EXPLORATION OF LIVED EXPERIENCES OF SELECTED SCHOOLS IN PRODUCTION UNITS IN KALOMO DISTRICT, SOUTHERN PROVINCE, ZAMBIA

BY

CHARLES SIMAAMBO

A Dissertation submitted to the University of Zambia and Zimbabwe Open University in fulfillment of the requirements for the award of the degree of Master of Education in Education Management

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Supervisor: Dr. Francis Simui

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AUTHOR'S DECLARATION

I, Charles Simaambo, do declare that this dissertation is my original work and has not been submitted for a degree or any other award in any other university.

Name: CHARLES SIMAAMBO

Signature.....

Date: .....

SUPERVISOR'S DECLARATION

This dissertations by Charles Simaambo has been approved as part of the requirement for the award of the degree of master of education in educational management at the University of Zambia.

Supervisor: ..... **Signed:** .....

Date: .....

Programme Co-ordinator: ..... **Signed:** .....

Date: .....

DEDICATION

I dedicate this achievement to my dear parents Mr and Mrs Moono Simaambo for supporting my academic pursuits since I started my primary school in the early seventies. I cannot forget my dear wife and three children who gave me the much needed moral and material support. All these have been a great pillar of inspiration and motivation towards my education. There are many more too several to mention who gave me moral support in order to achieve this great milestone. Above all, our God is a great and faithful Father.

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ABSTRACT

The study explored the lived experiences of selected schools in Production Units in Kalomo District, Southern Province, Zambia. The factors considered were the performance; management practices and the factors affecting management, performance and sustainability of production units in Kalomo District. Using the Hermeneutics Phenomenology research design, the study targeted head teachers and those involved in PU management of which ten schools were purposively sampled. Data was collected by means of an online interview instrument and was coded to bring out the major themes for each research objective. The study found that the PUs were in place and performing at less than their capacity though inhibited by lack of resources, animal diseases, poor marketing and competition from commercial agriculture. The school managers had capacity to improve PU performance. PU was profitable enough to support PU and school activities such as boarding school feeding. PU had management structures. Regarding management practices, it was found that school administrators were involved in planning, monitoring and supervision of production unit. Teachers were involved in the supervision of learners at PU; learners' were involved in PU as extra-curricular activity; PU committees were involved in the management of PU; full-time/part-time labourers were involved in production unit and there were other stakeholders involved in production unit. Recommendations were made to indicate how schools can improve PU with an appropriate model focused on schools mobilising resources, engaging community stakeholders; having PU as part of the mainstream school strategic plan and working with the Ministry of Education on PU. The study contributes towards the enhancement of PU at school and district levels.

LIST OF ABBREVIATIONS AND ACRONYMS

DEBS	District Education Board Secretary
FAO	Food and Agriculture Organisation
FINNIDA	Finnish International Development Agency
GDP	Gross Domestic Product
KDS	Kalomo District School
MOE	Ministry of Education
NGO	Non-governmental organizations
PTA	Parents and Teachers Association
PU	Production Unit
SWOT	Strengths Weaknesses Opportunities Threats
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNZAZOU	University of Zambia and Zimbabwe Open University
USAID	United States Agency for International Development
WFP	World Food Program
ZANEC	Zambia National Education Coalition
ZNBC	Zambia National Broadcasting Corporation

CHAPTER ONE

INTRODUCTION

1.1 Overview

This chapter is based on the following subthemes: Background, Statement of the problem, Purpose of the study, Objectives, Research Questions, Significance of the study, Delimitation of the study, Limitations of the study, Operational Definitions and summary of the chapter.

1.2 Background

Production is a process that involves many activities of combining inputs to produce goods that are of economic value which can be sold to gain profit or which can contribute to self-sustaining of the institutions in running their programs like school feeding programs. Production units in Zambia were first introduced by the first president Dr. Kenneth Kaunda. Just after independence, the Zambian government embarked on general expansion of the educational system by building many primary and secondary schools but at the cost of neglecting technical and vocational schools (Hoppers, 1989). By 1969, the government saw the need for corrective measures kin to the educational system. During the opening of the First National Educational Conference in 1969 in Lusaka, President Kaunda observed that Zambia needed the type of education which can be a driving force for development that can be able to equip students with both intellectual knowledge and practical skills for entrepreneurship (Ministry of Education, 1969). Therefore, president Kaunda made proclamation in 1975 that all educational institutions should become production units (Hoppers, 1989).

The president passed an order that all villages, primary and secondary schools, colleges and the University of Zambia become food production units in order to make the country food secure and alleviate poverty (Daily Mail, 1975). Since then, schools have been engaging in agricultural production as part of their regular activities. Most of the production work in schools has been limited to agriculture: some acres of maize, a vegetable garden, keeping of small livestock, growing of fruit or poultry farming. But just after the introduction of production unit in schools, metalwork, woodwork, building craft, light crafts and leatherwork were introduced in upper primary schools, tools and teaching materials were distributed,

teachers had been trained and workshops were constructed, all sponsored by FINNIDA project (Hoppers, 1989).

Schools are places of teaching and learning, as well as a source of knowledge, attitude and skills development aimed at making the recipients and their societies better (Kaufman, 2013). Through schools many activities can be conducted by pupils, teachers and even parents to the pupils through a production unit which can be run together with learning programs. Production unit can be defined as a portion of the school laboratory where inputs (material and human) can be combined for the creation of goods or service provision (Ogumbe, 2015). For Zambia and many other countries, school production unit is a government encouraged mechanism for enhancing the relevance of education institutions to integrate classroom learning with practical lessons through production of goods (Ananda et al 2016).

The establishment and operation of production unit in schools is expected to provide on-the-job training for learners and provide commercial activities to sustain the day-to-day running of the institution (Ogumbe, 2105). Pratama et al. (2018) stated that production units are set up for the production and sale of products while ensuring students' acquisition of sufficient practical skills, adequate knowledge and development of attitudes of production in line with area of specialization, and can give profit income for the sustenance of hosting institutions. Ananda et al (2016) argued that the main aim of school production unit is to provide direct working experience and inculcate entrepreneurial spirit. Equally, Suprapto (2001) pointed out that production unit is an activity that serves to produce goods and services by utilizing all available resources for the school. This can help the schools to have an additional source of income that can support the budget of the school. Production unit is a way of teaching and learning so as to increase pupils' interest and motivation in pupils' fields of study. Through the synthesis of education and production, technical and vocational education institutions are expected to obtain new financing options for meeting training costs for their budgets (Singh, 1998).

Production unit in schools can help increase employment opportunities for pupils who graduate from educational and vocational training establishments, as it shortens the period of transition between school and labour market preparation. Production units can offer pupils from disadvantaged families vocational competencies which can make them productive members of their communities. Production unit is therefore a vehicle for systematic learning as well as a quick way of entry to the labour market, and it's an adventure for promoting

competencies which are required for launching and managing small scale businesses. Good schools should not just send graduates looking for work, but should send skilled graduates who are entrepreneurial to create jobs. Entrepreneurial spirit in schools is very important and must be nurtured from childhood by parents and teachers in schools through running of various production unit activities (Ciputra, 2012). Many entrepreneurial activities can be conducted in schools' production units and may include crop farming, gardening, orchard, keeping of livestock and poultry farming. Other activities may include woodwork, metalwork and other craft activities. The production units in Zambia are mainly centred towards agricultural production like gardening and crop farming, as well as livestock and poultry farming. This study will therefore, analyse the performance, management and sustainability of production units in Zambian schools of Kalomo district with inclination to agriculture production.

1.3 Problem Statement

It is the government's policy that each school must have a production unit, and there has been constant calls by the government of the republic of Zambia to revamp the production unit in schools, to be self-reliant and self-sustaining (Lusaka Times, 2011; ZNBC, 2019). World Food Program (WFP), Food and Agriculture Organisation (FAO), World Vision Zambia and other organizations have also been encouraging schools to revamp production units in schools as a way of scaling up nutrition (FAO, 2005; WFP, 2019). Africare is also another Organisation that has also been helping schools to set-up sustainable school gardens (USAID, 2009). These organizations have been giving support to schools in terms of agricultural inputs like seeds, fertilizer, pesticides and advisory services for crop production. Despite the calls by the government and private sector organizations for the schools to be actively running production units, the contribution and performance of production units in Zambian schools is low (ZANEC, 2021). The study therefore explored the lived experiences of selected schools in production units in order to understand opportunities and challenges linked to management, productivity and sustainability of Production Units.

1.4 Purpose of the Study

This study explored lived experiences of selected Schools in Production Units in Kalomo District, Southern Province, Zambia.

1.5 Specific Objectives

The following specific objectives guided the study:

i. To explore the performance of production units in Kalomo District

ii. To describe management practices of production units prevailing in Zambian schools of Kalomo District.

iii. To explore factors affecting management, performance and sustainability of production units in Kalomo District.

iv. To design a sustainability framework for improving performance of production units schools in Kalomo District.

1.6 Research Questions

The following research questions informed the study:

i. What is the status of performance of production units in Kalomo District?

ii. What management practices of production units exist in Kalomo District?

iii. What factors affect management, performance and sustainability of production units in Kalomo District?

iv. How can a sustainability framework be developed to improve performance of production units schools in Kalomo District?

1.7 Significance of the Study

This study is of great importance to the pupils, the teachers, pupils' parents, communities and the whole country. The study may help to identify factors that affect management, performance and sustainability of production units in Zambian schools, as the findings can be transferred to other parts of the country with similar contexts. The study may also design a framework for improving performance of production units. The findings may be used by policy makers in the country to provide solutions on improving the performance of production units. Non-governmental organizations (NGOs) like WFP, FAO and World Vision may also use the study information in deciding how best they can help schools

improve the performance of production units. By improving the performance of production units, pupils may benefit by having more experience with practical work that will increase their knowledge and skills. Pupils may also be more entrepreneurial to set up their own production activities at home in their communities for increased food production. The findings of this study may help teachers gain experience in managing production units which they can use in their own production activities. Improving production units may also benefit parents as their children may be more skillful to contribute to food security and income of the households. The country can also benefit from increased production of goods which can help alleviate poverty, more job creation for the Zambian youth and increased Gross Domestic Product (GDP) for the country.

1.8 Theoretical Framework

The theory of production involves the study of production or the economic process by which outputs are produced from inputs. For production to take place, resources are used to create goods or service that are suitable to use or to exchange in the market economy. Production is a process which occurs through a period of time and space. Among the two important aspects of production processes is quantity of a good or service and the form of a good. The production process involves combining various inputs which are material and immaterial in order to produce an output. There are factors of production that are needed to produce a given output (Shekhat, 2015). Economic resources, which are goods and services are needed for individuals and businesses to use for production. The economic resources are called factors of production and include; land, labour, capital, time and entrepreneurship (Lindenberger, 2003). The factors that are used in production describe the role of each resource in producing an output. Land is an economic resource which is naturally found within the environment and includes timber, farms and other natural resources. Land is usually a limited resource and it is usually a fixed resource. Land is an important resource especially in running a school production unit as it offers space for running many activities like school garden and keeping of livestock. The next important resource is labour; labour represents the human capital available to transform raw materials into goods. The human capital includes all individuals capable of working to provide various services to the business. In running a school production unit, the sources of labour may include; pupils, teachers and parents in the community. Labour is a factor of production that is a flexible resource (it's a variable resource), as workers can be changed easily within the production process. Capital is another

important resource in operating a school production unit. Capital represents the monetary resource that is used to purchase natural resources like land and labour that is used in the production process. Capital also represents the physical assets that is used in producing the goods, and these assets include buildings, production facilities, vehicles and other equipment (Shekhat, 2015).

