
**FACULTY OF AGRICULTURE AND ANIMAL SCIENCES
DEPARTMENT OF CROP SCIENCES**

**EFFECT OF THE PARISH DEVELOPMENT MODEL ON CATTLE
PRODUCTIVITY AND HOUSEHOLD INCOME IN AMURIA DISTRICT, EASTERN
UGANDA**

BY

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**A RESEARCH REPORT SUBMITTED TO THE DEPARTMENT OF CROP
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UNIVERSITY**

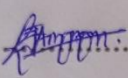
SEPTEMBER, 2026

DECLARATION

DECLARATION

I, **AUTA AMOS**, declare that this research report titled effect of parish development model on cattle production and household income in amuria district eastern Uganda is my original work and has not been submitted for any award to any University or Institute of higher learning where other sources of information have been used, they have been duly acknowledged.

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APPROVAL

SUPERVISORS APPROVAL

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Signature: Date: 04/09/2026

DEDICATION

This research work is dedicated to the Almighty God for His endless grace, wisdom, and protection throughout this academic journey.

To my beloved parents, whose sacrifices, unwavering support, and encouragement have been my greatest source of strength—your belief in the power of education inspires me every day.

To my dear family and friends, thank you for your patience, understanding, and constant motivation during the long hours of fieldwork and writing.

Finally, to the smallholder cattle farmers of Amuria District, whose resilience and dedication to livestock farming continue to build the backbone of our rural economy—this work is a testament to your struggles and aspirations.

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Busitema University

AUTA AMOS

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ABSTRACT

This study examined the effect of the Parish Development Model (PDM) on cattle production and household income of farmers in Amuria District, Eastern Uganda. Government has had various interventions to improve productivity and household income of farmers to remove them from subsistence agriculture. However some of these interventions have not had good results to remove people from poverty. The PDM was launched in 2021 but little information exists on how it has improved productivity and income of farmers. Data was collected using questionnaires where 202 PDM beneficiaries and non-beneficiaries were selected randomly in two selected Sub Counties of Amuria District. The study employed structured questionnaires incorporating Likert-scale items to measure perceptions on cattle production improvements, household income changes, and challenges faced. Quantitative data was analyzed using descriptive statistics in SPSS, Results of the study showed that PDM has positively influenced cattle productivity by improving milk yields from a mean of 32.9l/month-38.4l/month per each household and income from it by 16.6% and 136.6% respectively giving an average of UGX 27.899-65.876. Results also indicated that a live weight of cattle increment of 61.2%, was realized by farmers engaged in livestock fattening though this did not translate into improved income for them because during the time of disbursement of the PDM funds, the demand for animals increased which led to increase in the prices for buying this animals, while the selling price reduced due to increased supply of animals in the market which reduced the income status of this farmers PDM beneficiaries perceived the project to less extent as having improved livestock production and income of its farmers. The biggest challenges reported were livestock diseases through drought and water shortages and limited extension services; delayed release of funds and market access followed. District and Sub County veterinary and extension departments should prioritise PDM cattle beneficiaries for community animal health worker coverage, SACCOs and other fund managers administering the PDM cattle enterprise grant should incorporate basic enterprise recordkeeping and cost budgeting guidance, Local government departments responsible for water-for-production infrastructure should coordinate more closely with PDM cattle enterprise implementation in Amuria District, prioritizing valley tanks, boreholes and other livestock water sources in parishes with a high concentration of PDM cattle beneficiaries. Move an enterprise such as bull fattening, which has an inherently lumpy, longer-cycle return beyond incremental gains.

CHAPTER ONE: INTRODUCTION

1.1 Background of the Study

Agriculture remains a vital sector for economic growth, employment, and household livelihoods across the world. Globally, agriculture contributes approximately 4% of the world's Gross Domestic Product (GDP) and provides employment for about 27% of the global workforce, particularly in developing countries where it remains a major source of livelihoods (Bank, 2024). In Africa, agriculture contributes between 15% and 23% of GDP and employs over 50% of the labor force, making it one of the continent's largest sources of employment, food security, and household income (Bank, 2024), (Nations, 2023). In Uganda, agriculture plays an even greater role in the economy, contributing approximately 24.7% of GDP and employing about 68–70% of the population (Ministry of Agriculture, 2021); (Ministry of Finance, 2025). The 2024 National Population and Housing Census further revealed that agriculture remains the primary source of livelihood for most rural households, with about 61% engaged in crop production and 37% involved in livestock farming (Uganda Bureau of Statistics (Statistics, 2024b). These statistics demonstrate that improvements in agricultural productivity directly influence household income, food security, and poverty reduction.

To address persistent challenges of low productivity, limited access to financial services, and subsistence farming, the Government of Uganda introduced the Parish Development Model (PDM) in 2021 as a strategy for socio-economic transformation and inclusive development (Minister, 2022). The PDM operates at the parish level and aims to transition households from subsistence production to market-oriented production through financial inclusion, production support, value addition, infrastructure development, and institutional strengthening (Ministry of Finance, 2025). The model provides revolving funds through Parish Savings and Credit Cooperative Organizations (SACCOs) to enable farmers to access affordable credit for investment in crop and livestock enterprises. It also integrates agricultural extension services and local accountability mechanisms to improve service delivery and agricultural productivity.

In Amuria District, particularly in Amolo Sub-county, agriculture remains the dominant livelihood activity. Farmers in Ocor, Golokwara, parishes engage in the production of crops such as cassava, maize, sorghum, and groundnuts, alongside livestock keeping, especially cattle production. Despite the various interventions that government has implemented to improve the sector for example, NAADS, Operation Wealth Creation, Emyooga, SSAESS, the

area continues to face challenges including erratic rainfall patterns, low adoption of improved agricultural technologies, limited access to agricultural inputs, and inadequate financial services, all of which constrain agricultural productivity and household income (Ministry of Agriculture, 2021) (Statistics, 2024b).

The Teso sub-region has experienced notable changes in poverty levels over the years, although poverty remains a challenge for many households. According to the Uganda Bureau of Statistics (UBOS), the multidimensional poverty rate in Teso was estimated at 55.6% in earlier assessments, indicating that more than half of the population faced deprivations in areas such as income, education, health, housing, and access to basic services. However, findings from the 2024 National Population and Housing Census Multidimensional Poverty Index (MPI) show that poverty in the region declined significantly to approximately 22.2%, which is below the national average of 27%. Despite this improvement, many households in Teso continue to depend on subsistence agriculture and livestock production, making them vulnerable to climate change, drought, livestock diseases, low agricultural productivity, and limited access to markets and financial services.

According to (Statistics, 2024a), approximately 66.9% of Ugandan households (about 7.2 million households) were in the money economy, while 33.1% (about 3.5 million households) remained in the subsistence economy. Households in the money economy are those that can meet their basic needs through income earned from employment, business, farming, or other economic activities and still have some savings or market participation. In contrast, households in the subsistence economy mainly produce for their own consumption and have limited engagement in formal markets. These findings indicate that about two-thirds of Ugandan households are already participating in the money economy, while one-third are the primary target of government interventions such as the Parish Development Model (PDM), which seeks to transition them into commercial production and increased market participation (Uganda, 2022). These persistent challenges suggest the need for continued government interventions, such as the Parish Development Model (PDM), to enhance agricultural productivity, increase household incomes, and further reduce poverty in districts such as Amuria (Statistics, 2024b).

1.2 Statement of the Problem

Before the introduction of the Parish Development Model (PDM) in Amuria District, several government and donor-funded agricultural interventions had already been implemented to increase agricultural productivity and improve farmers' incomes. One of the major programs was Operation Wealth Creation (OWC), launched in 2014 to distribute improved seeds, planting materials, livestock, and other agricultural inputs to smallholder farmers while promoting commercialization and strengthening extension services. Another key intervention was Northern Uganda Social Action Fund III (NUSAF III) (Minister, 2019), implemented with World Bank support to enhance livelihoods through provision of productive assets, small livestock, and community-driven livelihood investment support targeting vulnerable households. Additionally, the Development Initiative for Northern Uganda (DINU), implemented between 2017 and 2023 with European Union support, promoted climate-smart agriculture, diversified crop production such as cassava, rice, and soybean, improved post-harvest handling, and strengthened market access and nutrition among over 50,000 farming households across northern and eastern Uganda (Bank, 2022). Complementary initiatives under DINU partnerships, including resilience and food security projects, further enhanced farmer group formation, Village Savings and Loan Associations (VSLAs), and value addition. Together, these interventions laid the groundwork for improved agricultural production, commercialization, resilience to climate shocks, and household income growth in Amuria prior to the rollout of PDM in 2022 (Uganda, 2022). The Parish Development Model was designed to increase agricultural productivity and household income by improving financial inclusion and commercialization (Uganda, 2022) (Ministry of Finance, 2022) (Ministry of Finance, 2022). In Amuria District, funds have been disbursed to farmers under this initiative (General, 2023). However, despite PDM implementation, there is lack of information on cattle production and household income (Statistics, 2024b) (Bank, 2020). Absence of rigorous parish-level evaluation limits evidence-based planning and policy refinement (General, 2023). Without empirical assessment, policymakers and district authorities cannot determine whether the program is achieving its intended objectives. Therefore, this study seeks to determine whether participation in PDM has significantly influenced agricultural production and income among farmers in the study area.

1.3 Justification of the Study

This study is justified on policy, academic, and practical grounds. From a policy perspective, PDM represents a major government investment in rural transformation. Evaluating its effectiveness provides evidence to improve accountability, monitoring, and resource allocation. From an academic perspective, limited parish-level empirical research exists on PDM impacts. The study contributes to literature on rural finance, agricultural commercialization, and livelihood transformation (World Bank Report, 2022). From a practical perspective, findings will guide district authorities, extension officers, and farmer groups in improving implementation strategies and enhancing program effectiveness.

