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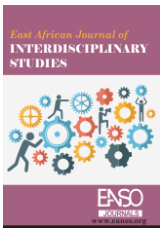

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Original Article

The Impact of Small Livestock Project Intervention on Household Welfare in Rwanda. A Case Study of the Prism Project in Burera District

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ABSTRACT

Livestock remains a cornerstone of rural livelihoods worldwide, contributing significantly to food security, economic growth, and poverty reduction. Globally, over 1.3 billion people rely on livestock, which contributes around 40% to agricultural GDP (FAO, 2018). In developing economies, livestock development is a critical pathway for improving rural well-being. In East Africa, livestock supports rural development by providing employment, export income, and nutrition (Thornton, Herrero, & Ericksen, 2020). For example, Kenya's East Africa Dairy Development (EADD) project increased milk production by 80% through private-sector partnerships and milk collection hubs. In Rwanda, where 72% of the population depends on agriculture, small livestock programs like Girinka have enhanced rural livelihoods by increasing milk production and household income. Despite its importance, the sector faces significant global challenges, including climate change, zoonotic diseases, and market instability. Uganda experienced a 60% livestock mortality rate in 2021, with 40% of poultry losses due to Newcastle disease. Rwanda faces 30% post-harvest losses due to market barriers, and Somalia's pastoralists have lost up to 60% of their herds during droughts. Rural areas in Rwanda, including Burera District, continue to experience malnutrition, poverty, and limited market access. To address these gaps, the PRISM project was introduced to distribute livestock, improve markets, provide training, and empower farmers through self-help groups (Heifer International, 2023). However, the project's localized impact had not been fully assessed. This study evaluated PRISM's effectiveness in Burera District using a mixed-methods approach. Quantitative data from 314 beneficiaries were analyzed with SPSS, while qualitative insights came from focus groups and interviews. Results showed a strong uptake of core interventions: livestock distribution (86.6%), training (92.9%), income diversification (92%), and access to animal-source foods (99.4%). Yet, challenges remained in gender equity training (40.8%), veterinary services (59.6%), and market linkage (19.4%). The findings underscore the need for integrated policies that combine grassroots empowerment with private-sector

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partnerships and subsidized services. This study informs Rwanda's agricultural policies and offers scalable lessons for similar contexts in Africa.

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INTRODUCTION

Livestock development serves as a critical pathway for improving rural livelihoods in developing economies. In Rwanda, where 72% of the population depends on agriculture, small livestock interventions have emerged as key tools for poverty alleviation and food security enhancement. This study examines the impact of the Partnership for Resilient and Inclusive Small Livestock Markets (PRISM) project implemented in Burera District, which represents a comprehensive approach combining livestock distribution, capacity building, market access facilitation, and climate resilience strategies.

Livestock serves as a cornerstone for rural livelihoods across the globe, providing essential contributions to food security, economic growth, and poverty alleviation. The livestock sector supports the livelihoods of over 1.3 billion people and contributes approximately 40% to agricultural GDP worldwide (FAO, 2018). Despite its significance, the sector faces global challenges such as climate change, zoonotic diseases, and market volatility, which hinder its full potential in achieving sustainable development. Recognizing this, international frameworks such as the Sustainable Development Goals (SDGs) underscore the importance of sustainable livestock systems in achieving SDG 1 (No Poverty), SDG 2 (Zero Hunger), and SDG 13 (Climate Action) (United Nations Development Programme (UNDP, 2020).

Small livestock initiatives have demonstrated varied success across Sub-Saharan Africa and Asia, offering critical lessons for Rwanda's PRISM project. In Kenya, the East Africa Dairy Development (EADD) project increased milk production by 80% by prioritizing private-sector partnerships and milk collection hubs, while Uganda's NAADS program collapsed due to inadequate veterinary support and training, leading to 60% livestock mortality. Similarly, India's National Livestock Mission reduced poultry mortality by 30% through subsidized vaccines and women-led cooperatives, contrasting with Tanzania's Southern Highlands program, where weak market linkages left farmers dependent on exploitative middlemen. These cases underscore that success hinges on integrated interventions addressing feed affordability (as PRISM's beneficiaries highlight), ensuring market access,

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and embedding community accountability, a principle mirrored in Heifer's 12 Cornerstones. Failures, such as Zambia's mismanaged livestock project, further stress the need for transparency, a challenge PRISM mitigates through its SHG model. For Burera

