

# “Dairy Farming as a Tool for Poverty Alleviation and Social Empowerment: Evidence from Kaimur District, Bihar”

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## Abstract:

Dairy farming has emerged as a critical component of the rural economy in India, particularly in economically backward regions where agriculture alone is insufficient to ensure sustainable livelihoods. Bihar, despite its agrarian base, continues to face persistent rural poverty, low employment opportunities, and limited income diversification. In this context, dairy farming plays a significant role in supplementing household income, generating employment, and fostering social empowerment, especially among women and marginal farmers.

The present study examines the role of dairy farming in poverty alleviation and social empowerment in Kaimur District of Bihar. Based on secondary data sourced from government reports, scholarly literature, and institutional publications, the study analyzes income enhancement, employment generation, women's participation, and the role of government schemes and dairy cooperatives. The findings reveal that dairy farming contributes substantially to regular income flow, reduces vulnerability to agricultural risks, and enhances the socio-economic status of rural households. Moreover, women's active involvement in dairy activities strengthens decision-making power and social inclusion. The study concludes that strengthening institutional support, improving access to credit, and promoting scientific dairy practices can make dairy farming a sustainable and effective poverty reduction strategy in rural Bihar.

**Keywords:** Dairy Farming, Poverty Alleviation, Rural Employment, Women Empowerment, Marginal Farmers, Kaimur District, Bihar.

## I. INTRODUCTION

Poverty alleviation and inclusive socio-economic development remain among the most pressing challenges in India, particularly in rural and semi-rural regions where agriculture is the primary source of livelihood. Despite sustained economic growth at the national level, regional disparities continue to persist, with states such as Bihar experiencing high levels of rural poverty, underemployment, and income insecurity. The dependence on traditional agriculture, characterized by small and fragmented landholdings, low productivity, and vulnerability to climatic uncertainties, has necessitated the exploration of alternative and supplementary livelihood options. In this context, dairy farming has emerged as a crucial component of rural livelihood diversification and a viable tool for poverty alleviation and social empowerment.

Dairy farming occupies a unique position within India's agrarian economy. Unlike crop agriculture, dairy activities generate regular and year-round income, thereby providing financial stability to rural households. The sector requires relatively low initial investment, can be carried out alongside agricultural activities, and offers employment opportunities to landless laborers, marginal farmers, and women. India, being the largest milk producer in the world, has demonstrated the immense potential of the dairy sector in contributing to rural income generation, nutritional security, and employment creation. The success of

initiatives such as Operation Flood and the cooperative dairy movement has further reinforced the role of dairy farming as a catalyst for rural transformation.

In Bihar, dairy farming assumes even greater significance due to the state's socio-economic structure. A large proportion of the population resides in rural areas and depends on agriculture and allied activities for livelihood. However, limited industrial development and inadequate non-farm employment opportunities have restricted income diversification. Dairy farming has therefore emerged as a supplementary source of income that reduces dependence on seasonal agricultural earnings. It provides a safety net against crop failures and price fluctuations, thereby enhancing economic resilience among rural households. Moreover, dairy farming promotes inclusive growth by engaging women and marginalized communities in productive economic activities.

Kaimur District, located in the south-western part of Bihar, presents a distinctive socio-economic setting for examining the role of dairy farming in poverty alleviation. The district is predominantly agrarian, with a significant population engaged in small-scale farming and allied activities. Limited irrigation facilities, low agricultural productivity, and restricted access to industrial employment have contributed to persistent poverty and underemployment in the region. In such a scenario, dairy farming has gradually gained importance as an alternative livelihood strategy. The availability of fodder, traditional knowledge of animal rearing, and growing demand for milk and dairy products have created favorable conditions for dairy development in the district.

Beyond income generation, dairy farming plays a vital role in fostering social empowerment, particularly among women. Women are actively involved in various dairy-related activities such as feeding, milking, and management of livestock. Their participation not only contributes to household income but also enhances their decision-making power, financial independence, and social status. Dairy farming thus acts as a medium of socio-economic inclusion by empowering women and marginal farmers who often remain excluded from formal employment opportunities. The formation of self-help groups and dairy cooperatives has further strengthened collective action and social capital in rural communities.

