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Aanchal dairy: A milestone for empowerment of Uttarakhand women

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Abstract

Aanchal Dairy, established as the flagship brand of the Uttarakhand Cooperative Dairy Federation Ltd. (UCDF) in 2001, represents a transformative cooperative movement in rural Uttarakhand. This research paper examines the institutional framework, operational structure, and evidence-based outcomes of Aanchal Dairy in empowering rural women through dairy cooperative societies. The study synthesizes quantitative and qualitative data from field research, organizational records, and longitudinal impact assessments. Key findings demonstrate that Aanchal Dairy has enabled 5,680 women farmers across 320 villages to increase milk production by 300%, household income by 17-40%, and significantly enhanced social decision-making participation among women members. The three-tier cooperative system with 27,520 registered members across 551 organized milk societies provides a scalable model for women's economic empowerment and rural development in hilly terrain regions. This paper presents Aanchal Dairy as a critical case study of how institutional dairy cooperatives serve as instruments for advancing gender equality, nutrition security, and sustainable livelihoods in economically marginalized communities.

Keywords: Dairy cooperative, women empowerment, rural development, Uttarakhand, socio-economic development, gender economics, agricultural livelihoods

Introduction

Background and Context

Uttarakhand, a Himalayan state in northern India, has a rich agrarian heritage deeply intertwined with livestock rearing and dairy farming. However, rural communities, particularly women, face significant challenges stemming from climate change impacts, limited market access, inadequate infrastructure, and traditional gender roles that restrict economic participation. According to research data, approximately 75 million women are engaged in dairying in India against only 15 million men, yet women remain substantially underrepresented in formal cooperative structures and decision-making processes^{[1][2]}.

The dairy sector in Uttarakhand contributes significantly to the state's agricultural output, with milk production reaching 1.84 million tons annually^[3]. However, smallholder dairy farmers, particularly women, have historically faced barriers including:

- Unorganized market structures and absence of direct market linkages
- Lack of storage and processing facilities, leading to milk spoilage and contamination
- Limited access to veterinary services and modern animal husbandry practices
- Inaccessible credit and financial services
- Transportation difficulties due to hilly terrain
- Gender-based restrictions on independent economic participation

Emergence of Aanchal Dairy

The establishment of the Uttarakhand Cooperative Dairy Federation Ltd. (UCDF) in 2001, operating under the brand name "Aanchal," marked a paradigm shift in addressing these challenges^[4]. Aanchal emerged as a three-tier cooperative system designed to eliminate middlemen from the state's dairy business, provide remunerative prices to milk producers, and

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create sustainable employment opportunities at the village level.

Research Objectives

This paper aims to:

1. Document the institutional framework and operational structure of Aanchal Dairy cooperative system

2. Present quantitative evidence of economic and social impacts on women members

3. Analyze the mechanisms through which Aanchal facilitates women's empowerment

4. Examine the

- sustainability and scalability of the cooperative model
4. Provide evidence-based recommendations for strengthening women's participation in dairy cooperatives

Institutional Framework and Organizational Structure
Three-Tier Cooperative System

Aanchal Dairy operates through a sophisticated three-tier cooperative system that ensures democratic governance, equitable bene t distribution, and comprehensive member support [5].

Table 1: Three-Tier Cooperative Structure of Aanchal Dairy

Tier	Component	Function
Primary	Village-Level Milk Societies	Milk collection, quality testing, member interface
Secondary	District Milk Unions	Milk procurement, processing, district-level marketing
Tertiary	State Federation (UCDF)	Apex coordination, brand management, state-level operations

Organizational Scale and Coverage

As of 2024, Aanchal Dairy operates at an impressive scale [5]:

- 27,520 registered members across the federation
- 551 organized milk societies at village level
- 11 District-Level Member Cooperative Milk Unions covering all 13 districts
- 5 chilling centers with combined capacity of 50,000 liters per day
- Integrated cattle feed factory supporting member productivity
- 890+ retail sellers across the region
- Over 500 acres of certi ed organic farm sources

Financial and Administrative Structure

Aanchal Dairy follows cooperative accounting principles aligned with state cooperative legislation, ensuring transparency and accountability [5]. The federation maintains meticulous records of:

- Member procurement from milk societies
- Production costs and operational expenses
- Sales operations and market performance
- Member payment schedules and distributions
- Quality control metrics and food safety standards

Strategic leadership is provided by Managing Director Shri

Jaideep Arora and Administrator Shri Ashok Kumar Joshi, who coordinate federation-wide operations and policy implementation.