Businesses can create their own capital resource, purchase them or lease them. For a school production unit capital includes the available land for the school, the buildings for the school that can be used for production unit and the available vehicles or transport systems. The monetary capital for running the school production unit may come from funding from the Zambian government, grant from donors or contributions from parents in the community. The other important resource is time; time is considered as a resource, as everything that happens takes place within a space of time, and time is also a limited resource. In running a school production unit there is need for proper planning and allocating of time so that there is no delay in production process. It's important to allocate time for all the workers who should be working for school production unit. Lastly, the other important resource is entrepreneurship, entrepreneurship is one critical factor in production, availability of resources may not transform into output on their own without entrepreneurship skill.

Entrepreneurship helps in producing a given output while at the same time assuming the risks involved in production. Entrepreneurship may involve the managerial functions of gathering resources and allocating them between competing ends (Shekhat, 2015). It is therefore important to ensure that the teacher or other worker assigned for managing the school production unit has the necessary knowledge and skills for good management and good performance of the production unit. The schools in Zambia need to ensure that all these resources are in place to ensure good management and sustainability of production units that can contribute significantly to good nutrition in schools and poverty reduction.

In addition to the production theory, Maria (2006) stressed that productivity is a function of all the various inputs (land, labour, capital, entrepreneurship and time) that are needed in the production function. Maria (2006) further stated that output is a function of all the needed factors and productivity is a function of both the input levels and the manner in which they are combined (Maria, 2006). Therefore, the production function links mathematically and conceptually the outcomes, inputs, and the processes of transforming the inputs into output. Developing a production function for each segment of the production unit for the school can

help to achieve technical and allocative efficiency that can result in good performance and sustainability.

1.9 Limitations of Study

There were particular factors that constrained the execution of the study. In terms of methodology, the study employed the qualitative approach which left out certain quantitative data. The study was limited to one district even if the aspect of production units affects the entire country. This arose due to limitations in terms of the researcher's finances, time, human and capacity to traverse a wider area. The study faced the limitation that it was conducted over a short period of time on a limited sample. There were challenges collecting valid qualitative data from the respondents as their views may have been diverse and uncorrelated.

1.10 Delimitation of Study

This study focused on lived experiences of selected schools in production units venture and was delimited to Kalomo District of Southern province. A purposive sample of the number of schools was drawn from the total number of schools in the district. The study explored performance, management practices affecting performance and identified measures for good performance of production units in schools. Primary data was generated using interview schedules. The study targeted head teachers, teachers and pupils assigned for management of production units, and these were purposively selected based on their experiences on management of schools and production units.

1.11 Definition of Terms

Entrepreneurialism: the spirit or state of acting in an entrepreneurialism manner.

Entrepreneurship: the art or science of innovation and risk-taking for profit in business.

Head teacher: is a teacher at a primary or secondary school appointed by the Ministry of Education as overall in charge of administration of the school.

Production Units/ Income Generating activities: will be used interchangeably to mean entire engagement of the education institutions in some collective

activities which pupils or students undertake to produce goods or services for their consumption.

Pupil: a person receiving education from grade eight to twelve education level.

Secondary School: a school that provides education from grade eight to twelve.

Teacher: a person who teaches at either primary or secondary school.

CHAPTER TWO

LITERATURE REVIEW

2.1 Overview

The literature review presented in this chapter provides the findings of other researchers' concerning management, performance and sustainability of production units in schools. The literature also highlights some of the theories and models that help to explain the necessary elements that need to be considered to manage production units in schools that can lead to good performance and ensure sustainability. Built on the theoretical framework as well as the empirical studies of other researchers, the chapter will also present the conceptual framework of various factors that could be the cause for low performance of production units.

2.2 Production Unit in schools

According to an empirical study by Marniati et al. (2018) production unit in schools is a place to train pupils with entrepreneurship practices. Teachers can utilize production unit to help pupils develop competence in production lessons. Marniati et al. (2018) findings found that practice based activities at production unit in schools is more effective than same activity in modest industries. Production unit in schools is very effective because teachers are oriented toward practice, become more creative in preparation of learning activities and helps in guiding pupils during practical lessons. Schools, teachers, and school staffs gain benefits from effective activities of the production unit. Results from the analysis have proved that marketing of products from production unit has given some benefits. It increases revenue and income of school and staffs. It also helps the school to complete purchasing of equipment and facilitate the activities of production lessons at production practice. A proportion of earnings from the marketing of products from the school production unit can be set aside to give to the teachers as incentives. The products from the production unit can also be shared to the teachers as a motivation for spearheading the activities of the production unit. The factor analysis conducted by Marniati (2018) found capability and development factor(s) as two critical benefits of running a production unit in schools. The capability factor includes variables like revenue, knowledge and skills, welfare, discipline, mastering of learning materials and being responsible. These factors have an impact on changing the understanding and attitude of pupils towards entrepreneurship learning. Through production unit, pupils

develop a spirit of entrepreneurship which can drive them to set up their own production ventures for development, a development factor.

In Zambia, many factors could be at play affecting the performance, management and sustainability. Mkandawire (2010) stated that unavailability of school facilities is a major impediment to curriculum implementation. This problem not only affect academic programs but also implementation of all other school programs like running of a production unit, as it is an adventure that requires many resources and assets. Time is also one resource that affect the implementation of a school curriculum. Inadequacy of time to implement school programs was also pointed out by Mulenga (2006). Mulenga stated that no attention was paid to the utilization of time in the process of implementing the school curriculum. Akinyemi et al. (2009) study found that majority of teachers lack time to set up gardens in school, lack interest for gardening, had no experience in gardening and majority also had no knowledge on gardening. To run a successful production unit, schools need to secure the needed facilities and resources, and must create time for the teachers, pupils and parents to participate in production unit activities.

An empirical study conducted by Mulenga (2019) indicated that the implementation of school curriculum in Zambia is faced by many challenges which include poor funding, inappropriate and inadequate teaching and learning materials, lack of qualified teachers for some subjects especially sciences, poor infrastructure for schools in rural areas especially and low morale for teachers. These problems which affect the implementation of the school curriculum can also affect the running of a production unit in Zambian schools.

A study conducted by Linah (2014) focused on assessing the input factors like the teaching process which determine the academic performance of students. The study found that physical facilities and teacher availability have direct and indirect effect on quality of teaching, as well as on educational attainments. Running a successful production unit in schools require physical facilities like buildings for rearing chickens for example, but if the schools do not have enough buildings, it is difficult to spare a building for the operation of a production unit. Herry et al (2016) stated that school resources must be examined to determine whether they are adequate enough for schools to venture into production unit. All the resources for the school like teachers, employees and pupils for the production unit must be assessed for adequacy. Herry et al (2016) further stated that some schools do not have a running production unit because the schools have failed to provide the needed resources.

Herry et al (2016) study found that in Manado City only 4 schools out of 32 schools had production units running, and the performance of the production units could not be considered good. In running a successful production unit, Herry et al (2016) recommended the establishment of production unit managers who can make planning, implementation guides, supervision and monitoring the activities and roles of teachers and pupils. School management must create time for pupils to go and participate in the activities of the production unit. The management of the production unit must have a clear organisational structure and the manager of the production unit must be recruited outside if resources can allow, this can help in smooth running of the production unit with less interferences from academic staff. However, the school management and all the teachers must support the production unit manager in running the activities.

According to FAO (2005), running a production unit like a garden requires a manager who may be the school principle or a teacher with experience in the management of the production unit. The production manager must be well supported by other team members who should be committed, show interest like some teachers, selected pupils and even some parents or community members. The production unit manager must always have a deputy who can quickly take the responsibilities once the manager is not available to ensure continuous production and supervision of activities. Managing a production unit requires tools and equipment to be in place for a continuous production. The production unit area need to be secured, and can be fenced to ensure that the produce is secure. Getting the needed tools and equipment as well as putting the structures in place like buildings for poultry and piggery and offices require finances and it may be a challenge for the school. However, the school can get grant charities, sponsors, or aid organizations. FAO (2005) also indicates that running a successful production unit requires support from the school, and the most important thing is to have a supportive head teacher and community interest in running the production unit, fellow teachers, parents and teachers' association and support from local education authority. To ensure sustainability of the production unit, FAO (2005) recommended to start small and then start expanding later as the unit accumulates more resources. Sustainability also can be achieved by establishing a good source for funding or creating a system where the production unit can be funding itself. The school can sustain the production unit through use of low cost production mechanisms. Other recommendations to ensure sustainability of production units is to have deputy manager to be taking over and ensure continuity of production, and also get

trained and experienced teachers as well as helpers who can pass on their knowledge to others.

The Ministry of Education in Zambia conducts workshops and provide short courses for head teachers on leadership in order to help them improve their leadership skills in managing the schools and implementing various activities such as running of the production unit. Despite this initiative to improve leadership skills, the Ministry of Education observed that most head teachers are not trained in financial management (MoE, 2015), which can greatly affect their performance and the performance of the schools running activities like production unit. Successful implementation of a production unit is about capacity building and motivation of implementers, including the extent to which the rules and regulations of implementation strategies are known by all the actors, taking actions and tasks daily by different actors involved in the production unit.

The Ministry of Education (2015) was concerned about head teachers' effectiveness in managing finances to implementing free education in primary schools in Kabwe District (MoE, 2015). The ministry received complaints from stakeholders, parents and teachers about the competence of head teachers in financial management. The ministry received cases of mismanagement and misappropriation of funds by some head teachers in the District, a problem which led to transfers and demotions of some head teachers. School head teachers are expected to have knowledge on accounting, finance and maintenance of financial records. Running a successful production unit requires competence by head teachers, school management, and production unit managers in financial management. School production unit needs good budgeting for the purchase of inputs needed, and school management must be knowledgeable enough to allocate financial resources efficiently.

Achieving success at any school depends on the effectiveness of the head teacher in managing of funds as the school administrator. Odhiambo and Simatwa (2012) stated that in order for a school to effectively achieve its desired objectives in an efficient manner, the head teacher should work with teachers, pupils and other relevant people within and outside community for the school. The effectiveness of managing finances lies mainly on the financial skills of the head teacher. The head teacher has to ensure that money is allocated to the school programs as required by the policy of the government. Poor financial management of school finances can have a direct negative impact on management, performance and sustainability of production unit in schools.

Mwamba (2017) stressed that the head teacher is expected to encourage and provide assistance for the professional growth of all the teachers under his/her leadership, and this can be accomplished through well planned seminars, workshops on financial management like financial record keeping, book keeping as well as retirements and acquittal of funds for the government. Encouraging other teachers to grow is important for developing a sense of support from all the teachers on running the programs of the school like production unit.

A study done by Jane et al. (2014) found that, inadequate, late disbursement of funds, lack of knowledge and skills in the process of procurement and the un-procedural procurement practices used by schools compromised the procurement process for the schools. Jane et al. (2014) study indicates that majority of head teachers, teachers and parents' representatives lack training on the procurement process and that affected the efficiency of the procurement committees. Therefore, the procurements in primary schools were not conducted as required due to inadequate knowledge and skills. Running a production unit in schools involves procurement of many inputs for use in the production function, however, if the management do not have the necessary knowledge and skills in procurement, it will lead to waste of resources and the production unit will fail.

UNESCO (1999) observed that what hindered the expansion of school facilities was lack of financial resources. Lack of finances prevented schools from developing production units. Running production units in schools needs resources; financial and material resources. Teachers need instructional resources which can help guide pupils in the learning process during production unit activities. Konyango et al (2015) study revealed that the level at which the vocational agriculture projects were started was beyond sustainability in terms of costs and the levels of teachers' competence. Due to inadequate financial resources teachers were not able to service or repair equipment, and that led to disuse.

