

Women Empowerment in Rural-Urban Interface of Bengaluru: An Approach through Supply Chain Management

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ABSTRACT

Study conducted within the rural-urban interface of Bengaluru, this study collected data from women engaged in both dairy and non-dairy activities. Findings emphasized the significant role women play in income generation within the dairy sector, actively contributing through animal care and milk supply chain involvement. Notably, crossbreed cows exhibited higher profitability compared to local breeds. A substantial income disparity emerged between dairy-involved women (₹ 78,804) and non-dairy participants (₹ 52,933), with dairy women earning more despite dedicating less time. Rural women, equipped with essential indigenous knowledge, skills, and resources, demonstrate the potential to establish and manage enterprises. Women entrepreneur networks are pivotal sources of knowledge and are increasingly recognized as invaluable tools for fostering and advancing women's entrepreneurship. Thus, promoting the formation and strengthening of rural women entrepreneur networks becomes essential, harnessing their capabilities for development and empowerment.

Keywords: Dairy, Women, Supply chain, Employment, Rural-Urban

India, renowned as the world's largest milk producer, still witnesses the dairy sector residing in a rudimentary stage of development and modernization. Recently, dairying has emerged as a pivotal element in agricultural diversification, garnering increased attention as a risk mitigation strategy. Beyond contributing to health, nutrition, and lucrative family incomes, dairying generates substantial employment. Additionally, it holds potential for poverty alleviation and unemployment reduction, especially in rural, peri-urban, rain-fed, and drought-prone regions.

Preceding the inception of the Operation Flood program, India's milk production stood at approximately 21.2 million metric tons (MMT) in 1968-69, which surged to 51.4 MMT in 1989-90 and

further skyrocketed to 210 MMT during 2020-21. This growth trajectory, exceeding 6% annually, outpaces the global milk production growth rate of around 2%. Notably, per capita milk availability in India (427gms) outpaces the global average (322gms) as of 2021, showcasing the country's significant role in addressing nutritional needs (Press Information Bureau, Government of India).

Parallely, the emergence of women entrepreneurs has significantly impacted India's economy since the 1990s. These entrepreneurs harness modern

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technology, elevate investments, explore export niches, facilitate job creation, and inspire fellow women within the organized sector. Despite demonstrated potential, women entrepreneurs possess untapped capabilities. Focusing on women's entrepreneurship holds dual significance. Primarily, it emerges as an unexplored driver of economic growth, fostering novel employment opportunities and innovative solutions. Secondly, persistent societal and academic negligence towards this subject necessitates attention. Lower participation rates and industry preferences distinct from men underscore the need for acknowledgment and resolution. Addressing these aspects can magnify women entrepreneurs' transformative potential in India.

Entrepreneurship emerges as a viable solution for escalating rural youth unemployment. It generates employment within the social fabric, a boon for rural women juggling household responsibilities and livestock-oriented tasks. Abundant local resources empower rural women to undertake production and processing enterprises effectively. Entrepreneurship development enhances their personal capabilities, elevates decision-making status in family and society, and aligns with the evolving economic landscape. The dynamic economic scenario has spurred rural women to engage in small-scale entrepreneurship through Self-Help Groups, leading to economic empowerment and enhanced status.

Rural women's multifaceted role spans farming, livestock management, post-harvest activities, and more. Their contributions not only conserve assets but also elevate family incomes. Armed with indigenous knowledge and skills, these women have embraced technical empowerment, utilizing their spare time and existing skills to establish and sustain enterprises. Leveraging individual or collective income generation initiatives in tandem with self-help groups not only boosts income but also augments decision-making capacities, culminating in comprehensive empowerment. This paper critically reviews India's endeavors towards women's empowerment, reflecting their socio-economic progress.

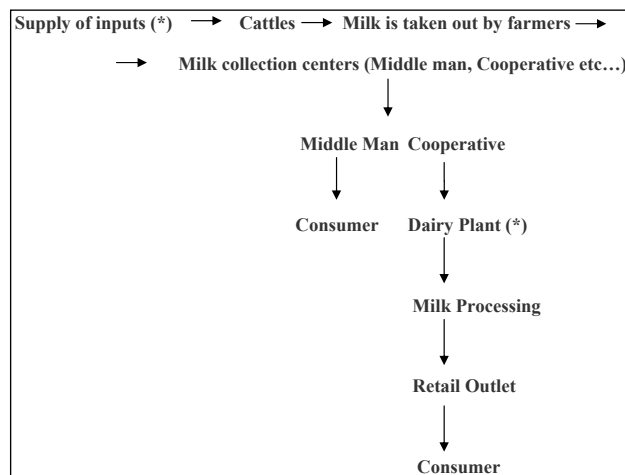
In essence, India's dairy sector remains a powerhouse of potential, poised for transformative growth and modernization. Simultaneously, women

entrepreneurs' remarkable contributions reverberate across the national economy. As the country marches towards greater inclusivity and prosperity, it must harness the dairy sector's potential and continue to empower women to drive sustainable economic and social change.

Issues and Challenges in Marketing

- ◆ Inability to maintain quality of the produce.
- ◆ Highly scattered producers with small marketable surplus.
- ◆ Market is highly unorganized.
- ◆ Acceptability of the consumer base.
- ◆ Less milk penetration to the rural market.
- ◆ Slow moving and costly transport facility.
- ◆ Absence of well-developed and standard pricing system.