1.4 Objectives of the Study

General Objective

To assess the impact of the Parish Development Model on agricultural productivity and household income in Amuria District.

Specific Objectives

To determine the effect of PDM participation on productivity and income of livestock farmers.

To determine the knowledge, attitude, and practices of PDM on productivity and income levels of livestock farmers.

1.5 Research Question

What is the effect of participation in the Parish Development Model (PDM) on cattle productivity and income among farming households in Amuria District, Uganda?

What perceptions do livestock farmers have on PDM as far as improvement of cattle productivity and income is concerned in Amuria District.?

1.6 Significance of the Study

Policy improvement in rural development programs. The study will provide information that can help the government and policymakers understand how the Parish Development Model is

influencing cattle production and household income in Amuria District. The findings can help identify areas where PDM is performing well and areas requiring improvement, thereby supporting better planning, resource allocation, and formulation of future rural development programs.

Academic knowledge on decentralized development models. The study will contribute to existing academic literature on decentralized development programs, particularly the Parish Development Model. Since there is limited empirical information on the effects of PDM on cattle production and household income at parish level, the findings will provide useful information for researchers, students, and other scholars interested in agricultural development, livestock production, rural finance, and household livelihoods.

Improved implementation strategies at parish level. The findings will help district officials, parish leaders, extension workers, and other PDM implementers identify challenges affecting cattle farmers, such as livestock diseases, drought and water shortages, limited extension services, delayed funds, and market access. This information can be used to improve the way PDM activities and resources are delivered to farmers at parish level.

Evidence-based monitoring and evaluation frameworks The study will generate empirical evidence on changes in cattle production, household income, farmers' perceptions, and challenges associated with PDM implementation. This evidence can support district authorities and other stakeholders in monitoring the performance of PDM and evaluating whether its interventions are achieving the intended outcomes. The findings can also provide a basis for identifying areas that require further support or adjustment.

1.7 Scope of the Study

The study was conducted in Ocor parish, Golokwara parish, in Amolo Sub-County, and Asalatap Parish, Angole Parish in Wera Sub County Amuria District, Eastern Uganda. The four parishes were selected because; they are actively implementing the Parish Development Model, Agriculture is the dominant livelihood activity, a significant number of households have benefited from PDM funds, the area is accessible to the researcher, enhancing feasibility of data collection.

Amuria District is situated in the Teso sub-region of Eastern Uganda. The district is predominantly rural, with agriculture being the main economic activity. Farmers in the selected

parishes primarily engage in crop production (cassava, maize, sorghum, and groundnuts) and small-scale livestock keeping.

The study covered the sub-counties of Amolo and Wera. Therefore, finding samples of the survey research shall be used to generalize the performance effect of PDM on cattle production and household income in Amuria District.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter reviews existing literature related to the Parish Development Model (PDM), cattle production, and household income improvement in rural communities. The review focuses on theoretical and empirical studies that explain how government development programs influence livestock production and rural household welfare. The literature also identifies research gaps that justify the need for this study.

2.2 Cattle Production and Rural Livelihoods

Cattle production plays an important role in improving the livelihoods of rural households in many developing countries. Livestock contributes to household income, food security, employment, and asset accumulation (Nations, 2017).

In Uganda, cattle production is a major agricultural enterprise that contributes significantly to rural household incomes through the sale of milk, meat, and live animals (Statistics, 2021). Smallholder livestock farming also helps households build resilience against economic shocks because livestock can be sold when households need cash (Organization, 2018).

Research by (Randolph et al., 2016) indicates that livestock production improves household income and nutrition when farmers have access to veterinary services, improved breeds, and markets. However, productivity in many rural areas remains low due to challenges such as limited access to finance, poor animal health management, and inadequate extension services.

Government programs that provide training and financial support to farmers have been shown to improve livestock productivity and household income (Davis et al., 2019).

2.3 Effect of Government Development Programs on Agricultural Production

Government agricultural development programs are widely used to improve productivity among smallholder farmers. Such programs often provide farmers with access to credit, improved technologies, extension services, and training (Bank, 2018).

In Uganda, programs such as the National Agricultural Advisory Services (NAADS) and Operation Wealth Creation (OWC) were introduced to improve agricultural productivity and

household income among rural farmers (Benin et al., 2017). These programs helped farmers access improved livestock breeds, agricultural inputs, and extension services.

Studies have found that participation in agricultural development programs can significantly increase farm productivity and household income levels (Benin et al., 2017). However, the success of such programs often depends on factors such as effective implementation, farmer participation, and access to markets.

The Parish Development Model builds on these earlier initiatives by focusing on parish-level planning and direct financial support to households to improve agricultural production and enterprise development (Government, 2022b).

2.4 Relationship between Livestock Production and Household Income

Livestock production is strongly linked to household income and poverty reduction in rural areas. According to the Food and Agriculture Organization, livestock contributes approximately 40% of global agricultural output and supports the livelihoods of millions of rural households (Nations, 2018).

In Uganda, livestock enterprises such as cattle keeping provide income through the sale of milk, meat, hides, and live animals (Statistics, 2021). Increased livestock productivity leads to improved household income, which in turn enhances access to education, healthcare, and other social services.

A study conducted by (Ouma et al., 2018) found that farmers who adopted improved livestock management practices experienced higher productivity and increased income compared to those using traditional methods.

However, livestock production can be affected by several factors including disease outbreaks, climate change, limited access to markets, and inadequate veterinary services (Thornton, 2019). Therefore, government support programs such as the Parish Development Model may help overcome these constraints.

2.5 Empirical Studies on Rural Development Programs and Household Income

Several studies have examined the impact of rural development programs on agricultural productivity and household income.

For example, a study by (Davis et al., 2019), found that extension services and farmer training significantly improved agricultural productivity and household incomes in developing countries. Similarly, (Benin et al., 2017) reported that access to agricultural inputs and training under government programs increased farmers' income levels.

In Uganda, research has shown that development programs targeting smallholder farmers can improve rural livelihoods by promoting agricultural enterprise development and market participation (Statistics, 2021).

However, most existing studies focus on crop production rather than livestock enterprises such as cattle production. In addition, there is limited empirical evidence on the impact of the Parish Development Model on livestock production and household income at the parish level. This study therefore seeks to fill this research gap.

2.6 Overview of the Parish Development Model

The Parish Development Model (PDM) is a government strategy introduced to improve service delivery and transform subsistence households into participants in the money economy. The program focuses on the parish as the lowest administrative unit for implementing development interventions aimed at improving agricultural production, financial inclusion, and household income (Government, 2022a).

The PDM operates through seven pillars which include production, storage, processing and marketing, infrastructure and economic services, financial inclusion, social services, parish-based management information systems, and mindset change (Bank, 2022). These components aim to strengthen rural economies by supporting agricultural enterprises such as livestock production.

Studies have shown that rural development programs targeting farmers through financial support and extension services can significantly improve agricultural productivity and household income levels (Davis et al., 2019). Therefore, the Parish Development Model is expected to improve livestock enterprises such as cattle production by providing access to inputs, training, and financial resources.

2.7 Summary of Literature Review

The literature reviewed shows that livestock production plays an important role in improving rural household incomes. Government development programs that provide financial support, training, and extension services can significantly improve agricultural productivity.

However, there is limited research on the effect of the Parish Development Model on cattle production and household income, particularly at the parish level. This study therefore seeks to investigate how the program influences cattle production and household income in Amolo and Wera Sub Counties in Amuria District.

CHAPTER THREE METHODOLOGY

3.1 Description of the Study Location

The study was conducted in Amolo and Wera Sub Counties, which is located in AMURIA District in EASTERN REGION OF Uganda (2.03017⁰N), 33.6427533⁰E at an elevation of 1146.15 m (3760.33 ft.) above the sea level. The study was specifically focus on four parishes: Golokwara, and Ocor in Amolo Sub County had a total population of 11,886 consisting of 5,511 males and 6,375 females, with 2,273 households with average household size of 5.5. Angole and Asalatap in Wera Sub County with a total population of 14,490 people consisting of 7,668 females and 6,822 males, with a household population of 2,594 with average size of 5.6. (Statistics, 2024b)

The area is predominantly rural and the main economic activity is agriculture, particularly crop farming and livestock production. Cattle production is commonly practiced by households for both income generation and food security.

The area experiences a tropical climate with two main seasons: the rainy season and the dry season. The rainfall pattern and climatic conditions influence livestock production, especially the availability of pasture and water.

The selection of Amolo and Wera Sub Counties was based on the fact that the areas are implementing the Parish Development Model, and many households participate in livestock production.

The map of Uganda showing the location of Amuria district Eastern Uganda



3.2 Research Design

A cross-sectional survey was done which involved collecting information from respondents only once to examine relationships between variables as they exist at that particular time.

3.3 Description of the Type of Survey

The study employed a household survey. This type of survey involves collecting data directly from households involved in cattle production in the selected parishes. The household survey allows the researcher to collect information on farmers' knowledge, attitude and practices in the Parish Development Model, cattle productivity levels, and household income.

3.4 Target Population

The target population included households involved in cattle production in Golokwara, Ocor in Amolo Sub County and Wera and Asalatap in Wera Sub County. The study population included; Household heads involved in cattle production, Parish Development Model beneficiaries, Local leaders and Agricultural extension workers

These groups were selected because they have relevant information regarding the implementation and impact of the Parish Development Model.

3.5 Sampling Strategy and Technique

The study used both purposive and simple random sampling techniques. Purposive sampling was used to select local leaders and extension workers because they have specific knowledge about the implementation of the Parish Development Model. Simple random sampling was used to select households involved in cattle production to ensure that each household has an equal chance of being included in the study.