An empirical study conducted by Kabugi (2013) found that school farm, agricultural tools and agriculture classes were inadequate, and that posed a challenge on management of production unit in schools. Additionally, livestock tools and laboratories for agriculture were not available in many schools. Teachers were also reported to be poorly equipped in dealing with the challenges posed by the system such as unavailability of materials. Konyango (2010) alluded that lack of textbooks, poor management, and poor funding were impending on teaching and learning of agricultural science in schools, and this also has a direct negative impact of running production unit in schools. To ensure good performance and sustainability

of production unit in schools, government, (P) parent and (T) teacher (A) association (PTA), and stakeholders should assist in providing the resources needed like school garden, animal farm, demonstration plots and laboratories to facilitate the teaching of Agriculture Science in schools. Teaching agriculture science requires many practical activities, therefore, lack of funds to acquire the needed resources for teaching practical work will impede on the effective of learning.

A doctoral study conducted by Amuah (2009) found that in developing countries; inadequate facilities, low efficiency levels of teachers, poor attitudes of teachers, poor funding, poor attitude of administrators for the schools and bad attitude of parents towards agricultural education were affecting progression of learning agricultural science and running of production unit in schools. In addition, Kidane et al (2013) also found that the teaching of Agricultural Science was greatly affected by lack of fields for gaining practical experience. Muchena (2013) observed that agriculture subject involves a variety of tools, but most schools are able to provide only simple farm tools which are a small fraction of the agriculture resources needed to operate a production unit for agriculture. It was observed that the teaching aids in schools were partially available, with land not being enough in most schools. In rural parts of Zambia, it is easy to secure land for production unit by rural schools, however, securing land for urban schools in Zambia can be hard, and this can greatly affect the performance of production unit in schools, as land is one of the major resources needed as an input.

The Ministry of Education (2010) reported that there are challenges concerning sector management and capacity building in Zambian education, which can affect the performance of the schools and the ability of schools to venture into various production functions. Among the challenges concerning management are; poor institutional capacity, slow procedures for tendering, slow process to expedite procurement works, ineffective supervision of the activities leading to misapplication of resources and poor workmanship. The Ministry of Education (2010) found that there was inadequate funding for identified programs and there was a weak linkage between the national budget and ministry work. The identified problems have a negative impact on the performance of schools, and affect schools' participation in many projects like running a sustainable production unit. The Ministry of Education (2010) further identified weaknesses in public sector education on how best to mobilise, receive, plan and source for external funding.

If schools in Zambia are to sustain the production units, schools need to learn on how to mobilise the resources for running the activities of production unit, and this may involve access to grant from private sector organizations. In addition to the findings by the Ministry of Education on management, Besong (2014) conducted a study on the effectiveness of head teachers in schools in Cameroon. The study focused on effectiveness of head teachers and its effect on managing human and material resources in schools. The study found that the effectiveness of head teachers (school administrators) was negative in managing material and human resources. This showed that, school administrators were not performing effectively in managing finances, assets and human resource. Empowering school administrators with knowledge and skills in management is critical to the success of all business ventures of the schools. Monitoring the performance of head teachers and all the personnel involved in the activities of the production unit is significant in achieving success, this can be done through regular reporting on the activities of the production unit to the (D) district education office and provincial education office.

Pratama et al. (2018) study aimed at determining the weaknesses of vocational high school production unit, the model of production unit that can ensure entrepreneurship in the activities of schools and also to determine the effectiveness of production unit model for the schools. The study focused on model development and testing. This study collected data using interviews and targeted vocational schools. The findings of the study were that the weakness of production unit were poor planning, overlapping job descriptions, inadequate supervision of the production unit works, developing a management model for schools as a learning platform and source of alternative funding. The study found that some schools had inadequate building facilities to be used in production units, and this may be evident in Zambian schools especially rural areas where schools still face the problem of inadequate classrooms. In addition, the study found that some schools had members of the production units with no expertise or competence in running the activities (Pratama et al., 2018).

The implementation of learning in production units was found to be ineffective in some schools, as some teachers could not focus on both teaching pupils in classroom and participating in the activities of the production unit. Pratama et al. (2018) indicated that there are four stages of managing production unit in schools which include; planning, organising, implementation and supervision of activities. It's important to provide a clear vision, mission and objectives during planning when establishing a production unit. At organising stage, the

schools should set up guidelines for preparation of organisational structure and clear job description to ensure cohesiveness. When implementing the activities of the production unit, management should divide the tasks for teachers, pupils, parents and workers, and also set up a timetable for learning and working in the production unit. Supervision is the last stage in managing production units in schools. Sustainability of the production unit for schools relies much on supervision of the works for the production unit. The other key elements under supervision is evaluation of the production unit, as well as evaluation of the education personnel.

Dudley (n.d.) study reported that running a school production unit like gardening requires many inputs and not just land and seeds. Sustainability of a school garden must combine efforts of administrators, teachers, workers, parents and pupils. A well-established strong team from the start will instil an ownership sense in the production unit that will boost support. The workers must be supported by all the parties involved (Dudley, n.d.). The school must be able to identify key stakeholders who can support the school gardens. Schools can also approach private local organisations who can help the schools by donating goods, providing volunteers to work, advertisement assistance and grant provision. The schools must be holding regular meetings and also form subcommittees for dividing the work activities. To achieve sustainability, the school can have many groups performing different roles in the production unit. Groups or subcommittees can be divided into public relations group, financial development group, maintenance group for the production unit, and also a group for developing the curriculum. School management together with community members can elect a chairperson from the community to work as a liaison between the community and the school concerning the activities of the school production unit (Dudley, n.d.).

Laurie et al (2017) found that the challenges in establishing and sustaining a garden for the school include insufficient knowledge and skills in managing the garden, lack of resources like water, fencing for the prevention of theft and vandalism, seeds, tools, poor soil quality, bad climate condition, pests and diseases, lack of commitment and support from the school management and parents in the communities and the challenge of growing a large portion of the garden. The other big challenge that was identified is failure to link school gardens with co-curriculum and extra-curriculum activities (Laurie et al., 2017). The challenges identified by the duo are critical to the operations of the production unit, as these challenges can also affect schools in Zambia.

Webb et al (2018) carried out a study to understand the barriers that affect the success of school garden. The findings were that; lack of time among teachers for managing the program for the garden, lack of maintenance plans, management of volunteers and retention of workers, discontinuity of leadership, implementation of innovations and complexity of school systems were the most critical barriers affecting the development and sustainability of school garden. A school garden is a component of the production unit, and the highlighted factors that affect the operations of a school garden can as well affect the operations of the production unit. School management must therefore ensure that the barriers are put into consideration when establishing a production unit.

Based on the theory of production and the empirical studies and reports of other researchers presented in the literature, the current study develops a conceptual framework comprising of many different factors that have an effect on management, performance and sustainability of production unit. Among the resources that can positively or negatively affect production unit in schools is land, labour, capital, entrepreneurship and time. Developing a system of self-sustaining of production unit through market orientation is critical for sustaining production unit in schools. This implies that schools should be able to produce good quality products that are suitable for sale at the market, to gain income that can support the budget for running the production unit. The success of a production unit will also depend on the commitment of head teachers, teachers, pupils, parents and all stakeholders in spearheading the activities of the production unit. Apart from the commitment, all the parties involved; teachers, parents and pupils must work in collaboration to support each other in carrying the activities of the production unit. Knowledge and skills of production is also critical to the operations of the production unit. School management must therefore ensure that the people managing the operations of the production unit have the required knowledge and skills to produce and manage all the activities effectively. In achieving a successful production unit, it's important for management to plan the activities of the production unit, organize the resources and activities needed, then coordinate proper implementation of the activities and ensure supervision of all the activities in the production process. One critical element under supervision is evaluation of the activities and progress of production at every stage to ensure that the production process is as planned and will achieve the intended objectives.

2.3 Theoretical Framework

This study will be guided by the Human Capital Theory, which was proposed by Schultz. According to this theory, education is an investment in human beings that may come in various forms. It may be in the form of learning a trade or it could take the form of personal development programmes aimed at improving personal skills (Schulz 1981). Thus, education is meant not only to adapt pupils to their society but to equip them to alter their environment for Sustainable Human Development. The standard approach in labour economics views human capital as a set of skills/characteristics that increase a worker's productivity. This is a useful starting place, and for most practical purposes quite sufficient. Nevertheless, it may be useful to distinguish between some complementary/alternative ways of thinking of human capital. Here is a possible classification:

- **The Becker view:** human capital is directly useful in the production process. More explicitly, human capital increases a worker's productivity in all tasks, though possibly differentially in different tasks, organizations, and situations. In this view, although the role of human capital in the production process may be quite complex, there is a sense in which we can think of it as represented (representable) by a uni-dimensional object, such as the stock of knowledge or skills and this stock is directly part of the production function.

- **The Gardener view:** according to this view, we should not think of human capital as uni-dimensional, since there are many dimensions or types of skills. A simple version of this approach would emphasize mental vs. physical abilities as different skills. Let us dub this the Gardener view after the work by the social psychologist Howard Gardener, who contributed to the development of multiple-intelligences theory, in particular emphasizing how many geniuses/famous personalities were very "unskilled" in some other dimensions. For the Schultz/Nelson-Phelps view: human capital is viewed mostly as the capacity to adapt. According to this approach, human capital is especially useful in dealing with "disequilibrium" situations, or more generally, with situations in which there is a changing environment, and workers have to adapt to this.

This study therefore, attempts to establish to what extent the Human Capital Theory will be applicable in indicating how sustainability and management of Production units can be achieved. Based on this theory, human capital goes a long way in playing the crucial role of accelerating agricultural productivity through learning, applying and disseminating of technical knowledge. Human capital also influences the farmer's capability in terms of adjusting new technology in particular circumstances as a changing demand. A person's human capital stock is a primary determinant of the kinds of employment they can successfully compete for, their consequent earning capacity, and lifetime earnings.

CHAPTER THREE

METHODOLOGY

3.1 Overview

This chapter will discuss the methodology and outlines all the specific methods that were used in conducting the study. It outlines research design, study population and sampling techniques to be used by the study, method of data collection, the type of research instruments that were used and the analysis model that was employed in exploring factors affecting management, performance and sustainability of production units in schools. The chapter therefore provides a complete view of the research approach, nature of the study, strategies and instruments to be used in achieving all the objectives of the research study.

3.2 Research Design

The study used Hermeneutics Phenomenology research design within qualitative methodology as applied by Simui (2018). The design is suitable for this study as it provides an avenue to unearth potential opportunities and challenges linked to Production Units through the lived experiences of teachers, pupils and school managers. At the same time, it provides an in-depth analysis of issues from the wholistic perspective.

3.3 Target Population

In the study, the population included all head teachers and all teachers managing production units in Zambian schools of Kalomo District in Southern province. All Head teachers and all teachers responsible for managing production units were asked questions on the performance, management and sustainability of production units. The school head teachers and teachers managing production units were purposively sampled based on their knowledge on school management and management of production units. The target sample also has wider experience and information based on factors affecting production units and what remedies can be undertaken.