In East Africa, livestock is a key driver of rural development, providing employment, export revenue, and a critical source of income and nutrition for millions (Thornton, Herrero, & Ericksen, 2020). However, disease outbreaks, limited access to markets, and climate variability pose significant challenges. Regional frameworks such as the East African Community's (EAC) Agriculture and Food Security Policy emphasize disease control, market integration, and value chain improvements to address these challenges (East African Community, 2022). Persistent challenges threaten progress: Uganda lost 40% of its poultry stock to Newcastle disease in 2021, Rwanda faces 30% post-harvest losses due to market barriers, and Somalia's pastoralists suffer 60% herd reductions during droughts. Regional frameworks such as the East African Community's (EAC) Agriculture and Food Security Policy specifically target these vulnerabilities.

In Rwanda, livestock development is integral to national strategies, including Vision 2050 and the National Strategy for Transformation (NST1) (Republic of Rwanda, 2020). Programs like Girinka have demonstrated success in improving rural livelihoods by increasing milk production and household income (Ministry of Agriculture and Animal Resources (MINAGRI, 2021). However, rural districts, such as Burera, still face significant challenges, including malnutrition, low incomes, and limited market access (RAB, 2022).

In Rwanda, the PRISM project seeks to address these issues by promoting small livestock productivity, enhancing market linkages, and fostering community resilience (Heifer International, 2023). However, there is limited empirical evidence on the actual impact of PRISM's interventions, creating a need for comprehensive research to evaluate its effectiveness and inform future policy and program designs.

OBJECTIVES

To evaluate the impact of the PRISM project on improving household welfare in Burera District.

Specific Objectives

- **To assess the implementation and adoption of PRISM's core interventions** (independent variables), including livestock distribution, capacity-building training, market facilitation, and climate-smart agriculture support among beneficiaries in Burera District.
- **To evaluate changes in household welfare indicators** (dependent variables) by measuring income levels and diversification, Frequency and diversity of animal-source food consumption, Market participation rates, and Climate adaptation capacity
- **To analyze pathways linking interventions to outcomes**, focusing on:
  - The mediating role of social capital (SHGs, Heifer's 12 Cornerstones).
  - The moderating effect of resource access (veterinary services, feed).
  - The influence of environmental factors (climate variability, disease)

METHODOLOGY

Study Design

A descriptive-correlational design was used to assess relationships between PRISM interventions and welfare outcomes.

Quantitative Data Collection

- **Sampling**: Stratified random sampling (Taro Yamane's formula, n= 314) ensured proportional representation of pig (86) and chicken (228) farmers.

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- **Instruments**: Structured questionnaires covered income, food security, and market access. Data were analyzed using SPSS v29 (descriptive/inferential statistics).

Qualitative Data Collection

- **Focus Group Discussions (FGDs)**: 51 SHGs explored beneficiary experiences.
- **Key Informant Interviews (KIIs)**: 27 stakeholders provided implementation insights.
- **Analysis**: Thematic coding (NVivo) identified key themes like market barriers and SHG efficacy.

Study Setting:

This study focuses on Burera District in Rwanda's Northern Province, specifically targeting five administrative sectors (Rusarabuye, Rugengabali, Kivuye, Gahunga, and Cyanika) where the PRISM project is implemented.

Study Population

The study population consists of households in Burera District that have benefited from the PRISM small livestock project amounting to 1,451 beneficiaries (399 recipients of pigs and 1,052 recipients of SASSO chickens), and key stakeholders, including project implementers, local government officials, and veterinary service providers, will also be considered. The target population comprises.

Table 1: Targeted Population Lies on PRISM Project Beneficiaries in Burera District as of 31 December 2024

Sectors	# of SHGs	Self-Help Group Name	# of SHG Members		
			M	F	Total
SHGs of SASSO chicken farmers					
Cyanika	1	Twisungane Gisovu	5	4	**9**
	2	Abahujumugambi Gisovu	13	14	**27**
	3	Imbere Heza Gisovu	17	13	**30**
	4	Tuzamurane	7	22	**29**
	5	Duterimbere	6	16	**22**
	6	Twitezimbere	12	14	**26**
	7	Icyerekezo	14	12	**26**
	8	Tuzamurane	15	11	**26**
	9	Twiyubake	10	16	**26**
	10	Abadahigwa	8	18	**26**
Gahunga	11	Abishyizehamwe	8	7	**15**
	12	Indangamirwa Gisizi	9	11	**20**
	13	Tujyanigihe	9	10	**19**
	14	Tuzamurane	9	6	**15**
	15	Twitezimbere	10	21	**31**
	16	Dufatanye	9	17	**26**
	17	Duterimbere	13	12	**25**
	18	Abadacogora ku murimo	13	14	**27**
Kivuye	19	Dufatanye Buhita	9	20	**29**
	20	Ejoheza	9	16	**25**
	21	Terimbere	8	15	**23**
	22	Abishyizehamwe	11	14	**25**

