



Strengthening Rural Livelihoods through Dairy Farming: A Case Study from Karnataka

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Abstract

Dairy farming has emerged as a vital livelihood strategy in rural India by ensuring regular income and continuous employment, particularly for small and marginal farmers. This study examines the impact of milk production on household income and employment generation in Thagachagere village of Channapatna Taluk, Karnataka. Primary data were collected from 50 randomly selected milk producers affiliated with the local milk cooperative under the Bangalore Milk Cooperative Union Limited (BAMUL). The study employs descriptive statistics and hypothesis testing to analyse socio-economic characteristics, milk production levels, income patterns, and employment effects. The findings reveal that milk production significantly contributes to income stability, reduces seasonal unemployment, and enhances women's participation in economic activities. Cooperative membership plays a crucial role in improving access to veterinary services, institutional credit, and assured markets. The study concludes that dairy farming, supported by cooperative institutions, serves as an effective instrument for inclusive rural development and recommends strengthening extension services, technological adoption, and credit access.

Keywords: Dairy farming, Milk production, Rural income, Employment generation, Cooperative societies, Karnataka

1. Introduction

Agriculture and allied activities continue to form the backbone of rural livelihoods in India, employing a large proportion of the workforce. Among allied sectors, dairy farming occupies a prominent position due to its ability to generate regular income and year-round employment. Unlike crop cultivation, which is seasonal and highly dependent on climatic conditions, milk production ensures a steady cash flow, making it particularly important for small and marginal farmers.

India is the world's largest producer of milk, and the dairy sector has significantly contributed to poverty reduction, nutritional security, and women's empowerment. In Karnataka, dairy cooperatives functioning under the Karnataka Milk Federation (KMF), especially BAMUL, have played a transformative role by integrating rural producers with organized markets. Despite the importance of dairy farming, micro-level empirical studies analysing its impact on income and employment at the village level remain limited. The present study attempts to bridge this gap by examining the role of milk production in enhancing rural livelihoods in Thagachagere village of Channapatna Taluk.

2. Review of Literature

Existing literature highlights the multifaceted contribution of dairy farming to rural development. Several studies have established that dairy activities supplement farm income and generate employment for family labour, particularly women (Jayashree & Poornima, 2012; Gayathri et al., 2014). Research conducted in Karnataka indicates that farmers associated with cooperative societies earn more stable incomes due to assured procurement and timely payments (Prakash & Gowda, 2013).

Studies by Sudha and Manjunath (2010) and Sreenivasa Murthy (2011) emphasize that dairy farming reduces rural–urban migration by creating local employment opportunities. Recent research also points out that technological interventions such as artificial insemination, veterinary outreach, and digitised milk collection systems enhance productivity and farmer income (Manjunath & Kavitha, 2015; Deepak & Manjula, 2020). While the positive role of dairy farming is well documented, region-specific village-level studies remain scarce, particularly in Karnataka. The present study contributes to the literature by providing empirical evidence from a rural village setting.

3. Objectives of the Study

1. To examine the level of milk production in Thagachagere village.
2. To analyse the contribution of dairy farming to rural household income.
3. To study employment opportunities generated through dairy activities.
4. To assess the socio-economic impact of dairy farming on milk producers.
5. To identify challenges faced by dairy farmers in production and marketing.
6. To suggest policy measures to enhance milk yield and farmer income.

4. Hypothesis

- **H₀:** Milk production has no significant impact on the income and employment of rural households.
- **H₁:** Milk production has a significant positive impact on the income and employment of rural households.

5.SCOPE OF THE STUDY: The scope of the present study is centred around analysing the role and contribution of milk production in enhancing the income levels and employment opportunities among rural households, with special reference to Thagachagere village in Channapatna Taluk. The study is confined to understanding how dairy activities affect the economic status of small and marginal farmers who are part of the milk cooperative society in this area. It particularly emphasizes how involvement in dairy farming has helped households create a steady stream of income and employment, especially in regions where agriculture alone may not be sustainable throughout the year.