3.6 Sample Size

A list of all the PDM beneficiaries was obtained from the District PDM Focal Person (Commercial Officer) which showed that 30,230 people had benefited from PDM in the entire District of Amuria. A sample of 202 households was purposively determined consisting of 101 beneficiaries and 101 non beneficiaries since a comparison is to be made.

3.7 Data Sources and Types

The study included both Primary and Secondary data. Primary data was collected directly from respondents through questionnaires and interviews. Secondary data was obtained from government reports, academic journals, books, and official documents related to the Parish Development Model and livestock production.

3.8 Data collection methods and procedures

I prepared the structured farmer questionnaire, the questionnaire was programed in KoboCollect to facilitate digital data collection, and the structured questionnaire was administered to livestock farmers. Information was collected on socioeconomic characteristics, farm and livestock characteristics, awareness and adoption of improved pasture species, source of planting material, extension services, farmer group membership, credit access, perceived benefits and adoption constraints. I also observed farms where

practical to verify the presence of improved pastures, pasture management practices and livestock feeding arrangements

3.9 Data Collection Tools

The study used 202 questionnaires collected via kobo toolbox, all 202 retained after cleaning the questionnaires to help ensure systematic relevant information from respondents.

3.10 Data Quality Control

I did Pre-testing of the questionnaires before the actual data collection. Provide clear instructions to respondents. Cross-check completed questionnaires for errors Code and clean data before analysis. These procedures helped reduce errors and bias in the data collected.

3.11 Data Analysis and Interpretation

Data were collected electronically using KoboToolbox and exported for analysis in SPSS. A total of 202 questionnaires were completed, and all 202 cases were retained after data cleaning. Cleaning involved converting free-text numerical entries (for example, quantities recorded as “30litres” or prices recorded as “500 per litre”) into numeric values, and treating a small number of implausible entries (for example, a reported land holding of 1,000,000 acres and two reports of 1,000,000 head of cattle owned before PDM) as data entry errors and excluding them from the relevant computations. Because the questionnaire used extensive skip logic and several open-response items, the number of valid responses (n) varied across variables and is reported alongside each estimate rather than assumed to equal 202 throughout imitative data was analyzed using Statistical Package for R Studio

CHAPTER FOUR

4.1 Introduction

4.2 Data Cleaning and Sample Characteristics

Data were collected electronically using KoboToolbox and exported for analysis in R. A total of 202 questionnaires were completed, and all 202 cases were retained after data cleaning. Cleaning involved converting free-text numerical entries (for example, quantities recorded as “30litres” or prices recorded as “500 per liter”) into numeric values, and treating a small number of implausible entries (for example, a reported land holding of 1,000,000 acres and two reports of 1,000,000 head of cattle owned before PDM) as data entry errors and excluding them from the relevant computations. Because the questionnaire used extensive skip logic and several open-response items, the number of valid responses (n) varies across variables and is reported alongside each estimate rather than assumed to equal 202 throughout.

4.3 Socio Demographic Characteristics of Respondents

The sample was predominantly female (68.7%, n = 138 of 201 valid responses), reflecting women's central role in day-to-day homestead cattle husbandry in the study area, while men constituted 31.3% (n = 63). Respondents were, on average, drawn from a mature age profile: 32.8% were above 50 years, 26.4% were aged 31–40, 21.9% were aged 18–30, and 18.9% were aged 41–50; taken together, 78.1% of respondents were above 30 years of age. Households were relatively large, averaging 7.1 members (SD = 3.4), consistent with typical household sizes in the Teso Sub Region.

Formal education attainment was generally low: two thirds of respondents (67.3%) had attained only primary level education, 15.8% had no formal education, 12.4% had reached secondary level, and only 4.5% had attained tertiary education. Most respondents were married (76.9%), with smaller proportions widowed (11.1%), single (7.5%), divorced (2.5%) or separated (2.0%). The large majority of respondents owned land (92.0%, n = 185 of 201), with a mean holding of 3.2 acres (SD = 2.4, median = 2.0 acres) among those who reported acreage. Land was predominantly held through inheritance (65.8%), followed by outright/private (mailo) ownership (28.4%); rented, communal and other tenure arrangements together accounted for less than 6% of holdings.

Table 4.1: SocioDemographic Characteristics of Respondents

Characteristic	n	%
Sex		
Female	138	68.7%
Male	63	31.3%
Age group (years)		
18–30	44	21.9%
31–40	53	26.4%
41–50	38	18.9%
Above 50	66	32.8%
Education level		
No formal education	32	15.8%
Primary	136	67.3%
Secondary	25	12.4%
Tertiary	9	4.5%
Marital status		
Married	153	76.9%
Single	15	7.5%
Divorced	5	2.5%
Separated	4	2.0%
Widowed	22	11.1%
Land ownership		
Yes	185	92.0%
No	16	8.0%
Form of land tenure		
Inherited	125	65.8%
Owned (Mailo/private title)	54	28.4%
Rented	8	4.2%
Communal	2	1.1%
Other	1	0.5%

Note. Percentages are computed on the valid (non missing) responses for each characteristic and may not sum to exactly 100% due to rounding. Mean household size was 7.1 persons (SD = 3.4, range = 1–20, n = 197). Among the 175 respondents who reported land size, the mean holding was 3.2 acres (SD = 2.4, median = 2.0).

4.4 PDM Participation, Fund Utilization and Prior Cattle Ownership

4.4.1 PDM Beneficiary Status

Table 4.2a shows that two thirds of respondents (67.5%, n = 135 of 200 valid responses) reported being PDM beneficiaries at the time of the survey, while just under a third (32.5%, n = 65) were not. Table 4.2b shows that, among the 65 no beneficiaries, the largest share (52.3%) attributed their exclusion to not having been registered for the programme, 30.8% cited registration or processing errors, 9.2% indicated personal unwillingness to participate, and 7.7% attributed their nonparticipation to perceived corruption in beneficiary selection. That registration-related barriers (not registered or processing errors) together account for over four fifths (83.1%) of stated reasons for nonparticipation suggests that administrative and outreach constraints, rather than a lack of interest among farming households, are the principal barrier to wider PDM cattle enterprise coverage in the study area.

Table 4.2a: PDM Beneficiary Status of Respondents

PDM beneficiary status	n	%
Beneficiaries	135	67.5%
Non beneficiaries	65	32.5%

Note. n = 200. Two respondents did not indicate their beneficiary status and are excluded.

Table 4.2b

Reasons Given by Non Beneficiaries for Non Participation in PDM

Reason for nonparticipation	n	%
Not registered for the programme	34	52.3%
Registration/processing errors	20	30.8%
Personal unwillingness ('I don't want')	6	9.2%
Perceived corruption in beneficiary selection	5	7.7%

Note. n = 65 non beneficiary respondents.

4.4.2 PDM Funds Received and Enterprises Invested In

Nearly all reporting beneficiaries received an identical or near identical grant amount: 96.9% of the 128 beneficiaries who disclosed the amount received the standard UGX 1,000,000 SACCO revolving fund allocation, with a handful reporting marginally lower net amounts (UGX 970,000–989,000, plausibly net of processing deductions). Because the grant size varied so little across households, differences in the production and income outcomes documented later in this chapter are better attributed to how the fund was invested and to household and farm level characteristics than to differences in the size of the grant itself.

Regarding enterprise choice (Table 4.3), breeding attracted the largest share of PDM cattle investment (37.4%, $n = 49$), followed by milk production (29.0%, $n = 38$) and beef/bull fattening (27.5%, $n = 36$); ox ploughing attracted the smallest share (6.1%, $n = 8$).

Table 4.3: Cattle Enterprises in Which PDM Beneficiaries Invested Their Funds

Cattle enterprise invested in	n	%
Breeding	49	37.4%
Milk Production	38	29.0%
Beef/Bull fattening	36	27.5%
Ox ploughing	8	6.1%

Note. $n = 131$ beneficiaries who specified an enterprise. Among the 128 beneficiaries who reported the amount received, 96.9% received the standard UGX 1,000,000 SACCO revolving fund allocation (mean = UGX 999,375; median = UGX 1,000,000; range = UGX 970,000–1,000,000).

4.4.3 Cattle ownership before PDM

Table 4.4 shows that 58.3% of respondents ($n = 109$ of 187 valid responses) owned cattle before PDM was introduced, with a mean pre PDM herd size of 4.5 head ($SD = 4.3$, median = 4). Prior cattle ownership was significantly and positively associated with current PDM beneficiary status ($\chi^2(1) = 13.08$, $p < .001$): 81.5% of households that owned cattle before PDM (88 of 108) had gone on to become PDM beneficiaries, compared with only 55.8% of households that did not previously own cattle (43 of 77). This indicates that, at least for its cattle enterprise component, PDM uptake in the study area has to date been disproportionately

concentrated among households that already possessed a livestock asset base, rather than being distributed evenly between cattle-owning and cattle less households a targeting and equity consideration for programme implementers.

Table 4.4: Cattle Ownership Status and Herd Size before PDM, and Its Association with Current PDM Beneficiary Status

Owned cattle before PDM	n	%
Owned before	109	58.3%
Not owned before	78	41.7%

Note. n = 187. Among the 88 respondents who owned cattle before PDM and reported herd size, the mean was 4.5 head (SD = 4.3, median = 4.0, maximum = 30). A chi-square test of association between prior cattle ownership and current PDM beneficiary status was significant: $\chi^2(1) = 13.08, p < .001$ (n = 187).

4.5 Effect of the Parish Development Model on Cattle Production

4.5.1 Changes in Cattle Enterprise Output and Income Before and After PDM

To assess whether cattle production has changed since respondents began engaging with PDM, production and income data reported for the period before and after PDM were compared for the subset of respondents who provided both values, using the paired samples t-test and the nonparametric Wilcoxon signed rank test (reported jointly because ShapiroWilk tests indicated that most before after difference distributions departed from normality). Because respondents kept records of varying completeness across the five cattle enterprises covered by the questionnaire, the number of paired observations (n) differs across variables and enterprises and is reported with each estimate.