3.4 Sample Size

In selecting participants for this study, the researcher employed a purposeful sampling method to select those who could offer him comprehensive information about the phenomenon (Mayan, 2009). A purposeful selection method was chosen, as recommended by

several authors for this type of research, in order to select information-rich cases for detailed study (Denzin & Lincoln, 2000; Patton, 2002). There are 165 schools in Kalomo District of Southern Province, and the study purposively sample 10 schools as part of the study. Three participants were interviewed from each of the 10 schools, and the research had a sample size of 30 participants. This sample size is large enough to arrive at sample saturation to inform the management, performance and sustainability of production units in schools. .

3.5 Data Generation

Methods of data generation was document analysis, observation, written reflective exercises, and repeated semi-structured interviews. These strategies were chosen because they are congruent with the philosophical framework of the research paradigm and methodology, and enabled access to participants' experiences (Ajjawi, & Higgs, 2009). As Creswell (2013) notes, "Qualitative researchers typically gather multiple forms of data, such as interviews, observations, and documents, rather than rely on a single data source" (p. 45). Furthermore, the primary data gathering method in this study were interviews. Interviews are appropriate when the topic of interest is focused on finding patterns between participants' experiences rather than on the particular settings in which the experience occurs (Warren, 2002). The development of the interview protocol and procedures for conducting the interviews are described below.

3.6 Data Analysis

The analysis of data in this study was concurrently done throughout the data gathering process using inductive data analysis. Field notes and interview transcriptions were reviewed from time to time to identify the emerging themes or patterns. The data was coded accordingly from the sources reviewed and across each site case. The data was analysed thematically and the identified themes were cross-checked by the participants for validation purposes. Researchers are at liberty to express emerging research themes in various ways (Clarke and Braun, 2013 as cited in Simui, 2018), van Manen's four reflective thematic guide were used as a starting point for analysis of lived experiences as follows: (i) lived space – Spatiality; (ii) lived body – Corporeality; (iii) lived time – Temporality; and (iv) lived human relation – Relationality (van Manen, 1997).

3.7 Trustworthiness of the Study

It was essential to ensure that the findings and interpretations remain accurate throughout the study. Qualitative researchers use trustworthiness to describe the accuracy of their studies (Creswell, 2008). Since this study was rooted in hermeneutic phenomenology, the concept of trustworthiness was a critical aspect throughout the research process. To ensure trustworthiness in this study, various strategies were constantly applied, including credibility, transferability, dependability and conformability (Lincoln & Guba, 2003).

3.8 Ethical Considerations

In carrying out a research study, it's a requirement that the research abides to the ethics. Data collection always carries with it the possibility of doing harm to others and these risks must always be minimized (McCall and Simmons, 1969). Care must be taken to ensure that the questions are not embarrassing and damaging to the respondents. Therefore, during the study anonymity was put into consideration by not disclosing respondent's names. The questionnaire was carefully reviewed not to include embarrassing questions or threatening statements for the respondents. The study also acquired informed consent of the respondents, and the data collected will be treated with highest confidentiality.

3.9 Summary

This chapter on methodology has outlined the research paradigm which is interpretivist in nature. The qualitative approach underpinned a phenomenological design targeting schools engaged in Production Units. The sampling size and procedure, generated data procedures and data analysis mechanisms to interpretation of research credibility and trustworthiness to discussion around research ethics which have been outlined in this study.

CHAPTER FOUR

PRESENTATION OF FINDINGS

4.1 Overview

This chapter is a presentation of the findings as gathered during the research process and in line with the following research objectives:

i. To explore the performance of production units in Kalomo District

ii. To describe management practices of production units prevailing in Zambian schools of Kalomo District.

iii. To explore factors affecting management, performance and sustainability of production units in Kalomo District.

iv. To design a sustainability framework for improving performance of production units of schools in Kalomo District.

4.2 Characteristics of Production Units in Kalomo District

Figure 4.1. Level of School.

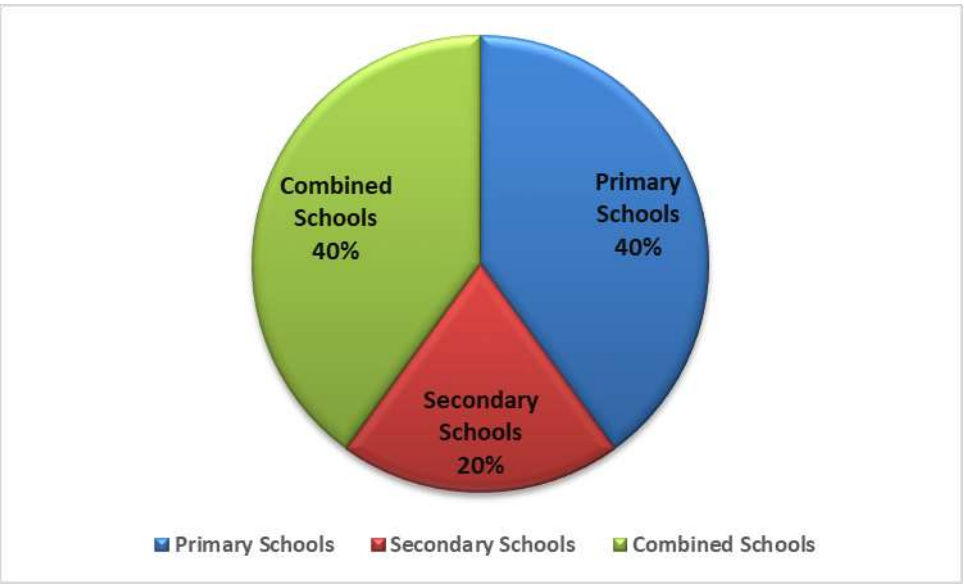


Figure 4.1. shows the levels of school involved in the study. The majority of 40% were combined schools and primary schools (40%) while the rest were secondary schools at 20%.

Figure 4.2: Level of Setting of Schools

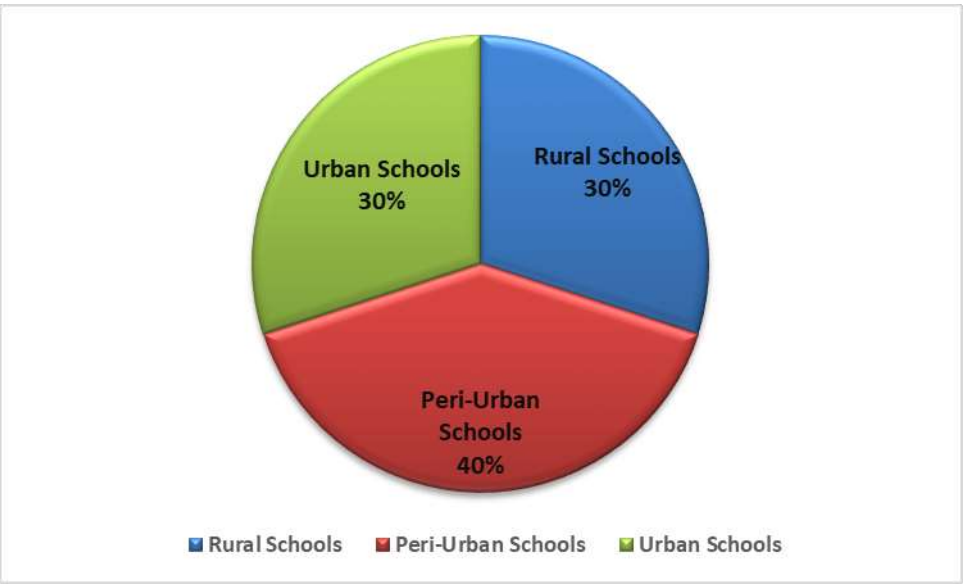
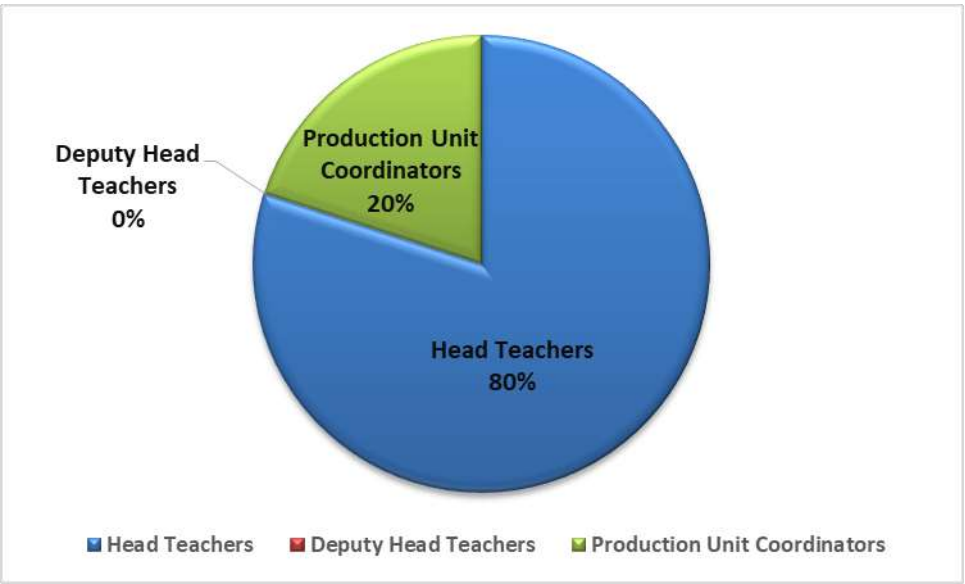


Figure 4.2. shows the levels of school settings. It was found that the majority were peri-urban schools (40%) while the others were urban schools (30%) and rural schools (30%).

Figure 4.3: Roles of the Respondents in the School



In terms of the roles of the respondents at their respective schools, table 4.3. shows that the majority (80%) were head teachers while the rest were production unit coordinators (20%).

Figure 4.4: How long the production unit been in operation at the school

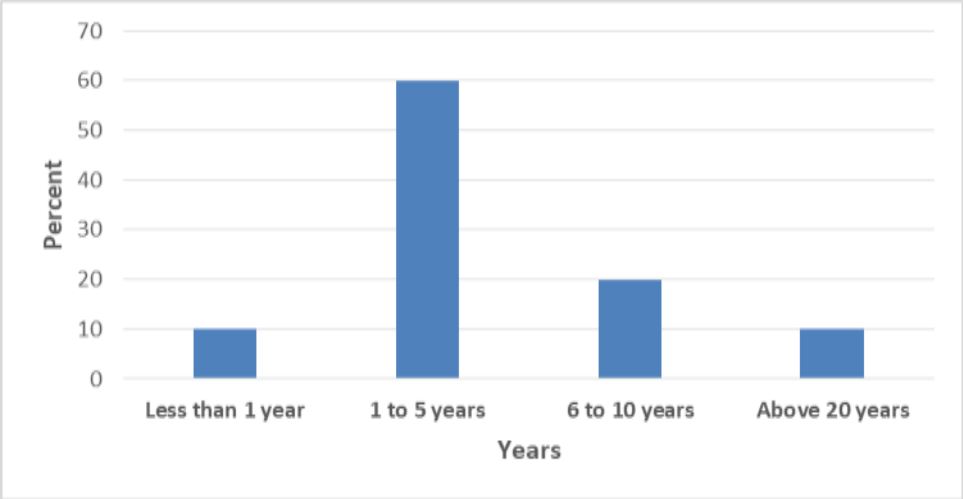


Figure 4.4. shows how long the production units have been in operation. It was found that the majority of 60% had been in operation for 1 to 5 years. Others had been in operation for 6 to 10 years (20%) and above 20 years (10%) and less than 1 year (10%).

