

International Journal of Agriculture Extension and Social Development

Volume 9; SP-Issue 4; April 2026; Page No. 01-05

Received: 02-01-2026

Accepted: 09-02-2026

Indexed Journal

Peer Reviewed Journal

Gender-based analysis of the socio-economic profile of livestock rearing tribal households in Kamrup (Rural) District of Assam

¹Salam Prabex, ²HR Meena, ³Rupasi Tiwari, ²Mahesh Chander, ⁴Shruti, ¹Harideep Verma and ¹Vimla Saran

¹Ph.D. Research Scholar, Division of Extension Education, ICAR-Indian Veterinary Research Institute, Izatnagar, Bareilly, Uttar Pradesh, India

²Principal Scientist, Division of Extension Education, ICAR-Indian Veterinary Research Institute, Izatnagar, Bareilly, Uttar Pradesh, India

³Joint Director Extension, ICAR-Indian Veterinary Research Institute, Izatnagar, Bareilly, Uttar Pradesh, India

⁴Scientist, Division of Extension Education, ICAR-Indian Veterinary Research Institute, Izatnagar, Bareilly, Uttar Pradesh, India

DOI: <https://doi.org/10.33545/26180723.2026.v9.i4a.3477>

Corresponding Author: HR Meena

Abstract

This cross-sectional study provides a gender-based socio-economic analysis of livestock-rearing tribal households, specifically the Rabha and Boro communities, in Kamrup (Rural) district, Assam. Data was collected from smallholder families through semi-structured interviews with primary male and female decision-makers using a simple random sampling method. The findings indicate that while agriculture remains the dominant primary occupation, women demonstrate significantly higher engagement in livestock farming as both primary and secondary livelihood activities compared to men. Despite their crucial economic role, these tribal farmers face considerable socio-economic constraints, including limited formal education and restricted access to institutional credit, often relying on informal sources or lacking credit access entirely. Furthermore, a vast majority of both male and female farmers lack formal training in livestock management. Wide spread mobile phone ownership among these households presents a strategic opportunity to utilize digital information and communication technology (ICT) tools for delivering agricultural extension services. The study concludes that targeted, gender-sensitive interventions, capacity building, and digital extension are vital for promoting women's empowerment and sustainable rural development in these communities.

Keywords: Gender analysis, ICT tools, livestock, tribal households, women empowerment

Introduction

Livestock rearing constitutes a vital component of rural livelihoods in India, contributing significantly to income generation, employment, and nutritional security. The sector plays an important role in supporting nearly two-thirds of the rural population and provides livelihood opportunities to approximately 20.5 million people (Mitra *et al.*, 2024) ^[13]. It accounts for around 8.8 per cent of total employment and contributes nearly 5.5 per cent to the national Gross Value Added (GVA) and about 31.0 per cent to the agricultural and allied sectors' GVA (Annual Report, 2023; Economic Survey, 2025–26) ^[1, 7]. Given its relatively higher growth potential compared to the crop sector, livestock farming is increasingly recognized as an effective pathway for poverty alleviation and inclusive rural development (Mellor, 2004; Birthal and Taneja, 2006; Saxena *et al.*, 2020) ^[12, 3, 15].

A distinctive feature of the livestock sector is its strong association with women's participation. Women constitute nearly half of the rural population in India and are extensively involved in various livestock-related activities such as feeding, milking, cleaning, and healthcare management (Vijayalakshmy *et al.*, 2023) ^[17]. In fact, a substantial proportion of the rural female workforce estimated to be around two-thirds is engaged in livestock

rearing (Kumar and Singh, 2008) ^[10].

Empowering women within agri-food systems has been shown to reduce hunger, enhance household income, and strengthen resilience, thereby contributing to broader development goals (FAO, 2023) ^[8]. Livestock production in Assam is predominantly characterized by smallholder systems, with nearly 90 per cent of rural households rearing one or more livestock species. Traditionally integrated with agriculture, livestock serves as a vital source of supplementary income and livelihood security (Das, 2017) ^[5]. The region's diverse agro-climatic conditions and reliance on traditional practices further underscore the importance of livestock, particularly among tribal households.