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Sectors	# of SHGs	Self-Help Group Name	# of SHG Members		
			M	F	Total
	23	Tuzamurane	6	21	**27**
	24	Twitezimbere	10	19	**29**
	25	Tuzamurane	12	16	**28**
	26	Twikuremubukene	10	17	**27**
	27	Imbereheza	16	14	**30**
Rugengabali	28	Imbereheza Cyogo Remera	8	10	**18**
	29	Ubufatanye Taba Musheke	13	7	**20**
	30	Twitezimbere	16	17	**33**
	31	Icyerekezo	9	18	**27**
	32	Twizamure	12	11	**23**
	33	Dukore	8	14	**22**
	34	Indatwa	7	19	**26**
	35	Bandebereho	19	16	**35**
Rusarabuye	36	Tugirubuzimabwiza	20	11	**31**
	37	Twitezimbere Ruhura	21	11	**32**
	38	Dukangukiramajyambere	16	11	**27**
	39	Twitezimbre Ndago	10	20	**30**
	40	Tuzamurane Ndago	14	16	**30**
	41	Abesamihigo	9	21	**30**
S/Total	**41**		**460**	**592**	**1,052**
SHGs of pig Farmers					
Cyanika	1	Terimbere Mworozi	24	10	**34**
	2	Tworozanye	15	15	**30**
Gahunga	3	Turwanye Ubukene	12	16	**28**
	4	Twiyubake	8	17	**25**
Kivuye	5	Tuganeheza	10	15	**25**
	6	Dufatanyicyizere	13	9	**22**
	7	Imbereheza Kanyenzugi	6	20	**26**
	8	Imbereheza shanja	9	14	**23**
	9	Twivanemubukene	11	14	**25**
Rugengabari	10	Tuzamurane	9	8	**17**
	11	Izihirwe	9	8	**17**
	12	Ororaneza	18	16	**34**
Rusarabuye	13	Abunzubumwe Rutuku	5	17	**22**
	14	Twitezimbere Busutamo	5	13	**18**
	15	Twiyubake Buzamuye	10	9	**19**
	16	Twungurane Murambo	5	11	**16**
	17	Tuzamurane Munanira	11	7	**18**
S/Total	**17**		**180**	**219**	**399**
Total (SHGs) 58			**640**	**811**	**1,451**

Source: PRISM Project Report (Heifer, 2024)

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Data Collection:

Sample Size:

Using Taro Yamane's formula (1967):

$$\boldsymbol{n = \frac{N}{1 + N(e)^2}\ therefore\ n = \frac{1451}{1 + 1451\ (0.05)^2} = 313.56 \approx 314}$$

Where:

n = Sample size

N = Total population size

e = Margin of error (5%)/ Degree of error expected

The calculated sample size is approximately 314 beneficiaries Stratified random sampling was employed to ensure the representation of both pig and chicken beneficiaries.

Sampling Technique

Stratified Random Sampling

Ensures proportional representation of both livestock types in the sample, accounting for their different value chains and management requirements.

Taro Yamane's Formula for Sample Size Determination

Calculation:
n=N1+N(e)2=14511+1451(0.05)2=314**n**=**1**+**N**(**e**)**2N**=1+1451(0.05)21451=314

Parameters:

Population (N) = 1,451

Margin of error (e) = 5%

Output

314 beneficiaries sampled (228 chicken farmers, 86 pig farmers)

Purposive Sampling for Key Informants

Application:

27 key informants selected from Local authorities (8), PRISM staff (2), Community Facilitators (10), Veterinary experts (5) and RAB station manager (1)

Cluster Sampling for Focus Groups

Application:

51 Self-Help Groups (SHGs) were sampled from 58 total groups:

- 36 chicken farmer SHGs

15 pig farmer SHGs

Data Collection Instruments

- **Structured Questionnaires**

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Structured questionnaires were administered to 314 PRISM project beneficiaries, selected through stratified random sampling to ensure representation of both pig farmers (86 respondents) and chicken farmers (228 respondents). The questionnaire comprised seven thematic sections, each targeting specific welfare indicators aligned with the study's objectives. Demographic Profile, Household Income, Food Security, Market Access, Self-Help Groups and 12 Cornerstones, Climate-Smart Agriculture, Challenges and Satisfaction were all assessed during data collection.