Table 4.5 presents the milk enterprise comparison, the best populated of the five cattle enterprises examined. Milk quantity produced rose from a mean of 32.9 litres per month before PDM to 38.4 litres per month after a significant increase of 16.6% ($t = 4.26$, $p < .001$, $n = 73$). Quantity sold rose more sharply, from a mean of 19.5 to 30.4 litres per month (+56.2%, $p = .005$, $n = 66$), and the farmgate price of milk increased more modestly, from a mean of UGX 1,535.5 to UGX 1,650.0 per litre (+7.5%, t test $p = .045$, though only marginally significant under the Wilcoxon test at $p = .066$, $n = 68$). Estimated monthly milk income rose from a mean of UGX 27,899 (median UGX 16,000) before PDM to UGX 65,876 (median UGX 24,000) after PDM, an increase of 136.1% ($t = 2.37$, $p = .021$; Wilcoxon $p < .001$, $n = 68$).

Table 4.5: Milk Production and Income Before and After PDM (Paired Comparison)

Indicator	n	Before PDM M (SD)	After PDM M (SD)	% change	Paired ttest
Quantity produced (liters/month)	73	32.9 (58.5)	38.4 (63.9)	16.6%	$t = 4.26$, $p < .001$
Quantity sold (liters/month)	66	19.5 (36.1)	30.4 (56.8)	56.2%	$t = 2.94$, $p = .005$
Farm gate price (UGX/liter)	68	1,535.5 (894.0)	1,650.0 (816.9)	7.5%	$t = 2.04$, $p = .045$
Estimated monthly income (UGX)	68	27,898.8 (41,833.1)	65,876.5 (147,863.0)	136.1%	$t = 2.37$, $p = .021$

Note. M = mean; SD = standard deviation, shown in parentheses. All differences were also significant under the nonparametric Wilcoxon signed rank test ($p < .001$) except farm gate price, for which the Wilcoxon test was only marginally significant ($p = .066$). Sample sizes range from $n = 66$ to $n = 73$ depending on the indicator. Of the 73 households with complete quantity data, 74.0% recorded a higher monthly milk yield after PDM than before; of the 68 households with complete income data, 79.4% recorded higher milk income after PDM than before.

Table 4.6 shows that, among the smaller number of households actively engaged in bull fattening, output rose significantly, from a mean of 2.5 kg live weight equivalent per month before PDM to 4.0 kg after (+61.2%, $t = 4.81$, $p < .001$, $n = 20$). However, estimated monthly income from bull fattening did not change significantly (mean UGX 144,444 before versus UGX 136,667 after; $t = 0.19$, $p = .849$, $n = 18$); of the 18 households with complete income data, only 22.2% recorded an increase, 66.7% recorded no change (mainly households reporting no sales in either period), and the remainder recorded a decline. This pattern suggests that, while animals are being fattened more intensively, this has not yet reliably translated into higher realized income plausibly because bull fattening returns are lumpy, realized occasionally at the point of sale of a mature animal rather than monthly, and because production costs have also risen over the same period (see Section 4.6.1).

Very few households provided complete before-and-after records for ploughing ($n = 6-9$), and none provided usable records for ghee/butter or yoghurt production; these three enterprises are therefore reported descriptively only and were not subjected to formal paired testing. Among the few ploughing households with data, output rose from a mean of 418 kg per month (median 200, $n = 9$) before PDM to 600 kg (median 350, $n = 6$) after, and estimated income rose from a mean of UGX 396,667 ($n = 6$) to UGX 683,333 ($n = 6$). Given the very small number of cases, these ploughing figures should be treated as indicative only and not generalized to the wider beneficiary population.

Table 4.6: Bull Fattening (Beef) Production and Income Before and After PDM (Paired Comparison)

Indicator	n	Before PDM M (SD)	After PDM M (SD)	% change	Paired ttest
Quantity produced (live weight) (kg/month)	20	2.5 (2.7)	4.0 (3.9)	61.2%	$t = 4.81$, $p < .001$
Estimated monthly income (UGX)	18	144,444.4 (233,193.2)	136,666.7 (185,408.9)	5.4%	$t = 0.19$, $p = .849$

Note. M = mean; SD = standard deviation, shown in parentheses. The increase in output was also significant under the Wilcoxon signed rank test ($p < .001$); the change in income was not significant under either test (Wilcoxon $p = .462$).

4.5.2 Farmers' Perceptions on the Effect of PDM on Cattle Production

In addition to reported production figures, respondents rated ten statements about PDM's effect on cattle production on a five-point scale (1 = Strongly Disagree to 5 = Strongly Agree). Table 4.7 ranks the ten items by mean score. The statement attracting the strongest agreement was “Overall, PDM has positively affected cattle production” (mean = 3.23, n = 74), followed by “PDM support has reduced cattle mortality” (mean = 2.85) and “Cattle production is higher now than before PDM implementation” (mean = 2.65). The lowest-scoring items concerned specific input and service delivery dimensions of the programme: “PDM has improved access to veterinary services” (mean = 2.20, the lowest-ranked item), “PDM has enabled me to increase the number of cattle owned” (mean = 2.31), and “PDM has encouraged adoption of improved cattle breeds” (mean = 2.42).

The composite cattle production perception score averaged 2.67 (SD = 0.59, n = 128), significantly below the scale midpoint of 3 ($t = 6.35$, $p < .001$), indicating that, on balance, respondents leaned toward disagreement rather than agreement that PDM has improved cattle production. Internal consistency of the ten-item battery was modest (Cronbach's alpha = 0.67 on the small number of complete cases, $n = 10$, falling further when estimated pairwise across the fuller available sample), indicating that the ten items do not form a strongly one-dimensional scale; this is consistent with the pattern in Table 4.7, where broad, general items scored more favorably than specific service delivery items. Consequently, the item-level rankings, rather than the composite score alone provide the more informative picture of where PDM is perceived to be working and where it is not: respondents are cautiously positive about the general direction of cattle production but more critical of the specific complementary services (veterinary care, breed improvement, extension, input access) that underpin sustained cattle enterprise growth.

Read together with the quantitative production data in Section 4.5.1, this points to a genuine but partial and unevenly experienced effect: households with complete production records show real average gains in milk and bull fattening output, while the perception data suggest these gains are not yet matched, in the eyes of respondents, by improvements in the supporting services that would be needed to sustain and broaden production gains across the wider beneficiary population.

Table 4.7: Farmers' Perceptions on the Effect of PDM on Cattle Production, Ranked by Mean Score

Statement	n	Mean	SD	Interp.	Rank
Overall, PDM has positively affected cattle production	74	3.23	1.57	N	1
PDM support has reduced cattle mortality	107	2.85	1.37	N	2
Cattle production is higher now than before PDM implementation	75	2.65	1.36	N	3
PDM has improved access to livestock inputs	75	2.63	1.12	N	4
PDM has improved cattle feeding practices on my farm	77	2.52	0.87	D	5
PDM has increased milk production on my farm	74	2.51	1.25	D	6
Agricultural extension services under PDM have improved cattle management	73	2.48	1.13	D	7
PDM has encouraged adoption of improved cattle breeds	86	2.42	1.12	D	8
PDM has enabled me to increase the number of cattle owned	78	2.31	1.54	D	9
PDM has improved access to veterinary services	99	2.20	0.78	D	10

Note. Scale: 1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly Agree. Interpretation bands: SD = 1.00–1.80, D = 1.81–2.60, N = 2.61–3.40, A = 3.41–4.20, SA = 4.21–5.00. Sample sizes vary by item (n = 128 for the composite score) due to itemlevel nonresponse. Composite score M = 2.67 (SD = 0.59), significantly below the neutral midpoint of 3 (t = 6.35, p < .001). Cronbach's alpha for the tenitem battery was 0.67 on complete cases (n = 10).

4.6 Effect of the Parish Development Model on Household Income

4.6.1 Household Expenditure on Cattle Enterprises

Table 4.8 shows that households spent, on average, UGX 51,981 per month (median = UGX 44,000, n = 108) on milk production, UGX 65,964 (n = 28) on bull fattening, UGX 50,340 (n = 47) on breeding-related costs, and UGX 195,000 (n = 3, indicative only) on ox ploughing. Across all enterprises combined, the grand total monthly expenditure reported by households averaged UGX 53,849 (SD = 46,192, median = UGX 44,000, n = 83).

Comparing milk income after PDM against milk-specific monthly expenditure for the 71 households with both figures available, the mean net monthly margin was positive at UGX 15,954, but the median net margin was actually negative (–UGX 4,000), and 57.7% of these households recorded a net monthly loss on milk production once feed, veterinary and other input costs were accounted for. This indicates that, although gross milk income rose significantly after PDM (Section 4.5.1), rising production costs have absorbed much of this gain for a majority of milk-producing households, so that net returns to milk enterprises remain thin or negative for more than half of them.

Table 4.8: Mean Monthly Household Expenditure on Cattle Enterprises

Enterprise	n	Mean (UGX)	SD (UGX)	Median (UGX)
Milk production	108	51,981	56,837	44,000
Bull fattening	28	65,964	57,894	44,500
ploughing	3	195,000	124,399	170,000
Breeding	47	50,340	91,931	28,000
Grand total (all enterprises)	83	53,849	46,192	44,000

Note. Expenditure figures combine spending on feeds, veterinary drugs, accaricides and other enterprise specific costs. The ox ploughing figure is based on only three respondents and is indicative only. The grand total is the total monthly expenditure across all cattle enterprises combined, as reported directly by respondents, and is not a simple sum of the enterprise specific rows because not all households incurred costs in every enterprise.