In Assam, tribal communities constitute a significant segment of the population, accounting for about 12.4 per cent (Census Report, 2011) ^[4]. These communities are often located in remote and ecologically diverse regions, which shape their livelihood patterns, access to resources, and overall well-being. In Kamrup (Rural) district, a notable proportion of the population belongs to tribal groups, including the Rabha and Boro communities, who largely depend on agriculture and livestock for their sustenance.

The present study aims to undertake a gender-based analysis

of livestock-rearing households among Rabha and Boro tribal communities in Kamrup (Rural) district of Assam. The study focuses on examining differences between male and female members in terms of socio-economic and personal characteristics in livestock-related activities.

Methodology

A cross sectional study was conducted purposively in Rani and Chayani blocks of Kamrup (Rural) district of Assam as this is one among the tribal inhabitant area with considerable livestock population. Four villages were randomly selected Patgaon, Umchur, Kokjar and Maliata (Ct). A total of 80 small tribal livestock families actively engaged in livestock activities. Households were chosen through the application of a simple random sampling technique.

A carefully structured semi-structured interview schedule was employed to collect detailed information for the study. Independent interviews were carried out with the principal male and female members of each household to facilitate a thorough understanding of gender roles in livestock-related activities. The information obtained was systematically compiled, classified, and analyzed using suitable statistical tools, including frequency and percentage. This methodological framework enabled the identification of important patterns, differences, and emerging trends within the study population, thereby offering meaningful insights into gender-specific aspects of livestock practices in Kamrup Rural district of Assam.

Results and Discussion

The findings of the study are presented below, followed by a discussion that explains them within the context of existing research. This comparative interpretation seeks to provide a more comprehensive understanding of the observed patterns and trends in light of established knowledge in the field.

Socio personal profile of the tribal farmers

The findings presented in Table 1 indicate that a predominant proportion of respondents belonged to the middle age group (36–50 years), accounting for 53.75 per cent among male decision makers (MDM) and 57.50 per cent among female decision makers (FDM). This was followed by the older age category (above 50 years) in MDM (35.00%), whereas a relatively higher proportion of FDM were observed in the younger age group (up to 35 years) (27.50%). With respect to educational attainment, most respondents were educated up to the primary level (25.00% MDM and 26.25% FDM), followed by middle and high school education. A comparatively smaller proportion had attained senior secondary education (8.75% MDM and 6.25% FDM) and graduation or higher levels (5.00% MDM and 1.25% FDM), indicating limited access to higher education, particularly among female respondents. Similar finding were reported by Das *et al.* (2024) ^[6] in which majority of the respondents belong to the middle age category, followed by old age category for male respondents and young category for female respondents. Moreover, majority of the tribal respondents (both male and female) had received upto primary education.

Table 1: Distribution of the respondents on the basis of their socio personal characteristics