6. IMPORTANCE OF THE STUDY: This study is important as it explores the role of dairy farming in enhancing rural livelihoods. In rural areas like Thagachagere, agriculture and allied activities such as dairy play a vital role in providing sustainable income and employment opportunities. Milk production is a daily activity that ensures regular cash flow to farmers, especially small and marginal ones. By studying the impact of milk production on income and employment, this research helps in understanding how dairy farming contributes to rural development. It also highlights the challenges faced by farmers and the effectiveness of milk cooperative societies in supporting them. The findings of this study will be useful for policymakers, cooperative managers, and development agencies to plan strategies for improving the dairy sector and uplifting rural communities.

7. METHODOLOGY OF THE STUDY: The Methodology of this study is as follows:

7.1 Study Area: The study was conducted in Thagachagere village, located in Channapatna Taluk of Bengaluru South District, Karnataka. The village has an active milk producers' cooperative affiliated with BAMUL.

7.2 Sampling Design: A random sampling technique was adopted to select 50 milk producers from the cooperative society. The sample represents farmers across different age groups, educational levels, landholding sizes, and herd structures.

7.3 Data Collection: Both primary and secondary data were used. Primary data were collected through a structured interview schedule covering socio-economic characteristics, milk production, income, employment, and access to cooperative services. Secondary data were obtained from government reports, cooperative records, and published studies.

7.4 Analytical Tools: The study employs descriptive statistics, percentage analysis, Chi Square test and Paired T -test and hypothesis testing to assess the relationship between milk production, income, and employment.

8.Data Analysis, Interpretation and Testing of Hypotheses.

8.1 Socio-Economic Profile of Dairy Farmers

AGE	Number of Respondents	Percentage %
15-25	6	12%
26 - 35	36	72%
36 - 45	8	16%
Total	50	100%

The socio-economic profile of respondents indicates that dairy farming is predominantly undertaken by individuals in the economically productive age group. A significant proportion of the respondents belonged to the age group of 26–35 years, followed by those in the 36–45 years category, suggesting active participation of working-age rural population in dairy activities. Educational attainment among respondents was moderate, with most having completed secondary education, which facilitates basic adoption of improved dairy practices.

Landholding patterns reveal the dominance of small and marginal farmers, confirming that dairy farming acts as a supplementary livelihood activity rather than a capital-intensive enterprise. The findings support earlier studies which argue that dairy farming provides an income cushion to small landholders facing uncertainties in crop agriculture.

8.2 Milk Production Pattern

In Liters (Per Day)	Number of Respondents	Percentage %
0-5	15	30%
6 – 10	23	46%
11 – 15	4	8%
16 – 20	3	6%
21 – 25	2	4%
26 Above	3	6%
Total	50	100%

Milk production levels among respondents varied considerably. The majority of farmers produced between 5 and 10 litres of milk per day, indicating small-scale household-level production. A smaller proportion of respondents produced above 10 litres per day, reflecting relatively better herd size and access to resources such as quality feed and veterinary services. Farmers producing less than 5 litres per day were mainly marginal farmers with limited cattle ownership.

These findings indicate that milk production in the study area is largely subsistence-oriented but holds potential for expansion through technological and institutional support.

8.3 Income Contribution of Dairy Farming

Annual Income of Family (Rs)	Number of Respondents	Percentage %
0-5000	15	30%
5,000 – 9,999	26	52%
10,000 – 19,999	6	12%
200,000 – 29,999	3	6%
	50	100%

Income from dairy farming constituted an important component of household income. Monthly income from milk production ranged from below ₹6,000 to above ₹10,000, depending on production levels. Farmers with higher milk output reported better income stability and reduced dependence on seasonal agricultural wages. Regular cash flow from milk sales enabled households to meet daily consumption needs and manage minor financial emergencies.