- **Focus Group Discussions (FGDs)**

Focus group discussions have been conducted with selected self-help groups. FGD has provided insights into participants' experiences with project interventions, such as livestock distribution, market facilitation, and community empowerment. The focus group discussions have been guided by a semi-structured protocol to ensure the collection of relevant data while allowing for flexibility.

The targeted focus group discussions have been conducted within 51 Self-Help Groups, including 36 SHGs of chicken farmers and 15 SHGs of pig farmers.

- **Key Informant Interviews**

Key Informant Interviews were conducted to gather in-depth qualitative insights from stakeholders directly involved in PRISM project implementation and oversight. It provided expert perspectives on project design, implementation challenges, and systemic impacts that could not be captured through household surveys.

- **Selection of Participants**

A purposive sampling technique was used to select 27 key informants representing five critical stakeholder groups:

Table 2: Key Informants Representing Five Critical Stakeholder Groups

Stakeholder Category	Number	Rationale for Inclusion
Local Authorities (VM Asoc, Dir ANRU, DARO, SAROs)	8	Provided policy and administrative insights
PRISM Field Staff (LDO, CM&EO)	2	Offered implementation perspectives
Community Facilitators (CFs)	10	Shared grassroots-level challenges
Community Agro-Veterinary Entrepreneurs (CAVEs)	5	Expertise on veterinary service delivery
RAB Station Manager	1	Technical oversight of livestock health

Observation Checklists

Observation involved direct field visits to PRISM project sites to assess infrastructure, livestock conditions, and community engagement. Data have been recorded using observation checklists to ensure consistency and accuracy.

Data Analysis

The collected data were coded in MS Excel and then imported into SPSS v29 for analysis. Data were checked for possible errors and any missing values before analysis. Data cleaning and analysis were also performed.

The study applied a range of descriptive and inferential statistical techniques to analyze socio-demographic characteristics, welfare indicators, and the effects of various interventions. Descriptive statistics, including frequency distributions, measures of central tendency (mean, median), and dispersion (standard deviation, range), were used to summarize key quantitative variables. Inferential analyses began with Chi-square tests to examine associations between categorical variables, while logistic regression was employed to predict binary outcomes based on key predictors such as intervention type and market access. A Difference-

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in-Differences approach was also used to assess changes over time between intervention and control groups. To ensure the reliability of Likert-scale survey items, internal consistency was tested using Cronbach's Alpha, with a threshold of $\alpha \geq 0.7$. Qualitative data from focus group discussions and key informant interviews were analyzed thematically using NVivo software or manual coding, allowing the identification of key themes and triangulation with quantitative findings. Finally, correlation analysis was conducted to assess the relationships between continuous and ordinal variables using Pearson's r or Spearman's ρ, depending on the nature of the data.

Ethical consideration

Ethical approval was received from the University Lay of Adventists of Kigali ethical review board, and permission to collect data was obtained from Burera District and PRISM project management. Participants were provided with printed informed consent forms for their voluntary participation, and consent was obtained from all participants. Participants were assured of their confidentiality. Personal information was kept anonymous to protect respondents' privacy. All procedures involving human participants were conducted in accordance with the ethical standards set by the institutional and national research committees, as well as the 1964 Helsinki Declaration and its subsequent amendments, or other comparable ethical guidelines**.**

PRESENTATION OF STUDY RESULTS

The study's findings reveal significant impacts of the PRISM project on household welfare in Burera District, supported by robust quantitative data and enriched qualitative insights. Below is a synthesis of key trends, with detailed tables streamlined to focus on critical outcomes (full datasets for tables are provided in the Appendixes).

Socio-Demographic Characteristics

A majority of participants were female (53.5%), reflecting PRISM's gender-inclusive approach, while middle-aged respondents (31–50 years, 65%) dominated, underscoring their role as primary livelihood decision-makers. Marital stability was prevalent (84% married), though widowed (11%) and single (3%) households highlighted potential vulnerabilities. Most beneficiaries had primary education (73%), signalling the need for literacy-aligned training, while 96% relied solely on farming, emphasizing agricultural dependency (Tables 3–7).