Particulars	Categories	Male Decision Maker (MDM) (n=80)		Female Decision Maker (FDM) (n=80)	
		Frequency	Percentage	Frequency	Percentage
Age	Young (up to 35)	9	11.25	22	27.50
	Middle (36-50)	43	53.75	46	57.50
	Old (above 50)	28	35.00	12	15.00
	Mean $\pm$ SE	47.75 $\pm$ 0.94		44.08 $\pm$ 0.82	
Education	Illiterate	5	6.25	11	13.75
	Functionally Illiterate	10	12.50	21	26.25
	Primary	20	25.00	18	22.50
	Middle	19	23.75	14	17.50
	High School	15	18.75	10	12.50
	Senior Secondary	7	8.75	5	6.25
	Graduate and above	4	5.00	1	1.25
Primary Occupation	Agriculture	51	63.75	46	57.50
	Business/Trade/Commerce	10	12.50	2	2.50
	Livestock Farming	8	10.00	27	33.75
	Farm Labour	2	2.50	5	6.25
	Service	9	11.25	0	0.00
Secondary/Subsidiary Occupation	Agriculture	9	11.25	14	17.50
	Business/Trade/Commerce	5	6.25	0	0.00
	Livestock Farming	48	60.00	65	81.25
	Farm Labour	18	22.50	1	1.25
	Service	0	00.00	0	0.00
Experience in livestock farming (in years)	Low (up to 15)	17	21.25	30	37.50
	Medium (16-25)	34	42.50	36	45.00
	High (>25)	29	36.25	14	17.50
	Mean $\pm$ SE	23.97 $\pm$ 0.95		19.80 $\pm$ 0.82	
Social Participation (Members included multiple sources)	Members of FBOs	30	37.50	16	20
	Members of Self Help Groups (SHGs)	0	0.00	35	43.75
	Members of Village Councils	13	16.25	10	12.50
	Members of Social Media Groups	40	50.00	46	57.50
	Members of Village level administration	24	30.00	10	12.50
Training Received	Received	10	12.50	14	17.50
	None	70	87.50	66	82.50

In terms of primary occupation, agriculture emerged as the dominant livelihood activity for groups, comprising 63.75 per cent of MDM and 57.50 per cent of FDM. Notably, a higher proportion of FDM were primarily engaged in livestock farming (33.75%) compared to MDM (10.00%), highlighting the significant involvement of women in livestock-based activities. Engagement in business, service, and farm labour was relatively low across both categories. Regarding subsidiary occupation, livestock farming constituted the principal secondary activity, reported by 60.00 per cent of MDM and a substantially higher 81.25 per cent of FDM. Farm labour was the next common secondary occupation among MDM (22.50%), whereas it was minimal among FDM (1.25%), indicating gender-based differentiation in livelihood diversification. The findings are in agreement with the results Roy (2022) ^[14] who conducted a study in Golpara district of Assam and observed that majority of the respondents (women farmers) had animal husbandry/ livestock rearing as their secondary source of occupation. The level of experience in livestock farming revealed that most respondents fell within the medium category (16–25 years), representing 42.50 per cent of MDM and 45.00 per cent of FDM. A considerable proportion of MDM (36.20%) had high experience (>25 years), whereas fewer FDM (17.50%) were observed in this category.

Social participation patterns showed that both MDM (50.00%) and FDM (57.50%) exhibited higher participation in social media groups. Notably, MDM had greater involvement in farmer-based organizations (37.50%) and village-level administration (30.00%), whereas FDM exhibited higher participation in self-help groups (43.75%). Participation in village councils was relatively low for both groups. With regard to training exposure, a large majority of respondents had not received any formal training in livestock-related activities, accounting for 87.50 per cent of MDM and 82.50 per cent of FDM. Only a small proportion reported having received training, suggesting a limited outreach or accessibility of capacity-building interventions and extension services.

Socio economic profile of the tribal farmers

The data presented in Table 2 show that a large majority of households were nuclear in structure (85.63%), with only 14.37 per cent belonging to joint families. Most households had a medium family size of 5–6 members (56.20%), followed by smaller families (26.30%) and larger households (17.50%). The findings are in agreement with Kujur (2026) ^[9], who reported that the majority of households in Jammu district of Jammu and Kashmir were

nuclear in structure with a medium family size of 5–9 members. In terms of landholding, all households fell within marginal and small categories, with 55.62 per cent classified as small farmers (1.01–2.00 ha) and 44.38 per cent as marginal (<1 ha). The absence of medium and large landholders reflects the predominance of smallholder farmers in the study area.