4.6.2 Farmers' Perceptions on the Effect of PDM on Household Income

Table 4.9 ranks ten household income statements. Unlike the cattleproduction battery, all ten income items scored above the scale midpoint, and the battery showed high internal consistency (Cronbach's alpha = 0.94 on complete cases). The most strongly endorsed items were “Overall, PDM has positively affected household income” (mean = 3.38, n = 97) and “PDM has reduced poverty in my household” (mean = 3.37). The lowest-ranked items were “Household expenditure on healthcare has improved due to increased income” (mean = 2.97) and “Household savings have increased after participating in PDM” (mean = 3.05), both nonetheless remaining close to the neutral point rather than indicating outright disagreement.

The composite household income perception score averaged 3.19 (SD = 0.58, n = 131), significantly above the neutral midpoint of 3 ($t = 3.82$, $p < .001$), indicating that, on balance, respondents perceive PDM to have had a modest but statistically significant positive effect on household income a notably more favourable assessment than the one recorded for cattle production support services in Section 4.5.2.

Table 4.9: Farmers' Perceptions on the Effect of PDM on Household Income, Ranked by Mean Score

Statement	n	Mean	SD	Interp.	Rank
Overall, PDM has positively affected household income	97	3.38	0.81	N	1
PDM has reduced poverty in my household	98	3.37	0.84	N	2
PDM has improved my household's ability to meet basic needs	117	3.32	0.81	N	3
Income from cattle production has increased due to PDM	85	3.28	0.85	N	4
Household assets have increased since joining PDM	106	3.26	0.84	N	5
My household income is higher now than before receiving PDM support	110	3.25	0.86	N	6
PDM has increased market participation for livestock products	104	3.24	0.89	N	7
Household expenditure on education has improved due to increased income	94	3.22	0.86	N	8
Household savings have increased after participating in PDM	118	3.05	0.90	N	9
Household expenditure on healthcare has improved due to increased income	98	2.97	0.84	N	10

Note. Scale: 1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly Agree. Interpretation bands: SD = 1.00–1.80, D = 1.81–2.60, N = 2.61–3.40, A = 3.41–4.20, SA = 4.21–5.00. Composite score M = 3.19 (SD = 0.58, n = 131), significantly above the neutral midpoint of 3 (t = 3.82, p < .001). Cronbach's alpha for the tenitem battery was 0.94 on complete cases (n = 63).

4.6.3 Relationship between perceived cattle production and household income effects

A Pearson correlation between the cattle production and household income composite perception scores was positive and statistically significant ($r = 0.55$, $p < .001$, $n = 126$; see Table 4.11), confirming that households who perceived larger gains in cattle production also tended to perceive larger gains in household income. This is consistent with the programmers underlying theory of change, in which improvements at the cattle enterprise level are expected to translate into household-level income gains.

4.7 Challenges Faced by PDM Beneficiaries in Cattle Production

Table 4.10 ranks six statements on challenges facing PDM beneficiaries. All six items scored above the scale midpoint, and the battery showed high internal consistency (Cronbach's alpha = 0.90). Livestock disease was the most strongly endorsed challenge ("Livestock diseases limit the benefits of PDM," mean = 3.38, $n = 88$), closely followed by drought and water shortages (mean = 3.34) and limited extension services (mean = 3.30). Delayed release of PDM funds (mean = 3.22) and limited market access (mean = 3.20) were also endorsed as challenges, while perceived inadequacy of the fund amount itself was the lowest-ranked and only borderline neutral item (mean = 3.00).

The composite challenges score averaged 3.25 ($SD = 0.63$, $n = 124$), significantly above the neutral midpoint ($t = 4.45$, $p < .001$), confirming that, overall, respondents regard these constraints as real barriers to realizing the full benefits of PDM, with animal health and climate/water-related constraints outweighing concerns about the size of the fund itself. This finding is consistent with the pattern observed in Section 4.5.2, where the lowest-rated cattle production items concerned veterinary access and input support rather than the size of the PDM grant.

Table 4.10: Challenges Faced by PDM Beneficiaries in Cattle Production, Ranked by Mean Score

Statement	n	Mean	SD	Interp.	Rank
Livestock diseases limit the benefits of PDM	88	3.38	0.86	N	1
Drought and water shortages affect cattle production	70	3.34	0.83	N	2
Limited extension services affect successful implementation of PDM	82	3.30	0.87	N	3
Delayed release of PDM funds affects cattle production	67	3.22	0.92	N	4
Market access remains a challenge despite PDM support	91	3.20	0.91	N	5
The amount of PDM funds received is inadequate	79	3.00	0.95	N	6

Note. Scale: 1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly Agree. Interpretation bands: SD = 1.00–1.80, D = 1.81–2.60, N = 2.61–3.40, A = 3.41–4.20, SA = 4.21–5.00. Composite score M = 3.25 (SD = 0.63, n = 124), significantly above the neutral midpoint of 3 (t = 4.45, p < .001). Cronbach's alpha for the six item battery was 0.90 on complete cases (n = 31).

4.8 Socio-Demographic and Other Differentials in PDM Access and Perceived Benefit

Table 4.11 summarizes a series of association and difference tests conducted to examine whether PDM access and perceived benefit differ systematically across respondent groups. Beyond the significant association between prior cattle ownership and beneficiary status already noted in Section 4.4.3, PDM beneficiary status was not significantly associated with sex ($\chi^2(1) = 0.33$, $p = .566$) or education level ($\chi^2(3) = 5.20$, $p = .158$), and showed only a marginal, no significant association with land ownership ($\chi^2(1) = 3.31$, $p = .069$). This suggests that, unlike prior cattle ownership, PDM access in the study area has not been systematically skewed by sex, education or landownership status.

The household income perception score did not differ significantly between male and female respondents, though the difference approached the conventional significance threshold (male $M = 3.32$, $SD = 0.58$, $n = 44$; female $M = 3.13$, $SD = 0.58$, $n = 87$; $t = 1.79$, $p = .078$), suggesting a possible, but not statistically confirmed, tendency for male respondents to perceive slightly greater income benefit from PDM than female respondents. The cattle production perception score did not differ significantly across education levels ($F(3, 124) = 0.14$, $p = .938$), indicating that the more critical assessment of PDM's cattle production support services documented in Section 4.5.2 is shared broadly across education groups rather than concentrated among any one group.

Table 4.11: Summary of Association and Difference Tests

Test	Variables	Sample size	Statistic	p	Decision
Chi square	Sex $\times$ PDM beneficiary status	$n = 199$	$\chi^2(1) = 0.33$	$= .566$	Not significant
Chi square	Land ownership $\times$ PDM beneficiary status	$n = 199$	$\chi^2(1) = 3.31$	$= .069$	Not significant ($p < .10$)
Chi square	Education level $\times$ PDM beneficiary status	$n = 200$	$\chi^2(3) = 5.20$	$= .158$	Not significant
Chi square	Prior cattle ownership $\times$ PDM beneficiary status	$n = 187$	$\chi^2(1) = 13.08$	$< .001$	Significant
Independent t-test	Household income perception score by sex	$n_m = 44$, $n_f = 87$	$t = 1.79$	$= .078$	Not significant ($p < .10$)
One way ANOVA	Cattle production perception score by education level	$n = 128$	$F(3, 124) = 0.14$	$= .938$	Not significant
Pearson correlation	Cattle production perception score with household income perception score	$n = 126$	$r = 0.55$	$< .001$	Significant, positive

Note. n_m = number of male respondents; n_f = number of female respondents. “Not significant ($p < .10$)” denotes a marginal association below the conventional 5% threshold but worth noting.

CHAPTER FIVE

5.1 Introduction

This chapter discusses the findings presented in Chapter Four in relation to the study's focus on the effect of the Parish Development Model (PDM) on cattle production and household income among cattle keeping households in Amuria District. The discussion follows the same broad structure used to present the results: beneficiary profile, fund utilization and targeting; the effect of PDM on cattle production; the effect of PDM on household income; the challenges beneficiaries face; and the extent to which access and perceived benefit differ across respondent groups. Building on this discussion, the chapter concludes what the findings mean for the programmers performance in the study area, sets out recommendations for the various actors involved in its implementation, and closes with a statement of the study's limitations and suggested areas for further research.

5.2 Summary of Findings

The study sampled 202 cattle keeping households in Amuria District, most of them female, drawn from a mature age profile, and with generally low formal education. Two-thirds of respondents (67.5%) were PDM beneficiaries at the time of the survey, and nonparticipation among the remainder was attributed mainly to registration and processing barriers rather than a lack of interest in the programme. Beneficiary status was significantly associated with prior ownership of cattle but not with sex, education or land ownership, and beneficiaries received an almost uniform standard grant that was invested mainly in cattle breeding, milk production and beef/bull fattening. Paired before-and-after comparisons showed statistically significant increases in milk quantity produced, quantity sold and income, and in bull fattening output, although bull fattening income and net milk margins showed no corresponding improvement once rising input costs were taken into account. Respondents' perceptions of PDM's effect on household income were more favorable than their perceptions of its effect on cattle production support services, and livestock disease, drought and water shortages, and weak extension services rather than the size of the PDM fund itself were identified as the principal barriers to realizing fuller benefits from the programme.

5.3 Discussion of Findings

5.3.1 PDM Beneficiary Profile, Fund Utilization and Targeting

The sociodemographic profile of respondents described in Section 4.3 predominantly female, drawn from a mature age group, and holding mostly primary-level education, mirrors (Wijesiri et al., 2026). The everyday reality of homestead cattle keeping in the study area, in which women typically shoulder much of the routine animal care even where men may hold nominal ownership of the herd. This has a bearing on how PDM's cattle enterprise component is experienced on the ground (Turyasingura et al., 2023): because respondents in this study are largely the household members most directly engaged in day today cattle husbandry, their assessments of the programme's effect on production and income (Sections 4.5.2 and 4.6.2) can reasonably be read as reflecting firsthand operational experience rather than distant, secondhand impressions of the enterprise.