Government interventions and institutional support have played a significant role in promoting dairy farming in rural India. Schemes such as the National Dairy Development Programme, Rashtriya Gokul Mission, and initiatives by the National Dairy Development Board (NDDB) aim to improve milk productivity, enhance breed quality, and strengthen market linkages. In Bihar, state-level programs and cooperative institutions have facilitated access to veterinary services, credit, and assured markets. However, challenges such as inadequate infrastructure, limited awareness, and uneven implementation continue to hinder the full realisation of dairy farming's potential as a poverty alleviation strategy.

Despite the recognised importance of dairy farming, empirical and region-specific studies focusing on backward districts like Kaimur remain limited. Existing research often concentrates on national or state-level analyses, overlooking micro-level dynamics and localised socio-economic conditions. Understanding the role of dairy farming in poverty reduction and social empowerment at the district level is essential for designing targeted policy interventions and strengthening institutional frameworks. This study seeks to bridge this research gap by examining the contribution of dairy farming to rural livelihoods, employment generation, women's empowerment, and the effectiveness of government and cooperative support systems in Kaimur District.

In this backdrop, the present study aims to analyse dairy farming as a tool for poverty alleviation and social empowerment in Kaimur District, Bihar. By synthesising insights from secondary data sources, the study attempts to provide a comprehensive understanding of how dairy farming influences income stability, employment creation, and social inclusion. The findings are expected to contribute to academic discourse as well as inform policymakers and development practitioners seeking sustainable and inclusive strategies for rural development.

## II. REVIEW OF LITERATURE

Several scholarly articles have examined the role of dairy farming in rural development and poverty alleviation. Studies by Birthal et al. emphasise that livestock-based livelihoods significantly contribute to

income diversification and risk mitigation among small and marginal farmers. Research focusing on eastern India highlights that dairy farming provides a stable income and enhances food and nutritional security. Empirical studies also suggest that dairy-based employment is more inclusive compared to crop agriculture, as it allows participation of women, the elderly, and landless households.

Doctoral dissertations have extensively analysed livestock development and rural livelihoods in India. Studies submitted to universities through Shodhganga reveal that dairy farming positively impacts household income, employment generation, and asset creation. Several dissertations emphasise women's empowerment through dairy cooperatives, highlighting improvements in financial autonomy, leadership skills, and social participation. Region-specific dissertations also underline the role of institutional support and access to veterinary services in enhancing dairy productivity.

Books on rural development and agricultural economics underscore the strategic importance of the dairy sector in India's agrarian economy. Works by leading economists discuss the success of the cooperative dairy model in promoting inclusive growth and reducing rural poverty. These texts emphasise that dairy farming complements agriculture by providing year-round employment and stabilising rural incomes. Books on gender and development further highlight dairy farming as a pathway for women's economic empowerment and social inclusion.

Research papers presented at national and international conferences point out that dairy farming contributes to sustainable rural development by integrating economic, social, and nutritional dimensions. Studies also identify constraints such as inadequate infrastructure, limited access to credit, and market inefficiencies, particularly in backward regions. Comparative studies suggest that regions with strong cooperative networks demonstrate better outcomes in terms of income enhancement and poverty reduction.

News articles and policy reports published in leading newspapers and institutional portals provide contemporary insights into the dairy sector. Reports on Bihar's dairy development highlight increasing milk production, rising participation of women in dairy activities, and the expansion of cooperative networks. However, media reports also draw attention to challenges such as fluctuating milk prices, inadequate cold storage facilities, and the need for stronger policy support at the grassroots level.

### III. OBJECTIVES OF THE STUDY

- To examine the role of dairy farming in reducing rural poverty in Kaimur District.
- To analyse employment generation through dairy-based activities at the household level.
- To study the participation of women and marginal farmers in dairy farming and its empowerment effects.
- To assess the impact of government schemes and cooperative institutions on dairy-led poverty alleviation.
- To suggest policy measures for strengthening dairy farming as a sustainable poverty reduction strategy

### IV. RESEARCH METHODOLOGY

The present study is based on secondary data, collected from reliable and authenticated academic and institutional sources to examine the role of dairy farming in poverty alleviation and social empowerment in Kaimur District, Bihar. Data were sourced from peer-reviewed journals, published books, doctoral theses, conference proceedings, government reports, and policy documents related to dairy development, rural livelihoods, and social empowerment. Academic databases such as Scopus, Web of Science, Google Scholar, JSTOR, SSRN, and Shodhganga were extensively reviewed to ensure scholarly rigor. Institutional and industry-related data were obtained from reports published by the Department of Animal Husbandry & Dairying, Ministry of Fisheries, Animal Husbandry and Dairying, NDDB, NITI Aayog, Government of Bihar, NABARD, and other relevant agencies. The collected data were analysed using content analysis

and comparative analysis techniques, focusing on studies published between 2020 and mid-2025 to ensure relevance and contemporaneity.