Table 4.1. Activities and categories of production unit are run by the schools

Type of Farming	Frequency	Percent
Cereals	3	10
Orchard	3	10
Gardens	6	20
Poultry	4	13
Animal Husbandry	9	30
Aquaculture	5	17
Total	30	100

Table 4.1. shows the activities and categories of production unit that are run by the schools in Kalomo. In this regard, the majority were involved in animal husbandry (30%) and gardening (20%). Others were involved in aquaculture (17%) and poultry (13%). There was also involvement in farming of cereal crops (10%) and orchards (10%). In terms of land allocated for production unit, the study found that there were variations from very small areas of 30 X 50 meters to or Lima equivalent, with others measuring in acres with the largest being 5 hectares.

Figure 4.5: Categories and Number of Workers at the Production Unit

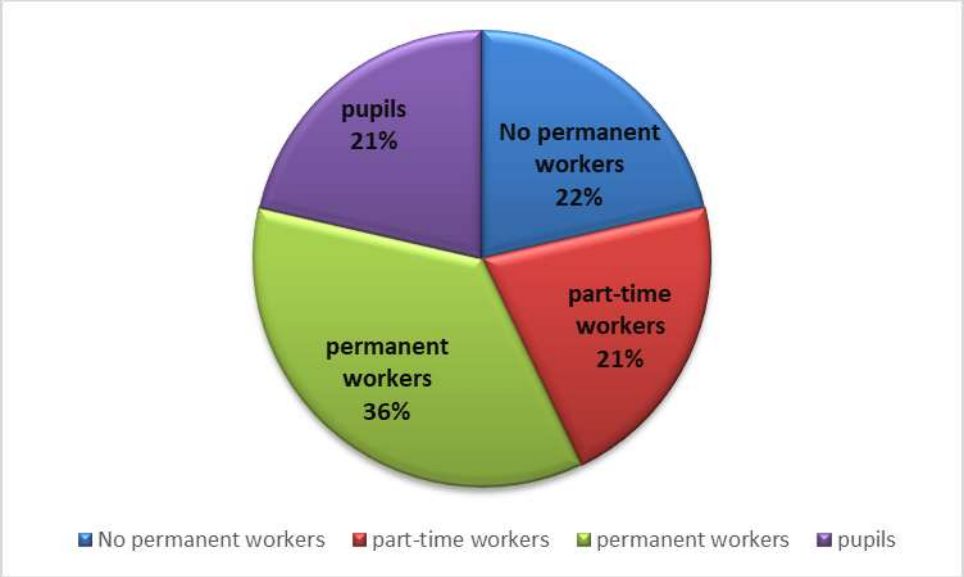


Figure 4.5. shows how many workers are employed at the production units in the categories of permanent and part-time, considering also those engaging learners in PU.

It was found that 36% were permanent workers; 22% were not permanent workers while 21% employed part-time workers. Pupils involvement was established at 21%.

4.3 Performance of production units in Kalomo District

The first objective of the study was to explore the performance of production units in Kalomo District.

Figure 4.6: Performance of production units in Kalomo District

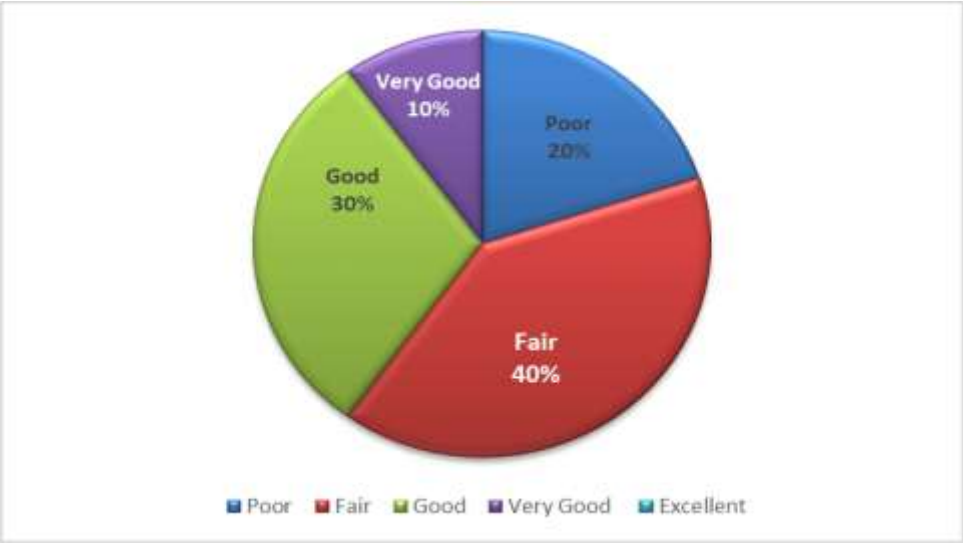


Figure 4.6. shows the findings in percentage of the performance of the production units in Kalomo District. The majority considered that their school's PU was performing fairly (40%) while others considered it good (30%). Further analysis revealed that the good performing PUs were the ones operating tuck shops while the rest fell in the categories of other activities. Those whose PUs were poor performing made up 20% and 10% with very good performance. Poor PU performance was attributed to lack of funding, water problems, diseases and animal invasion, marketing, declining capacity and competition from enterprises already in agriculture. Those performing fairly indicated slow growth with potential for better results. All the respondents indicated that despite their PUs levels of performance, they were profitable ventures capable of supporting school activities such as procuring teaching and learning materials. The profits were also found useful for sustaining the PU staff; and selling to the boarding schools.

In terms of management structures of the PUs for management purposes, it was found that there was a Chairperson, PU Committee; and pupil representatives. The Deputy Head Teacher works as the Chairperson assisted by the teacher of Agricultural Science (not in all cases). The PU Committee is spearheaded by the PU Chairperson; in other schools by a Senior Teacher or some other specialized officer such as Teacher. But the general overseer to whom activities are reported, is the head teacher. Each school had a PU Coordinator whose responsibility it is to oversee the operations of the program. This officer is selected from among the teachers and must have an agricultural/entrepreneurship orientation.

It was found that the PUs were managed well through committees of which the Head Teacher was overall supervisor, seconded by the Deputy Head Teacher. The Committee officers were the Chairperson, Vice Chair Persons, Secretary Treasurer and Committee Members. The PU prefect was included on the committee. The entire PU Committee is in charge and reports to the school administration. The accounts department looks after the finances of PU. The school has a finance committee which checks on financial reports and gives advice.

4.4 Emerging Themes Regarding Production Unit Performance

A number of themes emerged from the study regarding the performance of PUs in Kalomo District.

Table 4.2: Summary of the Major Themes of Production Unit Performance

PUs were in place and performing at less than their capacity
PU performance was inhibited by lack of resources, animal diseases, poor marketing, competition from commercial agriculture
School managers had capacity to improve PU performance
PU was profitable enough to support PU and school activities such as boarding school feeding
PU had management structure

Table 4.2. shows the major themes regarding the performance of PU. There was consensus among the respondents that the schools in Kalomo District had operational PUs whose levels of performance varied. Among the schools that had successful PU projects, one respondent from school KDS4 reported that:

> *"Our most successful programme has been the tuck-shop which is now purely run as part of PU. The intention was to roll over the funds from the tuck-shop to other agricultural PU activities, but so far, it is sufficient within the school's capacity under the current arrangement."*

At respondent at school KDS7 illustrated how the PU was performing poorly:

> *"Indeed we have an operational PU for many years before I joined this school. Its performance has remained stagnated as we have tried poultry, goat rearing and recently, fish farming which has not taken off. Largely, the PU is on and off depending on availability of resources."*

PU performance was inhibited by various challenges

The study established that the current low performance of PUs among schools in Kalomo District was not wholly attributable to school management but that there were other constraining factors. In this regard, KDS5 Head Teacher said that:

> *"You see…one may be a good administrator and capable of managing this PU in an effective manner. However, if there are no resources to improve the production, then it will remain small like this. The school PU has no capacity to fight some of the diseases that affect the animals. Marketing is equally a challenge as our core business is academics and we do not have specialized staff in PU."*

In the same vein, the respondent from KDS1 stated that:

> *"The performance of the school PU is good, thanks to our dedicated team of PU Committee and teachers who are actively involved with the pupils at the fields. We have been able to have a reasonable harvest and hope to increase by acquiring more traditional land…"*

The school head teachers in the study claimed that they had capacity to improve PU performance at their schools. In this regard, KDS2 said that:

> *"The head teacher is a cardinal component of the performance of PU. Once the head stops paying attention to PU…..and you see….different heads have different priorities; then the project will underperform or even die off. So it is still about the leadership and commitment of the head teacher that any PU would thrive."*

On the other hand, KDS10 noted that:

> *"Every head teacher has capacity to improve the performance of their school's PU. With or without initial resources, the head teacher can mobilize finances, people, land and other resources to improve the performance of PU. Here we did not wait for any funding from government but engaged the local community through the PTA and we are doing fine."*

It was found that PU was profitable enough to support the school. The head teachers in the study indicated how PU was able to support school activities. The response from KDS7 was that:

> *"The fact that the PU is still running entails its profitability. We have not used any other school resources to beef-up the PU. It has been self-sustaining and profitable. We can now support the feeding of our students from the PU and also supply the close community with our products."*

The PUs in Kalomo District were found to be operating in a structured manner which was essential for their performance. KDS7 reported that:

> *"Our PU performs well because there is no interference from management. There is a separate PU Committee; PU staff and representation from the teachers, pupils and PTA. A teacher of Agricultural Science is assigned to input on the agricultural aspect while a teacher of Business Studies is part of the business aspect of PU. The head teacher is the overseer of all the school projects while the deputy head teacher takes care of the operational aspects, including PU"*

4.5 Management Practices of Production Units

The second research objective was to describe the management practices of production units prevailing in Zambian schools of Kalomo District. In terms of stakeholder involvement, in this regard, the respondents indicated how each management official was involved in PU at their school.

Table 4.3: Major Themes of Management Practices of Production Units

Management Practices of Production Units
School Administrators were Involved in Planning, Monitoring and Supervision of Production Unit
Teachers were involved in the supervision of learners at Production Unit
Learners were involved in Production Unit as extra-curricular activity
Production Unit Committees were involved in the management of Production Unit
Full-time/Part-time workers were involved in Production Unit
There were other Stakeholders Involved in Production Unit

Table 4.3. is a presentation of the major themes regarding how management of PU was practiced by various stakeholders at schools within Kalomo District. It shows that the major stakeholders affecting the management of PU were the school administrators, teachers, learners, PU committees, PU workers and others.

School Administrators' Involvement in Production Unit

For the purposes of this study, administrators included the Head Teacher, Deputy Head Teacher, and PU Coordinators. The administrators were involved in monitoring and supervision of the PU activities. While the other stakeholders are important, school administrators have the final say on strategic matters and on the purchase of capital equipment and inputs. They play an advisory role and obtain reports from the PU Committee, the PU Coordinator and teachers, depending on the matters at hand. Administrators were the school's link to, policy makers and were essential for policy implementation and direction.

In relation to these findings, the respondents indicated various areas of managerial practice at the level of the school administration:

KDS3 said that:

> *"As Head Teacher of the school, every Monday, I receive a report of the activities that have taken place at the PU through the coordinator (PU) or the Deputy Head Teacher. I make decisions with them or give direction of what should be done depending on the report….I may also give them information that I have obtained from other units in the school that concern the PU; for example the boarding section may have sent a requisition for chickens to feed the pupils. "*

KDS7 said that:

> *"PU is one of my major areas of interest which I am constantly monitoring in terms of how it is progressing. Myself and the Deputy have not left PU to be run entirely by the teachers. We are often on site to see what is going on and ensure every resource is accounted for and challenges are mitigated in a timely manner."*

According to KDS1

> *"The PU projects are run by the Committee under supervision of school management. The administration provides advise and financial support. We are currently facing financial challenges as a school and so activities under PU are quiet minimal so not much managerial activities are being done in that regard. There has not been a PU Committee this year."*

Teachers' Involvement in Production Unit

Teachers were considered direct facilitators of PU activities in the school as they worked to directly supervise pupils 'hands on' as they did their assigned PU duties, usually according to class on specific days. Teachers were assigned on a weekly rota basis to supervise pupils during PU. The teachers do not directly supervise the PU workers but work hand-in-hand to place the learners on duty.