The finding that registration and processing barriers, rather than personal unwillingness, accounted for over four-fifths of stated reasons for nonparticipation (Section 4.4.1) indicates that the immediate constraint on wider PDM cattle enterprise coverage in Amuria District is administrative rather than motivational (Paudyal, 2024). Farming households in the study area are, on this evidence, generally receptive to the programme; what appears to be limiting broader uptake is the efficiency and reach of the registration and vetting process at parish level. This mirrors concerns raised at the national level: the Auditor General's 2023 thematic audit of PDM implementation found delays in establishing parish planning and development structures and inconsistent adherence to guidelines, which compromised service delivery and enterprise group formation during the programmers early rollout (Paudyal, 2024). The Amuria findings suggest these administrative teething problems have persisted at the point of beneficiary registration. This is a more tractable problem than a demand-side one, since it points toward process improvements: clearer registration timelines, more responsive handling of processing errors, and transparent communication about selection rather than a need to persuade a reluctant population.

Because 96.9% of beneficiaries who disclosed the amount received an identical or near-identical standard grant (Section 4.4.2), the considerable variation later observed in production and income outcomes cannot be explained by differences in how much beneficiaries received. It must instead be explained by differences in how the fund was invested and by underlying

household and farm level characteristics. Enterprise choice itself shows a discernible pattern: breeding attracted the largest share of investment (37.4%), ahead of milk production (29.0%) and beef/bull fattening (27.5%), with oxploughing a distant fourth (6.1%) (Adem & Turyamureeba, 2026). Breeding requires comparatively less recurrent working capital than fattening or dairying and functions partly as a store of value that a household can grow gradually, which may explain its popularity among a fund constrained, largely female managed sample; milk offers a more immediate route to cash income; and ploughing, an enterprise more closely associated with male labour and requiring complementary implements the fund does not cover, appears to have been the least accessible option for the sample as constituted.

The most consequential targeting finding in this section, however, is the significant association between prior cattle ownership and current PDM beneficiary status ($\chi^2(1) = 13.08$, $p < .001$; Section 4.4.3): households that already owned cattle before PDM became beneficiaries at a substantially higher rate (81.5%) than those that did not (55.8%). Whatever the mechanism—whether households with an existing herd find it easier to demonstrate eligibility, are more confident engaging with SACCO and parish structures (Ekou, 2013), or are simply better placed to make productive use of a cattle enterprise grant— the practical effect is that PDM's cattle enterprise component has, to date, reached asset-holding households disproportionately. For a Programme whose stated national goal is to transition subsistence households into the money economy (Kayizzi Mugerwa, 2024; World Bank, 2024), this is a targeting and equity consideration that merits direct attention, since it suggests that cattle-less households, arguably those PDM is most intended to benefit, face a structural disadvantage in accessing this particular enterprise pathway. This pattern is not unique to the cattle enterprise studied here: an evaluation of PDM's coffee enterprise component in Hoima District similarly found genuine production gains alongside persistent elite capture and uneven distribution of Programme benefits among smallholder beneficiaries (A et al., 2025), suggesting that asset and influence based targeting skew may be a recurring feature of PDM implementation across enterprise types rather than one specific to cattle production in Amuria District.

5.3.2 Effect of the Parish Development Model on Cattle Production

The paired before-and-after comparisons in Section 4.5.1 provide the clearest quantitative evidence that PDM has been associated with real gains in cattle enterprise output among reporting households. Milk quantity produced rose by 16.6% and quantity sold by 56.2%, a proportionally larger increase that suggests households are not only producing more milk but

channeling a growing share of it to the market rather than to home consumption or nonmarket uses, consistent with strengthening market orientation among beneficiary households. The associated 136.1% rise in estimated monthly milk income, driven by higher volumes sold, a modestly higher farm gate price, and a larger proportion of production entering the market, represents the most robust income effect documented in the chapter. Bull fattening output also rose significantly (+61.2%), though, as discussed further below, this did not translate into a significant increase in realized income.

These production gains sit in some tension with the accompanying perception data. The composite cattle production perception score ($M = 2.67$) was significantly below the scale midpoint (Section 4.5.2), indicating that respondents leaned, on balance, toward disagreement rather than agreement that PDM has improved cattle production. Closer inspection of the item level rankings in Table 4.7 clarifies rather than contradicts this apparent paradox: the broad, general item (“Overall, PDM has positively affected cattle production”) scored comparatively favorably, while the specific service delivery items veterinary access, breed improvement, extension, input access were the most strongly disputed. Read together, the quantitative and perception findings suggest a genuine but partial and unevenly distributed effect: some households, plausibly those already positioned to invest effectively (see Section 5.3.1), have realized real production gains, while the wider body of beneficiaries experiences the complementary services needed to sustain and broaden those gains- veterinary care in particular- as largely absent. The production gains recorded in Section 4.5.1 should therefore not be read as evidence that PDM's supporting service infrastructure is functioning well; rather, they appear to have occurred substantially despite weak complementary services, on the strength of the capital injection and beneficiaries' own effort, rather than because of a well-functioning extension and veterinary support system. This mirrors a broader pattern documented in the livestock development literature: a systematic review of livestock transfer programmers in low and middle-income countries found that such programmers reliably raise livestock related production and revenue, but that translating these gains into a durably larger share of total household welfare is far less consistent, particularly where complementary inputs such as feed, water and animal health services remain constrained (Collishaw et al., 2023).

The bull fattening result reinforces this interpretation from a different angle. Output rose significantly, but estimated monthly income did not (Section 4.5.1), with two-thirds of reporting households recording no change in income at all. Bull fattening is realized in

occasional, lump sum sales rather than a steady monthly income stream, so a monthly income comparison is likely to understate the enterprise's true financial performance for many households; at the same time, rising production costs (Section 4.6.1) appear to have absorbed a meaningful share of any gain, so the disconnect between higher output and flat income is likely a product of both measurement timing and genuine cost pressure rather than either factor alone.

5.3.3 Effect of the Parish Development Model on Household Income

Respondents' perceptions of PDM's effect on household income were markedly more favorable than their perceptions of its effect on cattle production support services: the household income composite score ($M = 3.19$) was significantly above the neutral midpoint, and all ten income-related items, including those on poverty reduction and the ability to meet basic needs, scored above the midpoint (Section 4.6.2). Taken alongside the significant positive correlation between the cattle production and household income perception scores ($r = 0.55$, $p < .001$; Section 4.6.3), this indicates that households who feel their cattle enterprise has improved also tend to feel their overall household income has improved, and that, on the whole, beneficiaries credit PDM with a modest but real improvement in household welfare even where they remain critical of specific cattle production services.

This favorable income perception, however, sits uneasily alongside the net margin evidence in Section 4.6.1. Although mean net monthly margin on milk production was positive, the median was negative, and 57.7% of households with both income and expenditure data recorded an outright net loss on the enterprise once feed, veterinary and other input costs were deducted from milk income. In other words, the gross income gains documented in Section 4.5.1 have been substantially eroded by rising production costs for a majority of milk-producing households, even as those same households report, on balance, that their overall household income has improved. Several explanations, not mutually exclusive, can account for this. Household-level income and welfare perceptions may reasonably reflect gains beyond the milk enterprise's narrow cash ledger: increased herd size or asset accumulation through breeding, higher home consumption of milk that reduces food expenditure without appearing as recorded income, or income diversification across enterprises. It is also possible that self-reported perception measures are subject to some optimism relative to a strict cost-accounting exercise that most smallholder households would not ordinarily undertake unprompted. Whatever the balance of these explanations, the practical implication is the same: strengthening how

beneficiaries record and manage input costs against enterprise revenue is likely to matter as much for realized household income as increasing production itself.

5.3.4 Challenges Facing PDM Beneficiaries in Cattle Production

The challenges ranking in Section 4.7 sharpen this picture. Livestock disease was the most strongly endorsed constraint, followed by drought and water shortages and limited extension services; delayed release of funds and market access followed, while the perceived inadequacy of the fund amount itself was the lowest ranked, only borderline-neutral item. This ordering is instructive: beneficiaries do not, in the main, regard the size of the PDM grant as their principal constraint. Instead, the constraints they identify as most pressing- animal health, water availability, and extension support- are precisely the complementary services that the perception data in Section 4.5.2 already showed to be the weakest-rated aspects of the programmer's cattle production component. The consistency of this pattern across two independently worded item batteries strengthens confidence that it reflects a genuine feature of beneficiaries' experience rather than an artefact of how either set of questions was framed. It is also consistent with earlier evidence on the quality of clinical veterinary service delivery in rural Uganda, where the animal health system was found to rely on very few qualified veterinarians and to be dominated in practice by informally trained drug shop operators, limiting the reliability of the veterinary care available to smallholder cattle keepers (Ilukor & Birner, 2014). Taken together with Sections 5.3.1 and 5.3.2, the evidence points to a single, crosscutting conclusion: PDM's fund disbursement mechanism itself is functioning in a broadly equitable and administratively adequate way (a near uniform grant, reaching most applicants without major complaint about amount), while the surrounding service ecosystem needed to convert that capital into durable enterprise growth veterinary care, breed improvement, extension contact, and water for production is the programmer's principal point of weakness in the study area.

5.3.5 Socio-Demographic and Other Differentials in PDM Access and Benefit

The tests reported in Section 4.8 offer a partly reassuring picture on equity. PDM beneficiary status was not significantly associated with sex, education level, or, at the conventional 5% threshold, land ownership, indicating that access to the programmer's cattle enterprise component in Amuria District has not been systematically skewed along these lines. Read alongside the targeting finding discussed in Section 5.3.1, this suggests that the equity concern

arising from this study is specifically an asset-based one centered on prior cattle ownership rather than one rooted in sex, education or landholding status.