Household Income and Economic Resilience

PRISM interventions drove income diversification (92%) and livestock sales (86%), yet structural barriers persisted. Over 97% of households earned ≤RWF 50,000 monthly, with income primarily allocated to essentials: 93% for food, 76% for school fees, and 84% for savings (Tables 8–12). Qualitative insights revealed that SHGs enabled women to "pay school fees independently" (FGD participant), though high feed costs (90%) constrained profitability.

Food Security and Nutrition

Nearly all households (99%) gained access to animal-source foods, predominantly eggs (91%), yet daily consumption remained low (23%). Focus groups attributed sporadic consumption to market-oriented production: "We sell eggs to buy other foods" (FGD participant). Climate-smart agriculture boosted vegetable production (85%), but irregular rainfall limited resilience gains (Table 13–15, 24).

Market Access and Linkages

While 90% of beneficiaries accessed PRISM-supported markets, only 19% reported better prices due to middlemen's dominance. Proximity to markets (<5 km for 76%) reduced transport costs, yet 23% cited limited bargaining power (Tables 16–18). Key informants noted that "market

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infrastructure alone cannot ensure fair pricing" without value-chain interventions.

Community Empowerment and Climate Resilience

Universal SHG membership (100%) strengthened social capital, with 88% citing improved savings and 80% accessing loans. Heifer's 12 Cornerstones, particularly *Sustainability and Self-Reliance* (94%), were pivotal in fostering collective action. However, climate vulnerability persisted for 57% of households, despite forage seed distribution (67%) and training (72%) (Tables 19–24).

Persistent Challenges

Feed costs (90%), veterinary service gaps (59%), and gender equity training gaps (41%) emerged as critical barriers. Qualitative data echoed these findings: "Vets are too expensive and far" (KII respondent), while limited market linkages left farmers "dependent on middlemen" (FGD participant) (Tables 25–26).

Integration of Qualitative Insights

Focus groups and interviews contextualized quantitative trends. For instance, while 100% of respondents were SHG members, qualitative data revealed that groups strengthened "trust and shared learning" (FGD participant). Similarly, market infrastructure improvements (82%) were tempered by qualitative reports of "unstable prices" (KII respondent), highlighting the need for complementary policies.

STUDY FINDINGS DISCUSSION

The study evaluates the impact of the PRISM project on household welfare in Burera District, Northern Province of Rwanda, revealing both successes and persistent challenges. The findings align with global and regional literature on small livestock interventions while contributing context-specific insights for Rwanda. Below is a synthesis of key results, contextualized within existing empirical and theoretical frameworks.

Income and Economic Resilience

PRISM's income diversification (92%) aligns with Ellis' (1998) livelihood theory but falls short of Kenya's EADD project, which raised milk production by 80% through private-sector integration. Structural barriers like feed costs mirror IFAD (2023) findings, urging subsidies or PPPs.

Community Empowerment

Universal SHG membership (100%) and Heifer's 12 Cornerstones adoption (94.3%) echo Dalsgaard et al. (2015), linking collective action to resilience. However, PRISM outperformed Uganda's NAADS program, which collapsed due to poor veterinary support.

Climate-Smart Agriculture

Seed distribution (87.9%) boosted vegetable production, yet climate resilience lagged behind India's National Livestock Mission, which reduced poultry mortality by 30% through subsidized vaccines.

CONCLUSIONS

The PRISM project demonstrated significant success in enhancing household welfare in Burera District, Rwanda, through strong uptake of core interventions. Livestock distribution reached 86.6% of beneficiaries, while training programs achieved 93% participation, driving income diversification (92%) and improved access to animal-source foods (99.4%). Universal Self-Help Group (SHG) membership and the adoption of Heifer's 12 Cornerstones fostered social capital, with 87.9% of households reporting increased savings. However, systemic barriers such as high feed costs (89.8%), limited market linkages (19.4%), and gaps in veterinary services (59.6%) hindered transformative economic gains, as 97.7% of households remained below RWF 50,000 monthly income. Climate-smart agriculture interventions enhanced resilience, yet 57.3% of households still faced vulnerability to climate shocks.