### V. DISCUSSION AND FINDINGS

The analysis reveals that dairy farming plays a significant role in enhancing rural livelihoods in Kaimur District. It provides a steady source of income, especially during agricultural off-seasons, thereby reducing income volatility among rural households. Dairy-based activities such as milk production, processing, and marketing generate year-round employment for family members, including women and elderly individuals.

Women’s participation in dairy farming has emerged as a crucial factor in social empowerment. Engagement in income-generating dairy activities enhances women’s financial independence, improves their role in household decision-making, and strengthens their social status within the community.

Government schemes and cooperative institutions have positively influenced dairy development by providing access to credit, improved cattle breeds, veterinary services, and assured milk markets. However, the study also finds gaps in implementation, inadequate infrastructure, and limited awareness among farmers, which restrict the full potential of dairy farming as a poverty alleviation tool.

Dimension	Key Aspects Analysed	Evidence from Secondary Sources	Observed Impact on Rural Households	Discussion Insights / Policy Relevance
<b>Income Generation</b>	Regular income from milk sales	Government reports (NDDDB, Bihar Economic Survey), research articles	Supplementary and stable income throughout the year	Dairy farming reduces income volatility and dependence on seasonal agriculture
<b>Employment Creation</b>	Family-based dairy activities	Research papers, dissertations, and NABARD reports	Year-round employment for family members, including women and the elderly	Enhances household-level employment without migration
<b>Poverty Reduction</b>	Livelihood diversification	FAO reports, rural development studies	Improved consumption capacity and asset creation	Dairy acts as a safety net against crop failure and rural poverty
<b>Women Participation</b>	Milking, feeding, livestock management	Journal articles, gender studies, news reports	Increased economic contribution and decision-making power	Dairy farming promotes gender inclusion and women empowerment
<b>Marginal Farmers’ Inclusion</b>	Low capital requirement	Academic literature, institutional studies	Participation of small and marginal farmers	Makes dairy farming accessible to economically weaker sections
<b>Role of Cooperatives</b>	Milk procurement and pricing	NDDDB reports, cooperative studies	Assured market access and fair pricing	Reduces exploitation by middlemen and stabilizes income
<b>Government Schemes</b>	Subsidies, veterinary services, and	Ministry reports, policy documents	Improved productivity and animal health	Effectiveness depends on awareness and

Dimension	Key Aspects Analysed	Evidence from Secondary Sources	Observed Impact on Rural Households	Discussion Insights / Policy Relevance
	breed improvement			implementation efficiency
<b>Skill Knowledge &amp; Level</b>	Traditional vs scientific practices	Dissertations, extension studies	Limited adoption of modern practices	Highlights the need for training and capacity building
<b>Infrastructure Availability</b>	Milk collection centres, cold storage	Government and media reports	Post-production losses and marketing constraints	Infrastructure gaps limit the full potential of dairy farming
<b>Overall Social Empowerment</b>	Economic and social inclusion	Combined evidence from the literature	Improved confidence, social status, and community participation	Dairy farming contributes to inclusive and sustainable rural development

**Table: Role of Dairy Farming in Poverty Alleviation and Social Empowerment in Kaimur District**

- Dairy farming has emerged as an important supplementary livelihood activity for rural households in Kaimur District, reducing dependence on seasonal agriculture.
- The sector provides regular and stable income, helping households manage daily expenses and cope with agricultural uncertainties.
- Dairy-based activities generate year-round employment at the household level, engaging family members, including women, the elderly, and marginal farmers.
- Women’s participation in dairy farming has significantly contributed to economic independence, enhanced decision-making power, and improved social status within families and communities.
- Marginal and small farmers benefit from dairy farming due to its low capital requirement and compatibility with existing agricultural practices.
- Government schemes and dairy development programs have played a supportive role by providing access to improved cattle breeds, veterinary services, and institutional credit.
- Dairy cooperatives have strengthened market access and ensured assured milk procurement, reducing exploitation by middlemen.
- Despite positive outcomes, challenges such as inadequate infrastructure, limited awareness of schemes, insufficient training, and weak cold-chain facilities continue to constrain the sector’s growth.
- Regional disparities in implementation and institutional support affect the overall effectiveness of dairy farming as a poverty alleviation strategy.

