
E11	There is often lack of spatial and regional sensitivity in input distribution					
E12	At times we have been subjected to poor quality inputs					
E13	Our organisation has been subject to higher administration costs.					
E14	At times we are subject to political interference					

8. **What, in your opinion, do you think an ideal model meant to improve the impact of agro input support schemes on farmer productivity in Zimbabwe should constitute?**

.....

.....

9. **Is there anything else that you would like to add to this discussion?**

.....

.....

Thank you very much for your cooperation

APPENDIX 2: INTERVIEW GUIDE FOR KEY INFORMANTS

1. What is the nature of your involvement within agriculture input support in Zimbabwe?
2. What are the current state of agricultural input support offered to institutional farming organisations in Zimbabwe?
3. What factors influence farmer decisions to participate in input support schemes?
4. What are the benefits of input support on farmer productivity among institutional farming organisations in Zimbabwe?
5. What challenges are associated with agriculture input support schemes among institutional farming organisations in Zimbabwe?
6. What should an ideal model for enhanced agricultural input support among institutional farmer organisations in Zimbabwe constitute?
7. Is there anything else you would like to add to the above discussion?