Two further differentials, while not reaching conventional statistical significance, are close enough to the threshold to warrant attention rather than dismissal. Male respondents reported a somewhat higher household income perception score than female respondents ($p = .078$), a gap that, while not statistically confirmed here, is broadly consistent with patterns documented elsewhere in African livestock economies in which women contribute substantially to day-to-day animal care as the sample composition in this study itself illustrates, while men more often retain control over income from higher-value livestock sales. This finding is suggestive rather than conclusive and would benefit from more targeted investigation before being treated as an established feature of PDM in the study area, though it would not be out of line with broader survey evidence from smallholder Ugandan households showing that livestock ownership, management and the rights to income from livestock sales are not always held by the same household member, so that women's day-to-day involvement in livestock care does not automatically translate into control over the proceeds of higher value sales (Hillesland et al., 2023). By contrast, the cattle production perception score did not differ meaningfully across education levels, indicating that the more critical assessment of PDM's production support services documented in Section 4.5.2 is a broadly shared experience across the beneficiary population rather than one concentrated among any particular education group, reinforcing that the weakness lies in service delivery itself rather than in how well any one group understands or engages with the programme.

5.4 Conclusions

Drawing the discussion together, PDM's cattle enterprise component in Amuria District has been associated with statistically significant, real gains in production output and gross income for the households that provided complete before-and-after records, most clearly in milk production, and to a lesser and more ambiguous extent in bull fattening. These gains, however, are neither uniformly distributed nor unambiguously converted into improved household financial performance. They appear to be concentrated among households that already possessed a cattle asset base before PDM, reflecting a targeting pattern skewed toward existing cattle owners rather than toward the wider population of eligible cattleless households; and, in the case of milk, gross income gains have been substantially eroded by rising production costs,

leaving a majority of milkproducing households with a thin or negative net monthly margin despite higher recorded income.

The programmer's fund disbursement mechanism itself appears to be functioning adequately: grant amounts were almost uniform, and beneficiaries' stated concerns centered far more on animal health, water availability, extension support and market access than on the size of the fund. The principal constraint on PDM realizing its fuller potential in the study area's cattle sector is therefore not the capital injection but the complementary service ecosystem around it, most notably veterinary care, which was the single lowest-rated item across the entire cattle production perception battery and sits alongside livestock disease as the most strongly endorsed challenge facing beneficiaries.

On balance, respondents credit PDM with a modest, statistically significant positive effect on household income and welfare that exceeds their more guarded assessment of its effect on cattle production support services specifically, and the positive correlation between the two perception measures indicates that these two dimensions of experience move together at the household level. This overall pattern- genuine but partial production gains, an adequately functioning disbursement mechanism, a weak complementary service environment, and an asset-based rather than identity-based targeting skew- constitutes the central empirical conclusion of this study regarding PDM's effect on cattle production and household income among cattle keeping households in Amuria District.

5.5 Recommendations

Arising from these conclusions, the following recommendations are directed at the specific actors best placed to act on them.

5.5.1 To PDM Parish and Sub County Implementation Structures

Registration and processing barriers, rather than disinterest, account for the great majority of non-participation in the cattle enterprise component (Section 4.4.1). Parish and Sub County PDM structures should review and streamline the registration and verification process, provide clearer and more consistent communication to applicants about the status of their registration, and establish a straightforward channel through which applicants can identify and correct processing errors rather than being excluded by them. Given the demonstrated skew toward households that already own cattle (Section 4.4.3), implementers should also consider

deliberate outreach and, where feasible, targeted support to eligible cattle less households so that the programmer's cattle enterprise pathway does not become, in practice, a pathway mainly available to households already holding a livestock asset base.

5.5.2 To Veterinary and Agricultural Extension Service Providers

Veterinary access was the lowest-rated item in the entire cattle production perception battery, and livestock disease was the most strongly endorsed challenge facing beneficiaries. District and Sub County veterinary and extension departments should priorities PDM cattle beneficiaries for community animal health worker coverage, mobile veterinary outreach, and more frequent, farmer-group-based extension contact, rather than relying on beneficiaries to seek out these services individually. Because breed improvement and input access were also among the lowest-rated services, linking extension visits to practical breeding and feeding guidance, rather than general messaging alone, is likely to have a more direct bearing on production outcomes.

5.5.3 To SACCOs and Fund Managers

Because a majority of milk-producing households are recording thin or negative net monthly margins despite higher gross income, SACCOs and other fund managers administering the PDM cattle enterprise grant should incorporate basic enterprise recordkeeping and cost budgeting guidance into their engagement with beneficiaries, so that households can track input costs against sales rather than judging enterprise performance on gross income alone. Group-based input procurement for feeds, veterinary drugs and accaricides, coordinated through SACCOs, could also help beneficiaries reduce the recurrent costs that are currently eroding milk margins.

5.5.4 To Local Government and Water for Production Actors

Drought and water shortages were the second most strongly endorsed challenge facing beneficiaries. Local government departments responsible for water-for-production infrastructure should coordinate more closely with PDM cattle enterprise implementation in Amuria District, prioritizing valley tanks, boreholes and other livestock water sources in parishes with a high concentration of PDM cattle beneficiaries, so that water availability does not continue to constrain the returns to cattle enterprise investment already made.

5.5.5 To National PDM Policy and Programme Design

At the design level, the near uniform flat grant amount, while administratively simple and evidently distributed without major complaint about its size, may be insufficient on its own to move an enterprise such as bull fattening, which has an inherently lumpy, longer-cycle return beyond incremental gains. Programme designers at the national level may wish to consider a graduated or top-up funding model for cattle enterprises with longer production cycles, alongside continued investment in the complementary veterinary, extension and water infrastructure services that this study identifies as the more binding constraint on cattle enterprise performance than fund size itself.

5.6 Limitations of the Study

This study has several limitations that should be borne in mind when interpreting its findings. First, before and after production and income figures were obtained retrospectively from respondent recall rather than from contemporaneous records, and are therefore subject to recall bias. Second, the number of valid paired observations varied considerably across indicators and enterprises, from as few as six to nine for ploughing to over seventy for the milk enterprise, so the ploughing, ghee/butter and yoghurt findings in particular should be treated as indicative rather than generalizable. Third, the ten-item cattle production perception battery showed only modest internal consistency on complete cases, which somewhat limits confidence in its composite score, although the item-level analysis used throughout this chapter mitigates this concern. Fourth, the study was confined to one district and cannot be assumed to generalize to PDM parishes with different livestock systems, market access conditions or implementation arrangements elsewhere in the country. Finally, and most importantly, the study design is correlational rather than experimental: without a comparison group of similar non beneficiary households, it is not possible to fully separate the effect of PDM itself from the effect of general trends in the cattle sector, rainfall patterns, or other factors that could have influenced production and income over the same period regardless of PDM participation.

5.7 Areas for Further Research

Future research could usefully track a panel of the same PDM beneficiary households across successive funding cycles to establish whether the production and income gains documented here are sustained, and could incorporate a matched comparison group of no beneficiary cattle

keeping households to better isolate PDM's marginal effect from broader sectorial trends. Given the marginal, no significant sex difference in household income perception observed in this study, a more targeted, qualitative investigation of gendered control over cattle-derived income within PDM beneficiary households, set against women's evident central role in day-to-day cattle husbandry, would be a valuable complement to the quantitative findings presented here. A focused study of bull fattening cash flow timing and cost structure would help clarify why output gains in that enterprise have not yet translated into higher realized income, and a comparative assessment of alternative veterinary and extension delivery models would help identify the most cost-effective way to close the service gap that this study identifies as the principal constraint on PDM's cattle enterprise performance in Amuria District.

CHAPTER SIX: CONCLUSIONS AND RECOMMENDATIONS

6.1 Introduction

This chapter presents the conclusions and recommendations arising from the findings of the study on the effect of the Parish Development Model (PDM) on cattle productivity and household income in Amuria District, Eastern Uganda. The conclusions are based on the study objectives and the results presented and discussed in the preceding chapters. The chapter also provides recommendations to stakeholders involved in the implementation of PDM and cattle production in the study area.

6.2 Conclusions

6.2.1 Effect of PDM Participation on Cattle Productivity and Household Income

The study concludes that participation in the Parish Development Model was associated with improvements in some aspects of cattle production and household income among the households that provided complete before-and-after information. Milk production increased from an average of 32.9 litres per month before PDM to 38.4 litres per month after PDM, representing a 16.6% increase. The quantity of milk sold increased by 56.2%, while estimated monthly milk income increased from approximately UGX 27,899 to UGX 65,876, representing a 136.1% increase. These changes were statistically significant.

Similarly, bull-fattening output increased from an average of 2.5 kg to 4.0 kg of live-weight equivalent per month, representing a 61.2% increase. However, the increase in bull-fattening output did not result in a statistically significant increase in estimated monthly income. This indicates that increased physical production did not necessarily translate into proportional financial gains.

The study therefore concludes that PDM participation was associated with positive changes in cattle production, particularly milk production and bull-fattening output, but the effect on realized household financial returns was partial and uneven. The findings further show that increased production costs reduced the net benefits of cattle enterprises. In milk production, although gross income increased, 57.7% of households with both income and expenditure information recorded a net monthly loss after production costs were considered.

6.2.2 Knowledge, Attitudes and Practices/Perceptions of Farmers towards PDM

The study concludes that farmers' perceptions of PDM differed between cattle production and household income. The overall cattle-production perception score was 2.67, which was below the neutral midpoint of 3.0. Farmers were particularly critical of access to veterinary services, improved cattle breeds, extension services and livestock inputs.

In contrast, the household-income perception score was 3.19, which was significantly above the neutral midpoint. Respondents therefore perceived PDM more positively in relation to household income than in relation to the supporting services for cattle production.

The positive and statistically significant relationship between perceived cattle-production benefits and perceived household-income benefits ($r = 0.55$, $p < .001$) further indicates that households perceiving greater improvements in cattle production also tended to perceive greater improvements in household income.