## VI. CONCLUSION

The present study highlights the significant role of dairy farming as a tool for poverty alleviation and social empowerment in Kaimur District, Bihar. The findings indicate that dairy farming contributes meaningfully to income diversification, employment generation, and economic stability among rural households. By providing a regular source of income throughout the year, dairy farming reduces vulnerability to agricultural risks and seasonal unemployment, thereby strengthening rural livelihood security.

A key outcome of the study is the role of dairy farming in fostering social empowerment, particularly among women and marginal farmers. Women’s active involvement in dairy-related activities enhances

their financial independence, participation in household decision-making, and overall social standing. This empowerment effect extends beyond economic benefits, contributing to improved confidence, social inclusion, and community participation.

The study also underscores the importance of government schemes and cooperative institutions in supporting dairy-led development. Access to veterinary services, improved breeds, credit facilities, and organized milk marketing has positively influenced productivity and income levels. However, the impact of these interventions remains uneven due to infrastructural gaps, limited awareness, and implementation challenges at the grassroots level.

Overall, dairy farming emerges as a sustainable and inclusive livelihood strategy with strong potential to reduce rural poverty and promote socio-economic development in backward regions like Kaimur District. Strengthening institutional frameworks, improving infrastructure, enhancing skill development, and promoting women-centric interventions can further amplify the sector's contribution. Policymakers and development agencies should therefore prioritise dairy farming within rural development strategies to achieve long-term poverty reduction and inclusive growth in Bihar.

## VII. SUGGESTIONS

- Government agencies and dairy cooperatives should improve veterinary services, milk collection centres, and cold-chain infrastructure in rural areas to enhance productivity and reduce post-production losses.
- Regular training programs on scientific dairy practices, animal health management, and value addition should be organised, with special focus on women and marginal farmers to improve efficiency and income levels.
- Simplified credit facilities, timely subsidies, and stronger cooperative marketing systems should be ensured to provide financial stability and fair pricing for dairy farmers.

## REFERENCES:

1. Birthal, P. S., Taneja, V. K., & Thorat, A. (2018). Livestock production and income diversification in India. *Indian Journal of Agricultural Economics*, 73(1), 1–15.
2. Government of India. (2021). National Dairy Development Programme: Annual Report. Ministry of Fisheries, Animal Husbandry and Dairying, New Delhi.
3. Government of Bihar. (2022). Economic Survey of Bihar. Department of Finance, Government of Bihar, Patna.
4. Kumar, A., Staal, S. J., & Singh, D. K. (2021). Smallholder dairy farmers' access to markets and income generation in India. *Agricultural Economics Research Review*, 34(2), 145–156.
5. National Dairy Development Board (NDDB). (2020). Indian dairy sector: Status and prospects. NDDB, Anand.
6. NABARD. (2021). Status of livestock sector and rural livelihoods in India. National Bank for Agriculture and Rural Development, Mumbai.
7. Patel, R. (2019). Women empowerment through dairy cooperatives in rural India. *Journal of Rural Development*, 38(3), 401–418.
8. Sharma, R., & Singh, P. (2020). Dairy farming and employment generation in rural India. *International Journal of Rural Management*, 16(2), 215–230.
9. Singh, K. (2018). Rural development: Principles, policies and management. Sage Publications, New Delhi.
10. FAO. (2020). Dairy development and rural poverty reduction. Food and Agriculture Organization of the United Nations, Rome.
11. NITI Aayog. (2021). Doubling farmers' income: Role of livestock sector. Government of India, New Delhi.

12. Mishra, S. (2020). Impact of dairy farming on rural household income in Bihar (Doctoral dissertation). Available on Shodhganga.
13. Kumar, R., & Verma, S. (2022). Livestock-based livelihoods and social inclusion in eastern India. *Asian Journal of Agriculture and Development*, 19(1), 55–68.
14. Census of India. (2011). District Census Handbook: Kaimur (Bhabua). Government of India.
15. The Hindu. (2023). Dairy cooperatives and women-led rural growth in Bihar. National Daily Newspaper Report.