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This study's findings are subject to limitations, including reliance on self-reported data, which may introduce response bias, and its geographic focus on Burera District, which limits generalizability to other regions. Future research should employ longitudinal designs to evaluate the sustainability of PRISM's impacts over time and assess scalability in diverse agro-ecological zones. Integrating private-sector partnerships, subsidized input systems, and policy alignment with national frameworks could further amplify the project's reach, offering a replicable model for achieving SDG targets on poverty reduction and food security in Rwanda and similar contexts.

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Competing Interests

The authors declare that they have no financial or personal relationships that may have inappropriately influenced them in writing this article.

Author Contributions

The research, led by Samuel NSENGIMANA, investigated the impact of the PRISM project on household welfare in Burera District, Rwanda. The researcher designed the study framework, conducted an extensive literature review, managed and supervised data collection and analysis, interpreted the findings, and authored the final manuscript for publication.

Dr. Denys Uwimpuhwe provided essential guidance and supervision throughout the study. He played a key role in shaping the study design, offered insightful input in refining and structuring the literature review, assisted in evaluating the validity and reliability of the research instruments, and ensured that the data analysis and interpretation remained aligned with the study's objectives.

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Data Availability Statement

Upon reasonable request, the corresponding author will provide the data that supports this study's findings.

Disclaims

The writers' personal beliefs and viewpoints are reflected in this article but do not necessarily reflect the official policy or position of any affiliated agency of the authors.

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APPENDIXES

Table 3: Sex of Respondents

SN	Sex	Frequency	Percentages
1	Female	168	53.5
2	Male	146	46.5
	Total	314	100

Source: (Researcher's primary data, 2025)

Table 4: Age Category of Respondents

Age categories	Frequency	Percentages
31-50	204	64.97
18-30	62	19.75
Above 50	48	15.28
Total	314	100

Source: (Researcher's primary data, 2025)

Table 5: Marital Status of Respondents

Marital status	Frequency	Percentage (%)
Married	264	84.08
Widowed	35	11.15
Single	9	2.87
Divorced	6	1.90

Article DOI: https://doi.org/10.37284/eajis.8.1.3087

Total	314	100

Source: (Researcher's primary data, 2025)

Table 6: Education Level of Respondents

Level of education	Frequency	Percentage (%)
Primary school	229	72.93
No formal education	48	15.29
Secondary school	36	11.46
Tertiary education	1	0.32
Total	**314**	**100**

Source: (Researcher's primary data, 2025)

Table 7: Main Occupation of Respondents

Occupation	Frequency	Percentage
Farming & livestock rearing	301	95.85
Business	10	3.19
Others	3	0.96
Total	314	100

Source: (Researcher's primary data, 2025)

Table 8: Primary Source of Household's Income

Primary Source of household's income	Frequency	Percentage (%)
Crop farming	139	44.28
Livestock farming	103	32.80
Both crop and livestock farming	72	22.92
Total	314	100

Source: (Researcher's primary data, 2025)

Table 9: Type of PRISM Project Support Delivered by Respondents

Type of project support delivered	Frequency	Percentage (%)
VBHCD (***Value*-Based Holistic Community Development**:) Training	314	100.00
Training on nutrition	292	92.99
Training on livestock management	278	88.54
Livestock distribution (animals, feed and veterinary drug package)	272	86.62
Access to veterinary services	187	59.55
Training on Gender Action Learning Systems (GALS)	128	40.76
Market linkage support	61	19.43
Other	2	0.64

Source: (Researcher's primary data, 2025)

Table 10: PRISM Project Contribution to Household Income of Respondents

Project contribution	Frequency	Percentage
Diversified income sources	289	92.04
Increased income from livestock sales	270	85.99
Reduced costs for veterinary services or feed	82	26.11
Improved access to markets leading to better prices	58	18.47
Other (specify)	1	0.32

Article DOI: https://doi.org/10.37284/eajis.8.1.3087

Source: (Researcher's primary data, 2025)

Table 11: Ascending Monthly Household Income Ranges among Respondents

Graduated monthly income category	Frequency	Percentage
RWF 10,001–50,000	160	50.95
Below RWF 10,000	147	46.82
RWF 50,001–100,000Frw	6	1.91
Above RWF 100,000	1	0.32
Total	314	100

Source: (Researcher's primary data, 2025)

Table 12: The Utilization of Derived Household Income Values for Respondents

Utilization of derived household income	Frequency	Percentage
Buying food	291	92.68
Saving	266	84.71
Investing in farming	263	83.76
Paying school fees	238	75.8
Other (specify)	1	0.32