Livestock ownership was primarily concentrated in the small herd category (56.25%), followed by medium (40.00%) and a negligible proportion in the large category (3.75%), with a mean livestock holding of 4.16 ± 0.14 equivalent livestock units. This finding differs from Kumar *et al.* (2015) ^[11] among the tribal farmers in Jharkhand and found that majority of the respondents belong to medium category of livestock holding. Regarding species composition, mixed livestock systems were more prevalent than single-species rearing. The combination of cattle and pig (29.38%) was most common. However, Shyam (2014) ^[16] reported that pig alone constituted the dominant single-species system. The annual family income distribution showed that half of the households (50.00%) fell within the low-income category with an average annual income of ₹114,235 $\pm$ 1,777. In contrast, Das *et al.* (2024) ^[6] observed that the annual household income of Garo tribal farmers in West Garo Hills district of Meghalaya predominantly ranged between 85,001 and 1,50,000 INR. Income derived specifically from livestock was predominantly in the medium range (46.88%), followed by high (36.87%) and low (16.25%) categories, indicating the significant contribution of livestock to household earnings.

Access to credit revealed a mixed pattern, with 30.00 per cent of households reporting no access to any source. Among those with access, informal channels such as friends and relatives (21.87%) and moneylenders (16.88%) were more commonly utilized compared to formal institutions like regional rural banks (20.00%), self-help groups (8.13%), and cooperative societies (3.12%). This suggests limited penetration of formal financial services in the study area. This findings is in accordance with Ashok (2022) ^[12] in Bihar and reported that majority of the households (47.00%) did not have access to credit facilities. Ownership of information and communication technology (ICT) tools was relatively high for mobile phones (87.50%), followed by television (55.00%) and radio (32.50%), while 15.00 per cent of households reported no access to any ICT tools. The widespread availability of mobile phones indicates potential for leveraging digital platforms in delivering livestock related information. Similarly, Das *et al.* (2024) ^[6] found majority of the respondents had mobile phone.

Table 2: Distribution of the sampled households on the basis of their socio economic characteristics (N=80)

Particulars	Categories	Frequency	Percentage
Family Type	Nuclear	69	85.63
	Joint	11	14.37
Family Size	Low (upto 4)	21	26.25
	Medium (5 to 6)	45	56.25
	High (7 & above)	14	17.50
	Mean ± SE	5.49 ± 0.12	
	Land Holding (hectares)	Marginal (<1)	36
Small (1.01-2.00)		44	55.00
Semi-medium (2.01-4.00)		0	0.00
Medium (4.01-10.00)		0	0.00
Large farmer (> 10.00)		0	0.00
Mean ± SE		1.10 ± 0.03	
Livestock Holdings (Equivalent Livestock Unit)		Small (0.80 – 4.49)	45
	Medium (4.50 – 8.19)	32	40.00
	Large (8.20 – 12.52)	3	3.75
	Mean ± SE	4.16 ± 0.14	
Livestock Composition	Single species		
	Cattle	5	6.25
	Goat	0	0.00
	Pig	25	31.25
	Combination of two species		
	Cattle + Pig	24	30.00
	Goat + Pig	5	6.25
	Cattle + Goat	17	21.25
	Combination of three species		
	Cattle + Pig + Goat	4	5.00
Annual Family Income (INR)	Low (70,000 – 1,13,333)	40	50.00
	Medium (1,13,334 – 1,56,667)	35	43.75
	High (1,56,668 – 2,00,000)	5	6.25
	Mean ± SE	114235 ± 1777	
	Annual Income from Livestock (INR)	Low (30,000 – 46,667)	13
Medium (46,668 – 63,334)		38	47.50
High (63,335 – 80,000)		29	36.25
Mean ± SE		53,147 ± 1070	
Available source of credit	Formal Sources		
	Regional Rural Banks	16	20.00
	SHGs	7	8.75
	Cooperative Society	2	2.50
	Informal Sources		
	Money lenders	14	17.50
	Friends & relatives	17	21.25
	No Access	24	30.00
ICT Tools Possessed	Radio	26	32.50
	Television	44	55.00
	Mobile Phone	70	87.50
	None	12	15.00