Regarding the teachers' involvement in PU KDS2 indicated that:

> *"The teachers are the ones who work closely with the learners at the PU. They supervise the gardening (farming) activities to ensure the activities of preparing the land, planting, weeding, watering and even harvesting are done in the appropriate way. They do this as part of their allocated duty….although I consider it voluntary."*

Learners' Involvement in Production Unit

All pupils were directly involved in PU activities as part of their regular extra-curricular activities. In special circumstances, the PU was used for teaching purposes in subjects such as Agricultural Science and Design and Technology. Learners have a timetable when they should go and attend to PU activities outside their normal learning time. Learners participate through students Leadership representation. Prefects supervise fellow pupils. Apart from doing the actual work, pupils also do sales.

KDS6 said that:

> *"The learners are our greatest human resource to work at the various PU stations. They provide instant cost-free labour. So we make them develop a high sense of ownership of the PU activities. There are prefects allocated to PU. Among*

themselves, they have created leadership structures with assignment to specific areas of operation. There are learners specifically in charge of cleaning the animal shelters; feeding them; watering the gardens and other areas. Our learners like what they do at PU and we allow them to develop those skills under our supervision."

Production Unit Committee Involvement in Production Unit

The management of PU was also done through the PU Committees composed of teachers, Prefects, pupils, and a PTA representative. The committee is fully involved in the management of all the projects at the school and are accountable to the school administration. The school administration obtains recommendations from the Committee and helps in better supervision of PU works, marketing produce and networking with other external stakeholders.

According to KDS8:

"The PU Chairperson oversees the operations of PU and chairs meetings and gives reports to the administration. The secretary writes reports and keeps physical records. The accounts officer compiles and keeps financial records. The administration supervises and received reports and presents them to the Board. The Coordinator works with other teachers and stakeholders in seeing that work goes on and sales are done. The PU treasurer keeps records of the incomes and expenses."

Workers Involvement in Production Unit

The study found that schools employed either full time or part-time staff. In other cases, they relied on the learners. The roles of the workers varied according to the type of PU running at the school. Their responsibilities included handling cash sales, accounting, purchasing of materials and implements. Where the PU was a tuckshop, the Coordinator was responsible for purchases but worked with the sales person to do the physical orders. The welfare of the animals and birds under PU was the responsibility of the PU Coordinator working with the personnel at the location. The workers were responsible for feeding, cleaning, planting, weeding, fumigating, grazing and other general duties related to the PU activities at the school.

According to KDS9:

> *"Here, the PU is the tuck-shop. This is run and managed by a Committee of teachers. Previously we used to involve learners in selling at the tuck-shop until the PTA removed the practice. But we have a prefect in charge of tuck-shop to ensure the needs of the learners in terms of goods sold and prices are well catered for. The funds raised from the tuck-shop are channeled into the mainstream school accounts and managed from there."*

Other Stakeholders Involved in Production Unit

Other stake holders give financial and material support. Parents, through the PTA Executive Committee participate in the school PU committee. The PUs receive professional support from agricultural staff and parents. The PTA Committee also helps in providing animal power and manure.

4.6 Factors affecting management, performance and sustainability of production units in Kalomo District

The third objective of the study was to explore the factors affecting management, performance and sustainability of production units in Kalomo District. It was found that the key factors were related to the application of resources to PU; Level of strategic planning; level of PU management independence from the school; level of support from the DEBS; challenges and opportunities of running PU at school level; type of PU and the status of PU at school level.

4.6.1 Application of Resources to Production Unit

The study investigates what resources were applied to the school production unit and how they were sourced. It was found that the type of resources applied to PU were also related to kind of activity the school engaged in. Those involved in poultry farming needed chemicals for treating the chickens while those involved in farming needed chemicals such as fertilizers for their crops. Funding was a major factor in the purchase of PU requirements such as seeds, fertilizers, vet medicines and other implements.

It was found that financial resources were initially sourced by the school with the involvement of the PU Committee. Where the PU was operational, financial and material

resources were also secured from the proceeds of the PU activities. Usually, the fund would be rolled out as a revolving fund before the PU becomes profitable and capable on its own.

PU infrastructure was mainly constructed with the involvement of both schools and the community. Not all resources were found to be requiring money. The study found that the local materials were also applied to PU. For example cow dung could be used to fertilize the soil. Learners were a large proportion of cost-free labour employed in PU. It was also found that not all PUs were self-sustained. In certain cases, the school budget incorporated fresh funding for poorly performing PUs. Such finances were obtained from the school fees paid for learners.

4.6.2 Strategic Planning for Production Unit

The study found that PU management in most schools was considered strategically at managerial level. There were indications that certain PU activities would be undertaken in the near future. For example, one of the respondents stated that

The plan is to develop a piggery and a school garden once water is provided, this will include the fish pond to support children in school feeding program. To do animal husbandry through keeping of goats because others are seasonal. It was found that the schools focused on various other activities such as erecting of a submissive pump for continuous production of seasonal crops; develop a robust agro-business in the near future; to diversify into aquatic business; acquire more land for PU; increase the variety of crops and livestock; and to enhance maize production.

4.6.3 Independence of the Production Unit

The level of independence in the management of PU was assessed by whether schools had employed staff specifically working at the PU.

Figure 4.7: Independence of the Production Unit

Figure 4.7. shows that 70% of the schools did not have independent staff working at the PU. The 30% who had their own independent PU staff indicated that these were employed to professionally oversee the operation of the production unit and plan the activities to be carried out. Where the PU was still operating at a very small scale, there was no need for employing independent staff at PU. Instead, teachers with interest or those teaching Agricultural Science were involved. The Head Teacher took the role of overseer while teachers worked hand-in-hand to ensure learners were involved in working at the PU.

4.6.4 Support from the DEBS Office

The study found that the schools were obtaining support from the DEBS in form of guidelines on how to start and run a PU programme; monitoring and capacity building programmes; how to run a profitable PU; motivation to engage in PU; ensuring compliance with government policy on PU; other advise and sensitization on the importance of PU.

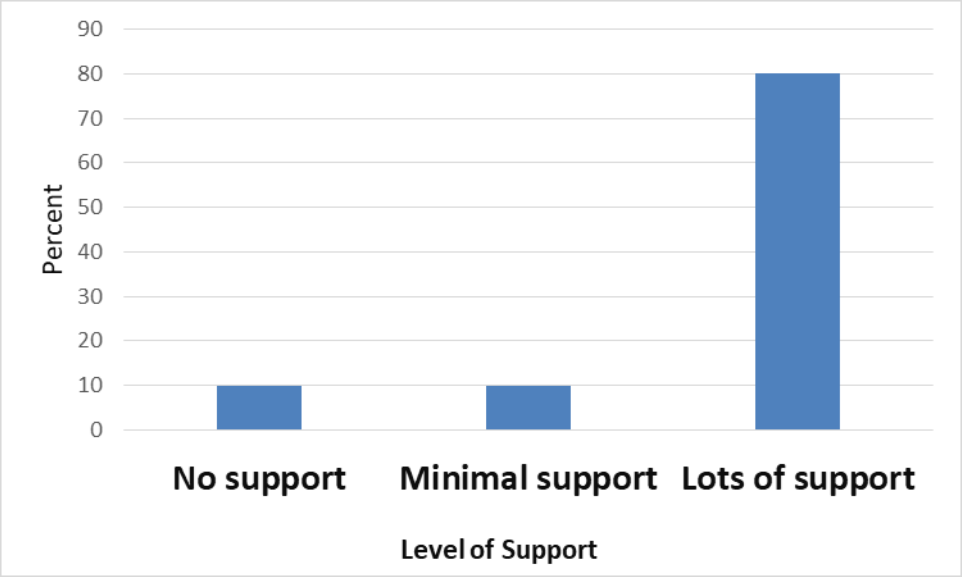


Figure 4.8: Level of Support from DEBS

Figure 4.8. shows that the majority of respondents (80%) claimed that their school received lots of support from DEBS regarding PU, while the minority either received minimal support (10%) or no support at all (10%).

4.6.5 Managerial Challenges and Opportunities

The study found that running PU at school level had challenges and opportunities.

Challenges	Percent	Data Bar
Lack of training	50	5
Inadequate financing	50	5
Inadequate water supply	30	3
Inadequate land	20	2
No full time trained farm manager	20	2
Inadequate time for PU activities	10	1

Figure 4.9: Challenges

In terms of challenges, figure 4.9. shows that the most significant were lack of training (50%) and inadequate financing (50%). Of concern was the inadequacy in water supply (30%). Other schools had inadequate land (20%) and no full time trained farm managers (20%). Other schools did not have adequate time allocated for PU activities.

Opportunities	Percent	Data Bar
Readily available pupils' labour	70	7
Readily available market	60	6
Supportive and zealous staff	50	5
Near to town	40	4
Ready availability of farm workers	30	3
Trained teachers of BS and AS	30	3
Sufficient traditional land	30	3

Figure 4.10: Opportunities

According to figure 4.10. the major opportunities with regards to PU were the availability of labour through learners (70%); a readily available market (60%) and supportive school staff (50%). Additionally, schools were advantaged by being closer to town (40%). Other opportunities were the availability of farm workers (30%); having trained teachers of Business Studies and Agricultural Science (30%) and sufficient school or traditional land (30%)

4.6.6 Status of Production Unit

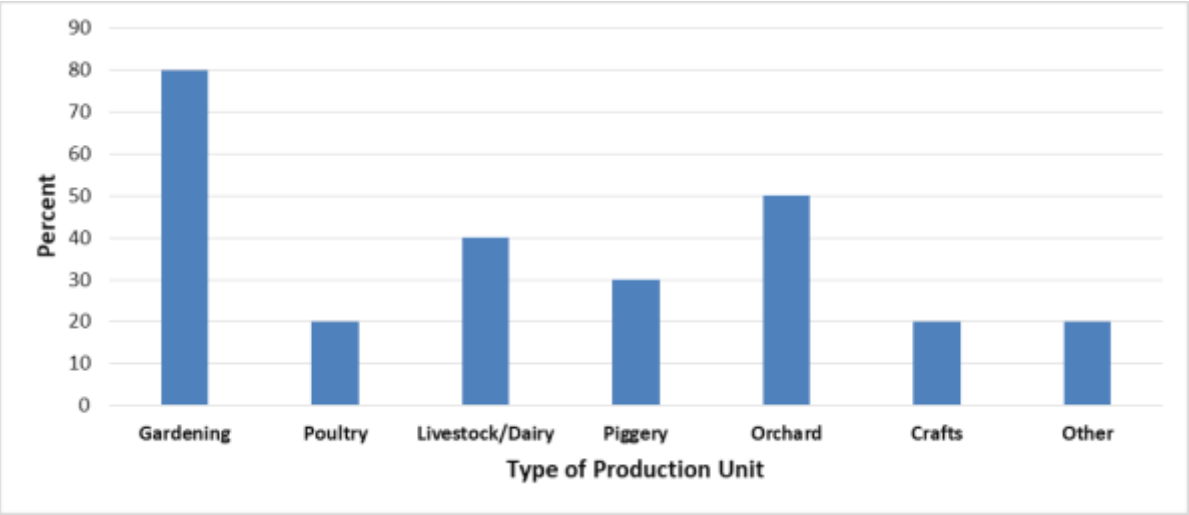


Figure 4.11: Status of Production Unit

Figure 4.11 shows the aggregated statuses of PU at the schools in the study. It was found that gardening was the most active at 80%; followed by orchards (50%) and livestock (40%). In lesser cases, schools had active piggery (30%); crafts (20%) poultry (20%) and other activities (20%).