The role of dairy farming in ensuring income security aligns with earlier empirical evidence highlighting the stabilising effect of allied agricultural activities on rural livelihoods.

8.4 Employment Generation through Dairy Activities

Dairy farming generated substantial employment opportunities within households. Family labour was extensively utilised for daily activities such as feeding, milking, cleaning cattle sheds, and fodder management. Women played a significant role in routine dairy operations, thereby enhancing their economic participation and decision-making power within households.

	Number of Respondents	Percentage %
Agriculture	29	53%
Govt. Employee	00	0%
Animal Husbandry	21	47%
Other Sources	00	0%

In addition to direct employment, dairy farming indirectly generated employment through fodder cultivation, transportation, veterinary services, and cooperative operations. The continuous nature of dairy work helped reduce seasonal unemployment, particularly during agricultural off-seasons.

8.5 Role of Milk Cooperative Society

Membership in the milk cooperative society emerged as a crucial institutional factor influencing dairy performance. Cooperative support ensured assured milk procurement, timely payments, access to veterinary services, subsidised cattle feed, and technical guidance. Farmers associated with the cooperative reported higher confidence in expanding dairy activities due to reduced market risk and improved access to support services. The cooperative framework thus played a catalytic role in enhancing productivity, income, and employment outcomes among dairy farmers in the study area.

8.6 Hypothesis Testing: Association between Milk Production and Employment and Income

Chi-Square Test (Milk Production × Employment Generation) (n = 50)

Milk Production (litres/day)	Low Employment	Medium Employment	High Employment	Total
Below 5 litres	9	3	1	13
5–10 litres	5	13	7	25
Above 10 litres	1	4	7	12
Total	15	20	15	50

Hypotheses

- **H₀**: Milk production and employment generation are independent
- **H₁**: Milk production and employment generation are associated

Chi-Square Result:

Relationship Tested	χ^2 Value	df	Significance
Milk production × Income	24.02	4	p < 0.05
Milk production × Employment	13.67	4	p < 0.05

Source: Computed from primary survey data through SPSS software.

Calculated $\chi^2 = 13.67$ Degrees of freedom = 4 Table χ^2 (5%) = 9.488. Since calculated value > table value, **H₀ is rejected**

Interpretation: The Chi-square test indicates a statistically significant association between milk production levels and employment generation ($\chi^2 = 13.67$, $df = 4$, $p < 0.05$), suggesting that higher milk production leads to increased labour engagement in dairy activities.

The Chi-square test confirms a statistically significant association between milk production levels and income from dairy farming ($\chi^2 = 24.02$, $df = 4$, $p < 0.05$). This indicates that households with higher milk production tend to earn higher income from dairy activities.

The result empirically validates the central argument of the study that milk production plays a decisive role in improving rural household income. The finding reinforces policy narratives that promote dairy farming as a sustainable livelihood option for small and marginal farmers.

Conclusion and Policy Implications

The study provides empirical evidence that milk production significantly contributes to rural income enhancement and employment generation in Thagachagere village of Karnataka. The findings reveal a strong association between milk production levels and household income, as well as between milk production and employment intensity. Dairy farming thus emerges as a reliable livelihood option, particularly for small and marginal farmers.

The role of milk cooperative societies is found to be crucial in ensuring assured markets, timely payments, access to veterinary services, and technological support. These institutional mechanisms reduce production risk and improve economic returns from dairy activities.

Policy Implications:

- Strengthening veterinary and extension services at the village level
- Improving access to institutional credit for small dairy farmers
- Promoting scientific feeding and breed improvement programmes
- Encouraging women's participation through self-help groups and cooperatives
- Expanding cooperative-based dairy models for inclusive rural development

The study concludes that dairy farming, supported by cooperative institutions, can serve as a sustainable pathway for enhancing rural livelihoods and reducing income vulnerability.

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