Flow chart of milk supply chain in study area



* Indicates - (Fodder, Feed and veterinary Kit) and At dairy plants where chilling of milk, processing and packaging of milk and milk product is carried and further transported to consumption centres.

Transportation of milk and milk product from one place to another place through the means of refrigerated van to supply the milk to dairy plant.

METHODOLOGY

This study was conducted in Rural-Urban Interface of Bengaluru during 2016-17. The blue contours indicate the Northern and Southern research transects

the star mark indicates the reference point (Vidhana Soudha) in the city centre. The methodology adopted by project “Effects of urbanization on value chains and livelihoods of farmers and other stakeholders”, who considered the per cent of build-up area and distance from the city centre using GIS analysis of satellite images, and combining basic measures of building density and distance. The correlation of the two parameters and discontinuities in the frequency distribution of the combined index indicate highly dynamic stages of transformation, spatially clustered in the rural-urban interface (Ellen *et al.* 2017). The Northern and Southern transect were treated as separate populations when calculating the SSI (Survey Stratification Index) and allocating them to the six arbitrary strata for random sampling. In North transect 21 villages and in South transect 22 villages were selected.

Sampling frame for the present study consisted of dairy farmers from the two transects, north and south Bengaluru representing three layers (rural, transition and urban). A sample size of 50 households of dairy farmers from transition layer and rural layer and 20 from urban was selected randomly from the two transects constitute a sample of 240 dairy practicing households. In addition, 20 non-dairy farmers from each layer from the two transects were selected. Thus, the total sample size was 360. The required information on various aspects relating to socio-economic characters, input use, output and price realised, etc. were collected from the respondents using personal interview method with the help of structured pre-tested schedule. The information elicited from the respondent farmers pertained to women employment in dairy activity. Descriptive statistics were to analyze the issues.

RESULTS AND DISCUSSION

Comparative Economic feasibility of dairy practicing

The comparative benefits of dairy farming, as depicted in Table 1, underscore the advantages of crossbred cows over their local counterparts. Crossbred cows exhibit a significantly larger average herd size, more than double that of local cows. Notably, crossbred cows demonstrate higher metrics in terms of milk production cost, herd size, and gross

returns (₹ 104.34, 2.07, and ₹ 132.75, respectively) compared to local cows (₹ 58.34, 5.02, and ₹ 62.48, respectively). These findings unequivocally demonstrate the economic viability of maintaining a dairy industry with crossbred cows. Moreover, the average price realized by farmers for milk stands at ₹ 25 and ₹ 24 for crossbred and local cows, respectively. This difference in returns highlights the greater profitability of crossbred dairy farming, further validated by the findings of Jaiswal (2014) in Chhattisgarh’s Raipur district. Similar results were observed, where crossbred cows exhibited higher returns compared to local cows. In conclusion, the data accentuates the superior economic prospects of crossbred dairy farming, reiterating its position as a more profitable option when compared to local breeds.

Table 1: Economic feasibility of dairy practising

Sl. No.	Particulars	Local cows (₹/day/Animal)	Crossbreeds cows (₹/day/Animal)
1	Total Variable Cost	45.25	87.85
2	Total Fixed Cost	10.1	13.98
3	Marketing Cost	2.99	2.51
4	Total Cost	58.34	104.34
7	Herd Size	2.07	5.02
5	Yield (Lt/day)	2.39	5.13
6	Gross Returns (₹/day/Animal)	62.48	132.75
8	Average Price	24	25
9	Rate of Returns	0.99	1.64

Status of women engaged in dairy and non-dairy farming

Table 2 portrays the outcomes concerning average age, education, employment, and gross income of women participating in dairy and non-dairy endeavors. Dairy women displayed an average age of 45 years, while non-dairy women averaged 42 years. In terms of education, dairy women averaged 3 years, contrasted with 4 years for non-dairy counterparts. Dairy women engaged for an average of 273 human days per year, while non-dairy women worked for 308 days annually. Notably, a substantial distinction

surfaced in terms of gross income between dairy (₹ 78,804) and non-dairy women (₹ 52,933). This disparity underscores that non-dairy women possessed higher education levels, yet dairy women, despite spending less time, achieved greater income. Hence, dairy farming emerges as a pathway to uplift women from poverty. These findings parallel those of Kumari and Malhotra (2016), revealing that women engaged in dairy co-operatives experienced higher income compared to non-members, aligning with the transformative potential of dairy involvement.

Table 2: Status of women respondents engaged in dairy and non-dairy activity in study area

Sl. No.	Particulars	Dairy Women (n=30)	Non-Dairy women (n=30)
1	Age (Years)	45	42
2	Education (Years)	3	4
3	Employment (human day/Year)	273	308
4	Gross Income (₹/Year)	78,804	52,933

CONCLUSION

Dairying offers a proven path to escape poverty, particularly as a women-dominated enterprise. Urbanization, rising income, and health awareness drive the escalating demand for milk. In rural regions, women predominantly manage milch animals and milk production, signifying dairying's pivotal role. It bolsters rural economies through supplementary income, employment, and nutritional security, making a positive dietary impact.

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