4.7 Sustainability framework for improving performance of production units schools in Kalomo District.

Despite the challenges faced, all the respondents (100%) affirmed that PU was a viable venture. To make PU more sustainable, the respondents made suggestions from which a framework for improving PU performance was derived.

Recommendations	Percent	Data Bar
Incorporate PU in supporting school activities	88	
Plough back profits into the PU	83	
Run PU on longterm sustainable basis	83	
Focus PU on imparting life skills in learners	83	
Develop a monitoring system of the PU activities	82	
Improve water reticulation for PU activities	80	
Involve the local community in PU	79	
Conduct market research on PU marketing	77	
Obtain funding focused on improving PU	74	
Diversifying to other fields apart from agriculture	72	
Engage other stakeholders outside the school to support PU	69	
Employ special clubs and interest groups in PU	64	
Secure more land for PU expansion	55	
Get into partnership with other organisations	47	
Capacity Building programmes	27	

Figure 4.12: Sustainability Framework for Improving the Performance of Production Unit

Basing on the recommendations from the respondents, figure 4.12 shows the framework within which PU can be structured so as to improve its operations. In this regard, it would be appropriate to incorporate PU in supporting school activities such as buying teaching and learning materials (88%). This was further affirmed by KDS9 who indicated that such a move would allow for PU funds to help with major events in the school such us sports and use PU proceeds to support other aspects of the school which is the multiplicity effect. There was strong indication by 83% of the respondents to plough back profits into the PU. By 83% of responses, it was suggested that PU Committees would undertake long term planning for sustainable, and focus PU on imparting life skills in learners (83%). It was further established that an appropriate PU model would incorporate a monitoring system (82%); improved water reticulation system (80%); and involvement of the local community (79%).

The study found that the respondents believed that to be sustainable, the PU should engage in market research (77%); obtaining financing (74%); diversification into non-agricultural

activities (72%); and engage private stakeholders (69%). Other views for improving PU performance focused on reviving special clubs and interest groups (64%); procure land for Pu expansion (55%). Fewer of the respondents were specific on partnering with other organizations such as NGOs (47%) and conducting capacity building programs for PU (27%).

CHAPTER FIVE

DISCUSSION OF FINDINGS

5.1 Overview

This chapter is discussion of the findings based on the presentation in Chapter Four and in order of the research objectives. The discussion brings out the key findings and establishes the implications for the study and in practice. The findings are compared with earlier studies to account for similarities and differences. The discussions further amplify the findings to show how the research question has been appropriately addressed.

5.2 Performance of Production Units in Kalomo District

The first objective of the study was to explore the performance of production units in Kalomo District. This was reportedly fair and good. Performance in this context was considered as defined by Bhasin, (2021) that it is the actual output of an activity measured against the output intended over a period of time; that is, what an organization is able to accomplish with the assigned resources and interaction with its various constituencies. The PUs in the study had the appropriate management structures consisting of the Head Teacher, the Deputy Head Teacher; the PU Committee, the PU Coordinator and a teacher of Agricultural Science or Business Studies (in certain cases only). It was found that the Deputy Head Teacher and PU Chairpersons were actively involved in the operations of the PU with the Head Teachers taking up more strategic roles. This finding is in harmony with research and practice whereby it has been established that the Head Teacher and the entire administration team are responsible for the success of all school activities. This was noted in the study by Etsey, (2005) who found that unless the school principal acted to manage the school with appropriate leadership in all areas, other areas may suffer. The principal should pay attention to all curricular and co-curricular areas to ensure they thrive.

The general performance of the PUs in Kalomo district were reported to be organized in terms of management structures. It was found that management was cardinal for effective performance of the PU at any of the schools. Up to 70 per cent of the PUs in the district indicated a level of good performance, especially those that had assigned their tuck shops under PU. It was within this context that the Head Teacher for KDS9 said that: *"There is a separate but linked management team in charge of PU. We do not have to interfere with their operations at all"*

Whatever the level of performance, it was found that the PUs were making progress despite the challenges of resources and operation. All the PUs indicated strong potential for profitability if left to operate on strict business terms. This finding is similar in approach to Chukwu, et al, (2019) who found that PUs could not be effective unless they were a significant contributor to the school under specialized management. Thus school activities such as poultry, fishery, clothing, textiles, catering, feed production, leather manufacturing, equipment repair and maintenance and crafts, among others were also attached to PU. Thus KDS1 said: *"With experts managing PU we can venture into many more spheres of operation…..I think what constraints us is the lack of specialized staff at PU."*

It was found that the PUs were managed well through committees of which the Head Teacher was overall supervisor, seconded by the Deputy Head Teacher. The Committee officers were the Chairperson, Vice Chair Persons, Secretary Treasurer and Committee Members. The PU prefect was included on the committee. The entire PU Committee is in charge and reports to the school administration. The accounts department looks after the finances of PU. The school has finance committee which checks on financial reports and advises. While the current study found that the schools in Kalomo had the appropriate management structures for effective performance of PU, a study by Galeh, Putra and Moch, (2018) found that management structure challenges impeded the performance of PUs. The study found that there were weaknesses of managerial planning, monotony, overlaps in job descriptions, supervisions not running maximal. The study found that there was no PU management model for schools. PU was mainly used as source of learning and alternative funding; thus did not have room to expand. In this regard KDS4 said: *"We have not delinked PU from the mainstream academic system. So learners and teachers think of it more as meant for Agricultural Science pupils and teachers….they see less economic value in PU."* Although the schools in the study agreed that the model component was complete, clear and feasible, its effective implementation had not been achieved.

The findings of this study that most PUs in Kalomo District were performing positively but on a small scale resonate with Kaluba, (2020) who found that since 1975, school PUs have not broken through to become influential contributors to educational income comparable to school fees and other contributions to the schools. PU has remained much a part of school regular activities involving crop farming and livestock. The schools still lack the advanced equipment; managerial capacity; access to finances and expert methods of production and

business. Although recent years have seen a resumption in PU activity, the total and aggregate value of goods being produced remains low.

5.3 Management Practices of Production Units

The second research objective was to describe the management practices of production units prevailing in Zambian schools of Kalomo District. The study established that management of PU was through various stakeholders undertaking specific roles. The school administrators (Head Teachers, Deputy Head Teachers and PU Coordinators) were involved in the strategic and operational managerial activities. This implies that they were concerned with establishing the long term progression of the PU and implementation of the PU activities at the school. Managerial roles include planning, organizing, leading and coordinating the activities and resources of the institution. It is within this framework that they made decisions regarding purchase of capital items and undertook monitoring and supervision roles. However, one of the administrators at KDS3 commented that *"Planning for PU is difficult now that the school has limited resources. So we assign teachers there but little is done to sponsor PU activities continuously."*

The study found that management of PU involved teachers working under the supervision of the Deputy head Teachers and in collaboration with the PU Coordinators to supervise learners at assigned portions according to a weekly rota. Learners were directly involved in PU as a part of their extra-curricular activities and also for academic purposes (for learners taking Agricultural Science and Design and Technology). In most cases, learners did PU after class or when specifically assigned and supervised by prefects. The schools in Kalomo were found to be operating PU under PU Committees composed of teachers, Prefects, pupils, and a PTA representative.

According to KDS7 "*The PU Committees were put in place to oversee the operations of the PU, plan the operations in line with the school's strategic PU plan, make recommendations to school administration on how best to execute PU functions and to ensure that the produce was marketed and sold."* For convenience of management, the Deputy Head Teachers were assigned to chair the PU Committees. The operations level of PU management included PU workers. These varied from farm workers to tuckshop sales personnel, depending on the type of PU. Some schools had full-time staff while others had part-time workers. Other schools did not have workers but relied on the PU Committee, teachers and pupils. The roles of the

workers included farming crops; taking care of the PU facilities; raising animals; sales; purchases and any other general duties as assigned by management. The study found that there were other people involved in running the PUs including parents, community members, PTAs, business and agricultural experts; government officials and well-wishers.

The current study considered management practices according to the types of stakeholders involved. In a different study Martoki, (2012) found some general weaknesses in PU management practices that not all schools had adequate building facilities to be used as production unit offices. The production unit planning was found monotonous. This means that the production unit was only seen as a place for the practice of students. The school was still overlapping. Many schools had members of production unit organization who were still holding positions in other organizations and at the school. Thus, the school members were not entirely focused on PU work. In addition, schools members in PU were not experts in the field. This resulted in a lack of PU development because the manager was not competent in their field, the organization of PUs in some schools was only a formality for the purposes of school accreditation so that there was no real form of PU organizational structure.

5.4 Factors Affecting Management, Performance and Sustainability of Production Units in Kalomo District

The third objective of the study was to explore the factors affecting management, performance and sustainability of production units in Kalomo District. In an organized system, Sinclair (2012) submits that it would be expected that the operations would be done in a systematic manner according to best practices in management and that the activities would be sustainable rather than be found to fail and close down. This would indeed be expected of the PUs at school level. However, previous studies have shown that PU in Zambia has been constrained in terms of performance and sustainability such that there has not been significant growth and certain schools had stopped operating any sustainable PU activities (Mulenga, 2006). In the case of Kalomo District PUs the factors that had a direct relationship with management were resources, strategic planning, PU management independence from the school; support from the DEBS; challenges and opportunities of running PU at school level; type of PU and the status of PU at school level.

The factors of management of PU can be discussed in terms of the managerial functions of resource allocation and planning. These factors fall within the main framework of school

managerial functions of planning, organizing, leading, coordinating, leading and motivation (Bailey, 2019). It was found that the PU management factors of resource allocation and planning were cardinal. This was done according to the type of PU which required management to obtain the actual resources such as chemicals and implements in farming. The major resources was financing of which most PUs were meant to raise money for the school activities rather than to sustain their own operations. In this regard, KDS5 said: *"A set amount was let to revolve as PU fund just to keep the resources within the school. PU proceeds were used to purchase resources required for its continuity."* Although profitability was mentioned as a goal, there was no significant indication of ploughing back of profits to grow the PU. Physical resources were readily available in terms of school land, except in situations where the schools were running PUs requiring extensive land such as farming. Financial resources for PU were also assigned from the school fees collected.

Planning was found to be a significant managerial factor in the management of PU in Kalomo District. Schools indicated that they had plans of expanding their PU to large scale operations, especially in agricultural activities such as animal keeping, poultry, and crop farming. There were also plans of improving infrastructure such as water reticulation, land improvement, diversification of activities and enhance production. Despite such orientation, there was not one school with a PU strategic plan or business plan. Some of the plans had been mentioned without reference to time frame of actualization or any resources being channeled to achieve the plans.

Performance of PU as conceived for this study meant to establish how well the schools were doing in terms of achieving the goals of this sector of the school. In any organization, the most essential factors affecting organizational performance are Leadership, Motivation, Organizational Culture and Knowledge Management (Murthy, 2015).