Conclusion

Tribal farmers represent the foundation for traditional livestock rearing systems in Assam. This study establishes that livestock farming is heavily gendered among the Rabha and Boro communities of Kamrup (Rural) district, functioning as a vital economic pillar driven primarily by women. Despite their significant contributions, these tribal households face substantial socio-economic constraints, including limited higher education, a lack of institutional credit, and poor access to formal training. To achieve sustainable rural development and gender equality, it is imperative that future strategies focus on empowering these women through accessible financial resources, targeted skill development, and the integration of digital ICT tools to modernize traditional livestock practices.

References

1. Annual report 2023-24. Department of Animal Husbandry, Dairying and Fisheries (DADH&F), Government of India; 2024.
2. Ashok A. An appraisal of extension and advisory services for farming: A gender perspective [PhD thesis]. Karnal, Haryana: National Dairy Research Institute; 2022.
3. Birthal PS, Taneja VK. Livestock sector in India: Opportunities and challenges. Presented at ICAR-ILRI workshop on smallholder livestock production in India; January 24-25, 2006; NCAP, New Delhi; 2006.
4. Census report. Census of India, Registrar General and Census Commissioner, India; 2011.
5. Das G. Transition in ethno-cultural livestock

- preferences among farmers in Kamrup (R) district of Assam. Guwahati: Assam Agricultural University, College of Veterinary Science; 2017.
6. Das TK, Borah S, Singh M. Gender perspectives in agriculture and livestock production: Insights from Garo tribal farm households in West Garo Hills, Meghalaya. *Asian Journal of Agricultural Extension, Economics & Sociology*. 2024;42(5):395-403.
 7. Economic survey. Economic Division, Department of Economic Affairs, Ministry of Finance, Government of India; 2025.
 8. FAO. The status of women in agrifood systems. Rome; 2023.
 9. Kujur A. Climate change and livestock farming: A gendered analysis of knowledge, risk, and resilience. Jammu: Sher-e-Kashmir University of Agricultural Sciences & Technology of Jammu; 2026.
 10. Kumar A, Singh DK. Livestock production systems in India: An appraisal across agro-ecological regions. *Indian Journal of Agricultural Economics*. 2008;63:902-916.
 11. Kumar M, Gupta J, Radhakrishnan A, Singh M. Socio-economic status and role of livestock to improve livelihood of tribes of Jharkhand. *Education*. 2015;86(16):67-71.
 12. Mellor JW. Agricultural growth and poverty reduction: The rapidly increasing role of smallholder livestock. In: Ahuja V, editor. *Livestock and livelihoods: Challenges and opportunities for Asia in the emerging market environment*. National Dairy Development Board of India and FAO of the United Nations; 2004:372.
 13. Mitra A, Tripathy AK, Singh RK, Bujarbaruah KM. Transforming the Indian livestock sector. *Transforming Agri-Food Systems*. 2024;173.
 14. Roy D. Impact of female participation in livestock and poultry enterprises in ensuring women empowerment and household food security among selected tribes/ethnic group in Goalpara district of Assam [MVSc thesis]. Guwahati: Assam Agricultural University, College of Veterinary Science; 2022.
 15. Saxena R, Khan M, Choudhary B, Kanwal V. The trajectory of livestock performance in India: A review. *Indian Journal of Dairy Science*. 2020;72(6):1.
 16. Shyam J. Contribution of backyard pig production system in the livelihood of scheduled tribe families of Assam. Izatnagar, Uttar Pradesh: Indian Veterinary Research Institute; 2024.
 17. Vijayalakshmy K, Chakraborty S, Biswal J, Rahman H. The role of rural Indian women in livestock production. *European Journal of Social Sciences*. 2023;3(1):91-98.