The study therefore concludes that PDM has contributed to perceived improvements in household income, but weaknesses in complementary agricultural and veterinary services have limited the extent to which farmers perceive improvements in cattle production.

6.2.3 PDM Targeting and Participation

The study concludes that PDM beneficiary status was significantly associated with prior cattle ownership. Households that already owned cattle before PDM were more likely to become beneficiaries than households that did not own cattle before the programme. Prior cattle ownership was associated with PDM beneficiary status at $\chi^2(1) = 13.08$, $p < .001$.

However, beneficiary status was not significantly associated with sex, education level or land ownership. This suggests that the major targeting concern identified by the study was related to existing cattle ownership rather than these socio-demographic characteristics.

The study therefore concludes that the cattle enterprise component of PDM has reached households with an existing livestock asset base to a considerable extent. This may limit access to the cattle enterprise pathway for eligible households that did not previously own cattle.

6.2.4 Major Challenges Affecting PDM Cattle Enterprises

The study concludes that livestock diseases were the most important challenge affecting the benefits of PDM cattle enterprises. This was followed by drought and water shortages, limited extension services, delayed release of PDM funds and inadequate market access.

The size of the PDM fund was not identified as the strongest challenge. This indicates that providing financial capital alone may not be sufficient to sustain improvements in cattle productivity and household income. Farmers also require reliable veterinary services, water, extension support, appropriate inputs and functional markets.

Overall, the study concludes that the sustainability of PDM-supported cattle enterprises depends not only on access to funds but also on the availability of complementary production and support services.

6.3 Recommendations

6.3.1 To PDM Parish and Sub-county Implementation Structures

PDM implementation structures at parish and sub-county levels should improve the registration, verification and beneficiary-selection processes. Clear information should be provided to applicants concerning registration requirements, selection procedures and the status of their applications. Mechanisms should also be established to enable farmers to correct registration and processing errors.

There should also be deliberate efforts to identify and support eligible households that did not own cattle before PDM so that the cattle enterprise component can reach a wider range of farming households.

6.3.2 To Veterinary and Agricultural Extension Service Providers

The district and sub-county veterinary and agricultural extension departments should strengthen veterinary and extension services for PDM cattle beneficiaries. Community animal health workers, mobile veterinary services and farmer-group extension activities should be expanded in areas with high concentrations of PDM cattle beneficiaries.

Extension services should provide practical guidance on cattle disease prevention, feeding, breeding, housing, record keeping and enterprise management. Particular attention should be

given to improving access to veterinary services because this was the lowest-rated cattle-production support service in the study.

6.3.3 To SACCOs and PDM Fund Managers

SACCOs and other institutions responsible for administering PDM funds should provide beneficiaries with basic training in enterprise record keeping, budgeting and cost management. Farmers should be encouraged to record production costs, quantities produced, sales and income so that they can determine the actual profitability of their cattle enterprises.

SACCOs should also explore group-based procurement of commonly used cattle inputs such as feeds, veterinary drugs and acaricides where feasible. This may help farmers reduce recurrent production costs and improve the net returns from cattle enterprises.

6.3.4 To Amuria District Local Government and Water-for-Production Authorities

The district local government should strengthen coordination between PDM cattle-enterprise implementation and water-for-production programmes. Priority should be given to areas with high concentrations of cattle farmers and PDM beneficiaries.

Development and rehabilitation of valley tanks, boreholes and other livestock water sources should be strengthened to reduce the effects of drought and water shortages on cattle production.

6.3.5 To National PDM Programme Planners

PDM programme planners should consider whether the standard grant structure is appropriate for cattle enterprises with different production cycles. Enterprises such as bull fattening may require longer periods before returns are realised. Programme design could therefore consider differentiated or supplementary support where appropriate, while maintaining accountability and proper enterprise planning.

National and district PDM structures should also place greater emphasis on complementary services such as veterinary care, extension, water and market access because the study identified these as important constraints to achieving sustained benefits from PDM cattle enterprises.

6.4 Areas for Further Research

Further studies should follow the same PDM beneficiary households over several production cycles to determine whether the observed improvements in cattle production and income are sustained over time.

Future research should also include a matched group of non-beneficiary cattle-keeping households to provide a stronger basis for separating PDM-associated changes from changes resulting from other factors such as rainfall, livestock markets, disease outbreaks and general changes in cattle prices.

A qualitative study should be conducted to examine gender roles in cattle production and control over income from cattle enterprises, particularly because women constituted a large proportion of respondents and were involved substantially in day-to-day cattle management.

Further research should also examine the costs and timing of returns from bull fattening to establish why increased output did not result in a statistically significant increase in reported monthly income.

Finally, comparative research on different veterinary and agricultural extension service-delivery models would help identify approaches that can improve animal health, cattle productivity and household income among PDM beneficiaries in Amuria District.

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ACTIVITY WORKPLAN

Activity	Month 1	Month 2	Month 3	Month 4	Month 5	Month 6
PROPOSAL development	•					
Proposal review and approval	•	•				
Tool development (questionnaire development)		•				
Pre testing of data collection tool		•				
Field data collection (household survey)			•	•		
Data cleaning and analysis					•	
Defense of research						•

SAMPLE QUESTIONNAIRE

TOPIC: EFFECT OF THE PARISH DEVELOPMENT MODEL (PDM) ON CATTLE PRODUCTION AND HOUSEHOLD INCOME IN AMURIA DISTRICT, UGANDA

INTRODUCTION

Dear Respondent,

I am a student of Busitema University conducting a study on the Effect of the Parish Development Model (PDM) on cattle production and household income in Amuria District. The information provided will be used strictly for academic purposes and will be treated with utmost confidentiality.

Instructions:

Please indicate your level of agreement with each statement by ticking (✓) the appropriate response.

SECTION A: RESPONDENT IDENTIFICATION AND GPS INFORMATION

Questionnaire Number: _____

Date of Interview: ____ / ____ / ____

Name of Enumerator: _____

Sub-County:

- ☐ Amolo
- ☐ Wera

Parish:

- ☐ Ocor
- ☐ Golokwara
- ☐ Angole
- ☐ Asalatap

Village: _____

GPS Coordinates

Latitude: _____

Longitude: _____

Altitude (Optional): _____

GPS Accuracy (meters): _____

Time GPS Recorded: _____

Scale:

1 = Strongly Disagree (SD)

2 = Disagree (D)

3 = Neutral (N)

4 = Agree (A)

5 = Strongly Agree (SA)

SECTION A: RESPONDENT'S BACKGROUND INFORMATION

1. Sex

- ☐ Male
- ☐ Female

2. Age

- ☐ 18–30
- ☐ 31–40
- ☐ 41–50
- ☐ Above 50

3. Education Level

- ☐ No Formal Education
- ☐ Primary

☐ Secondary

☐ Tertiary

4. Household Size

_____ Persons

5. PDM Beneficiary

☐ Yes

☐ No

SECTION B: EFFECT OF PDM ON CATTLE PRODUCTION

Statement	SD	D	N	A	SA
PDM has enabled me to increase the number of cattle owned.	☐	☐	☐	☐	☐
PDM has improved access to veterinary services.	☐	☐	☐	☐	☐
PDM has improved cattle feeding practices on my farm.	☐	☐	☐	☐	☐
PDM support has reduced cattle mortality.	☐	☐	☐	☐	☐
PDM has increased milk production on my farm.	☐	☐	☐	☐	☐
PDM has improved access to livestock inputs.	☐	☐	☐	☐	☐
PDM has encouraged adoption of improved cattle breeds.	☐	☐	☐	☐	☐
Agricultural extension services under PDM have improved cattle management.	☐	☐	☐	☐	☐
Cattle production is higher now than before PDM implementation.	☐	☐	☐	☐	☐
Overall, PDM has positively affected cattle production.	☐	☐	☐	☐	☐

SECTION C: EFFECT OF PDM ON HOUSEHOLD INCOME

Statement	SD	D	N	A	SA
Income from cattle production has increased due to PDM.	☐	☐	☐	☐	☐
Household savings have increased after participating in PDM.	☐	☐	☐	☐	☐
PDM has improved my household's ability to meet basic needs.	☐	☐	☐	☐	☐
Household expenditure on education has improved due to increased income.	☐	☐	☐	☐	☐

Household expenditure on healthcare has improved due to increased income.	☐ ☐ ☐ ☐ ☐
PDM has increased market participation for livestock products.	☐ ☐ ☐ ☐ ☐
Household assets have increased since joining PDM.	☐ ☐ ☐ ☐ ☐
PDM has reduced poverty in my household.	☐ ☐ ☐ ☐ ☐
My household income is higher now than before receiving PDM support.	☐ ☐ ☐ ☐ ☐
Overall, PDM has positively affected household income.	☐ ☐ ☐ ☐ ☐

SECTION D: CHALLENGES FACED BY PDM BENEFICIARIES

Statement	SD D N A SA
Delayed release of PDM funds affects cattle production.	☐ ☐ ☐ ☐ ☐
The amount of PDM funds received is inadequate.	☐ ☐ ☐ ☐ ☐
Livestock diseases limit the benefits of PDM.	☐ ☐ ☐ ☐ ☐
Drought and water shortages affect cattle production.	☐ ☐ ☐ ☐ ☐
Limited extension services affect successful implementation of PDM.	☐ ☐ ☐ ☐ ☐
Market access remains a challenge despite PDM support.	☐ ☐ ☐ ☐ ☐

SECTION E: OPEN-ENDED QUESTIONS

1. In your opinion, how has PDM affected cattle production in your household?

.....

2. What improvements would you recommend for the PDM program?

.....

Appendix

Activity photos



Figure 1 : livestock fattening



Figure 2: milk herd

THANK YOU FOR YOUR PARTICIPATION