The study established that all schools had a management structure in place from which leadership would ensue to make sure that the school Head Teacher can work with the management team to influence others to achieve the PU goals and direct the school towards working on PU projects with motivation and consistency. The study found that the majority of schools did not have an independent PU staff. The aspect of leadership was not strongly positive in the performance of the PU as the respondents did not indicate how stakeholders were brought together in harmony. Thus most PUs were still very small scale and detached from the mainstream activities, leaving teachers and other people with interest to work alone.

The Head Teachers were overseers requiring other staff to work at the PU by assignment. This aspect of leadership was positively identified in a study by Mwiinga, (2016) that the leadership style employed by the head teacher had implications for school climate. In essence, the head teacher's leadership behavior for example, his/her expectations, values, beliefs, relationships with teachers and the examples he/she set for the whole school shaped the climate in the school. In view of this, the need for head teachers to be well informed to use their leadership styles to create and improve school climate could not be over emphasized.

Motivational factors such as salaries, working conditions, strategy, competence and sense of belonging were not evidenced from the study. It was found that PUs were operated under a system of structures that had top officials, teachers, workers and learners. There was no strong indication that the PU stakeholders were taking their roles with significant motivation, except that they were assigned to perform certain tasks. Going by the factors of organizational culture, Mulunga, (2012) has established that there has been negative beliefs, values and practices relating to the operation of PUs in Zambia. Similarly, the current study did not establish positive culture as most PUs were not well assimilated into the operations of the school and did not stand out as major activities of a sustainable nature. Knowledge management was significant only as far as the office of the DEBS Kalomo provided guidelines on how best to run PU, monitored the activities and undertook capacity building. The DEBS further motivated head teachers to ensure compliance with government policy and focus on revamping PU around the country. However, the level of actualizing the support was lower as most schools were trailing in terms of having sustainable PUs.

The study undertook to establish whether the operations of the PUs in Kalomo district were sustainable. Sustainability is the concept that an activity will proceed with its operations into the foreseeable future and that the resources applied to the venture today will be sufficient to make future operations profitable (Simons, 2020). It is argued that simply having an activity going on in operation does not make it sustainable. It may be a burden to the organization, drawing upon the resources of other units to support unsustainable operations (Best, 2015). The current study found that achieving sustainability of PU was constrained by various factors while other factors provided opportunities that would make for sustainability. Among the constraining factors were the lack of human resource training; inadequate funding; poor water supply; inadequate land; lack of trained PU managers and inadequate time for PU

activities. On the other hand, it was found that PU activities in schools had potential to continue in operation since they had readily available labour in pupils and a readily available market. There was opportunity for schools in Kalomo to have supportive school staff; cheap labour of farm workers; trained teachers of Business Studies and Agricultural Science and sufficient access to large traditional land. The study found that the most sustainable PU activities in Kalomo district were gardening; fruit orchards and livestock. All the respondents indicated that PU would be a sustainable venture if properly managed. Similar challenges have been established in earlier studies. For example Chukwu, et al, (2019) found that PU was largely constrained by lack of organizational vision for productivity; poor perception of school production units; lack of manpower to drive the establishment and perceived problems of integrating industries and entrepreneurship in school programmes.

The factors of sustainability as established in the current study are similar to what Hang'andu, (2016) found in their particular dimensions. It was found that there was low participation by influential political and business people within the communities who did not sit on the PU Committees. Most schools had poor water supply; no electricity; poor financing and experienced constant theft both internally and externally. This was stressed by KDS1: *"Managing the products, especially during the ripening stage, has been a challenge. Losses are made through theft, poor storage, low prices, failure by teachers to pay for the products, hand-outs to visiting educational officials and inexperience in selling the type of produce. "*It was found that the proceeds of PU were mainly channeled to other school needs, requiring schools to start over every year from school fees. Farming was considered the most sustainable type of PU.

5.5 Sustainability Framework for Improving Performance of Production Units Schools in Kalomo District.

The fourth research objective was to design a sustainability framework for improving performance of production units of schools in Kalomo District. The need to improve PU and make it more sustainable was strongly established in the current study. Earlier studies have attempted to come up with a sustainable framework for running PU. Despite the challenges, the study showed potential that much can be achieved by integrating PU into the mainstream educational framework. Some of the major inclusions proposed included making PU more profitable; focus on improving managerial performance; extend stakeholder participation; improve PU infrastructure; pool more resources into PU; research into new areas of PU;

extension of capital infrastructure and changing the school culture towards PU sustainability with appropriate human resource training and development.

Various other researchers have recommended frameworks that may enhance PU.

NAS, (2021) recommends finance-related strategies as the basis for improving school productivity. They recommend a systematic approach to raising PU funds and applying such to specific projects until they reach a profitability threshold before applying the funds to other school needs. They recommend a shift from equity to adequacy in PU spending and strong policy framework to control and address expenditure gaps that impede PU productivity.

Zamzam, (2012) recommends a model that would reshape and strengthen school PU based on policy direction considerate of the needs and resources available to each school.

Ananda and Mukhadis, (2018) developed a model of PU based on the school as an entrepreneur. The model proposes that PU be run purely as a business with the school as the major shareholders, but also allow other investors. This was based on the finding that there is a significant direct relationship between the production units as edupreneurship with entrepreneurship mindset vocational students. The students getting accustomed to working on the workpiece on the activities of the production unit indicates ability to open their own entrepreneurship after graduation.

Paradise (2012) came with the PU model of learning through action in a work-based learning environment. This action learning approach is a model of learning in which an individual with the others in a small group learn together to solve important problems, through the process and problem solving they learn to resolve existing cases.

Herry and Hendro, (2016) proposed a six step-model. At the first step, consideration is given to the examination of school resources available for PU, including financial, human, material and infrastructure. At the second stage, a SWOT analysis is conducted. Third step is establishment of the PU. Fourth stage is the strengthening of skills and knowledge to grow the PU. The fifth is the choice and launch of the products/services under PU in relation to market research and product design. The sixth step is the incorporation of sustainable partners within the ministry and other stakeholders.

KDS8 said that: *"It is a challenge to sustain because the rules for so doing aren't clear."*

CHAPTER SIX

CONCLUSION AND RECOMMENDATIONS

6.1 Conclusion

The exploration of the lived experiences of selected schools in PU within Kalomo District reveals that school head teachers and other administrators were well versed in interpreting their managerial practices in PU. In terms of performance, the head teachers were contributing at less than their capacity, evidenced by the constraints of resources, marketing, competition and animal diseases. Regardless, the head teachers had capacity to improve PU performance at their schools as this was profitable while capable of contributing to other school activities. The study affirms that there was significant involvement of various stakeholders in the management of PU, including head teachers; deputy head teachers; PU Committees; teachers; PU workers and pupil representatives. Learners continue to be a significant labour resource if well managed and engaged in direct production at PU. The findings of the study provided a firm basis for designing an appropriate PU model focused on schools mobilising resources, engaging community stakeholders; having PU as part of the mainstream school strategic plan and working with the Ministry of Education on PU.

6.2 Recommendations

i. PU should be incorporated into the mainstream strategy of the school in order to have a long-term focus and approach.

ii. The Ministry of Education should provide a structured guideline for schools to follow in the executing of PU activities.

iii. Schools should be equipped with qualified, professional staff to run PU projects at school level.

iv. The factor of profitability should be inculcated into school PU so that it can be self-sustainable in the long-run.

v. There is need to have a system of managerial continuity and accountability so that the performance of PU does not depend on the individual commitment characteristics of the head teachers but becomes part of managerial practice.

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APPENDICES

Appendix i: Research Instruments

INTERVIEW GUIDE

1.1. Interviewer	**1.2. Date……../……/……**	**1.3. Start time:……..** **1.4. Finish time:……..**
1.5. Province	**1.6. District**	**1.7. School**
1.8. Setting **i. Rural** ☐ **ii. Peri-Urban** ☐ **iii. Urban** ☐		

Number of Participants			
Participant Group	**Male**	**Female**	**Total**
i. Head Teachers			
ii. Deputy Head Teachers			
iii. PU Coordinator			
Total			

Introductions

This study entitled 'Exploration of Lived Experiences of Selected Schools in Production Units in Kalomo District, Southern Province, Zambia' is being undertaken under the auspices

of the University of Zambia and Zimbabwe Open University. This is one of the most credible universities in the country involved in research by students.

Recent years have seen a country-wide focus on revamping production unit activities among schools. A number of schools have come up with new projects, especially in agriculture. Recognizing that Production Unit has been part of the school system since the 1970s, this study is meant to establish evidence as to the factors affecting performance; management and sustainability in Kalomo District of Southern Province.

I am willing to take party in the study: Yes ☐ **No** ☐

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1. For how long has the production unit been in operation at this school?

2. What activities and categories of production unit are run by your school?

3. What is the size of land allocated for production unit?

4. How many workers are permanently employed and how many on part time at the production unit?

5. Give a description of the performance of production unit at your school and in Kalomo District.

6. Would you say the production unit at your school is a profitable venture?

7. What is the formal structure of your school's production unit in terms of management, supervision and accountability?

8. Explain how the school administrators, teachers, learners and other stakeholders are involved in the production unit at your school.

9. Describe the specific jobs and tasks assigned to personnel working at the production unit.

10. What resources are applied to production unit and how are these sourced and managed?

11. What is the long-term strategic plan for your production unit?

12. Is there an independent production unit management staff? If yes explain the rationale.

13. What support do you obtain from the Kalomo District DEBS Office towards production unit at your school?

14. What managerial challenges and opportunities are inherent in your school's production unit?

15. Who is ultimately answerable for the overall performance (success or failure) of the production unit?

16. Explain the performance of the production unit over the last few years.

17. What factors account for its success or failure?

18. Do you think your school's production unit is a sustainable venture?

19. Explain ways in which the proceeds of the production unit have been applied to the school.

20. What are you currently doing to help improve production unit at your school?

21. Suggest ways in which the production unit at your school can be improved.

22. Any other suggestions/ comments regarding production unit in general?

PRODUCTION UNIT OBSERVATION SHEET

1. School:_____
   _

2. **Type and Status of Production Unit at the School**

Type of Production Unit	Active*	Passive**	Non-operational*
Gardening, vegetables			
Food crops, cereals			
Poultry			

Livestock, dairy farming			
Piggery			
Orchard, fruit trees			
Tuckshop, catering, petty goods			
Handicrafts, crafts			
Other (state)			

*** Write 3 if there is full scale activity and production**

**** Write 2 if there is very little activity**

***** Write 1 if there is available infrastructure or land but not currently being utilised**

3. Land and infrastructure for production unit

Observations at the PU facility	Very Good	Fair	Not sure	Poor	Not Available
Big enough for sustainable PU					
Utilisation of PU facilities and land					
Availability of labourers on site					
Quality/suitability of PU location					
Multiple PU activities					
Electricity or other sources of power					

Water facilities					
Materials/inputs					
Outputs e.g. livestock or crop harvest					
Storage facilities					
Equipment					
PU buildings/Shelter/Workshop					
PU Office					
Learners working at the PU site					
Supervision of workers					
Systematic operation of PU					
Records system at PU and school management					
Buying and selling or deliveries at PU					
Accessibility to PU facilities					

4. Make observations concerning the PU management at the school in terms of the following managerial activities:

i. Evidence of Planning

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ii. Evidence of organising resources

---

iii. Evidence of leadership

iv. **Evidence of coordination and communication**

v. **Evidence of stakeholder motivation**

5. Observe any challenges in the way the PU is operating at the school

6. What are your general conclusions from the observations made about the PU at the school?

END OF OBSERVATION