Source: (Researcher's primary data, 2025)

Table 13: Respondents' Household Access to Animal-source Food

Accessibility to animal-source food	Frequency	Percentage (%)
Respondents with access to animal-source food	312	99.36
Respondents without access to animal-source food	2	0.64
Total	314	100

Source: (Researcher's primary data, 2025)

Table 14: Respondent Frequency Interval on Consummation of Animal-source Food

Basis	Frequency	Percentage (%)
Weekly	133	42.36
Rarely	88	28.02
Daily	73	23.25
Monthly	20	6.37
Total	314	100

Source: (Researcher's primary data, 2025)

Table 15: Types of Animal-source Food Used by Respondents

Animal source food	Frequency	Percentage (%)
Eggs	286	91.08
Meat	114	36.31
Milk	25	7.96
Other	1	0.32

Source: (Researcher's primary data, 2025)

Table 16: Respondents Accessibility to Livestock Markets Installed in Partnership with PRISM Project

Access to livestock market	Frequency	Percentage (%)

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Respondents with access to livestock market	282	89.81
Respondents without access to livestock market	32	10.19

Source (Researcher's primary data, 2025)

Table 17: Distance from Respondents to Constructed Livestock Market Facilities by PRISM

Distance	Frequency	Percentage (%)
Less than 5 km	239	76.11
5–10 km	61	19.43
More than 10 km	15	4.78

Source: (Researcher's primary data, 2025)

Table 18: Role of PRISM Project in Livestock Market Accessibility to Respondents

Project intervention	Frequency	Percentage (%)
Improved market infrastructure (rehabilitation & construction)	256	81.53
Other	59	18.79

Source: (Researcher's primary data, 2025)

Table 19: Self-help Group Membership among Respondents

Respondents in Self-help groups	Frequency	Percentage (%)
Respondents registered in Self-help groups	314	100.00

Source: (Researcher's primary data, 2025)

Table 20: Benefits Delivered by Respondents Through Participation in SHGs

SHG Benefit	Frequency	Percentage (%)
Increased savings	276	87.9
Improved knowledge of livestock rearing	273	86.94
Access to loans	257	81.85
Strengthened community support	250	79.62

Source: (Researcher's primary data, 2025)

Table 21: Familiarity with Heifer's 12 Cornerstones for Sustainable Development among Respondents

Familiarity with Heifer's cornerstones	Frequency	Percentage (%)
Respondents familiar with Heifer's 12 cornerstones	314	100.00

Source: (Researcher's primary data, 2025)

Table 22: Most Impactful Cornerstone on Respondents' Household Welfare

Cornerstone	Frequency	Percentage (%)
Sustainability and Self-Reliance	296	94.27
Accountability	268	85.35
Gender and Family Focus	248	78.98
Passing on the gift	227	72.29
Other	5	1.59

Article DOI: https://doi.org/10.37284/eajis.8.1.3087

Source: (Researcher's primary data, 2025)

Table 23: Respondents'' Household Experience with PRISM Climate-smart Agriculture Support

Project support in smart climate agriculture	Frequency	Percentage (%)
Distribution of vegetable seeds	276	87.9
Training on sustainable farming practices	227	72.29
Provision of animal forage seeds	209	66.56
Support for kitchen garden establishment	184	58.6

Source: (Researcher's primary data, 2025)

Table 24: Respondents' Perspective on the Effect of PRISM Climate-smart Agriculture Support

Benefit	Frequency	Percentage (%)
Increased vegetable production	267	85.03
Enhanced household food security	247	78.66
Reduced vulnerability to climate shocks	180	57.32
Improved livestock feed availability	161	51.27
Other	1	0.32

Source: (Researcher's primary data, 2025)

Table 25: Challenges Faced by Respondents in Implementation of PRISM Project Support

Challenges	Frequency	Percentage (%)
High cost of livestock feed	282	89.81
Limited market access	72	22.93
Inadequate training	36	11.46
Lack of veterinary services	34	10.83
Other	1	0.32

Source: (Researcher's primary data, 2025)

Table 26: Respondents' Satisfaction Degree on PRISM Project Interventions

Satisfaction degree	Frequency	Percentage (%)
4 (Satisfied)	151	48.09
5 (Very satisfied)	111	35.35
1 (Very dissatisfied)	26	8.28
3 (Neutral)	21	6.69
2 (Dissatisfied)	5	1.59

Source: (Researcher's primary data, 2025)