Mechanisms of Women's Empowerment ThroughAanchal Dairy

Economic Empowerment
Income Generation and Poverty Reduction

Research conducted on dairy cooperatives in Uttarakhand demonstrates signi cant economic impacts on women members' household income [6]. The empirical evidence shows:

- Women members increased household income by 40% to 60% following participation in Aanchal societies
- Average monthly income increase: ₹5,000 before intervention to ₹13,000-16,000 after intervention
- 25% of women members reported ability to increase monthly family income from income-generating activities
- Women members participating for 3+ years showed income growth of 17-25% annually

Milk Production Enhancement

A comprehensive eld study of women's dairy cooperative societies in Uttarakhand's Haldwani block revealed remarkable productivity gains [6]:

Table 2: Impact of Aanchal Cooperative Membership on Milk Production

Parameter	Before Joining	After Joining	Percent Change
Milk Procurement (liters/month)	2,100	6,500	+209%
Market Linkages	Informal/Direct	Formal Cooperative	Institutional
Price Consistency	Volatile	Fixed by Union	Stable
Product Quality Standards	Unregulated	FDA Compliant	Certi ed

Social and Decision-Making Empowerment
Participation in Household Decisions

Research on women's dairy cooperatives shows that participation in formal milk producer groups significantly increases women's voice in household economic decisions [7]:

- Women empowerment index increased from 0.32 (before membership) to 0.49 (after membership) – a 53% improvement
- 78% of member women reported increased participation in household financial decisions
- 82% reported ability to make independent decisions on dairy herd management
- Participation in cooperative meetings provided platform

for women to exercise voting rights outside home environment

Self-Esteem and Agency

Studies specifically examining women dairy cooperative members in Uttarakhand found enhanced self-confidence [6]:

- Women members demonstrated significantly higher self-esteem than non-members
- Ability to generate independent income increased self-actualization and psychological well-being
- 71% of member women reported improved self-confidence in farm-level decisionmaking
- Social status within community improved, reflected in

increased household respect

Education and Skill Development

Capacity Building Programs

Aanchal Dairy conducts regular training programs for women members, covering ^[5]:

- Modern animal husbandry practices
- Dairy herd health management and veterinary care
- Clean milk production techniques
- Cooperative governance and record-keeping
- Financial literacy and savings schemes
- Fodder management and feed production

Educational Attainment of Children

A significant secondary benefit of women's participation in Aanchal cooperatives is investment in children's education ^[6]:

- 68% of member households reported increased investment in children's schooling
- Enhanced household income enabled payment of school fees for all children
- Higher educational aspirations observed among children of cooperative member mothers

Health and Nutrition Security

Household Nutrition Improvement

Increased dairy income directly translated to improved nutrition in member households ^[7]:

- Enhanced household food security through increased milk consumption
- Improved nutritional status of children and adolescents
- Better health outcomes as measured by reduced malnutrition indicators
- Improved maternal health through increased milk and dairy product consumption

Scale of Impact: Evidence from Longitudinal Research Reach and Coverage

The ILRI-Himmatnagar partnership data reveals the expanding reach of cooperative dairy enterprise models in Uttarakhand ^[8]:

Table 3: Longitudinal Impact Data: Dairy Cooperative Expansion in Uttarakhand

Metric	2008	2024
Number of Dairy Enterprises	10	25+
Women Farmers Served	300	5,680
Villages Covered	45	320+
Milk Production Growth (%)	Baseline	+300%
Household Income Growth (%)	Baseline	+17-40%

Women's Labor Force Participation

Research quantifying gender contribution to dairy cooperatives in Uttarakhand shows ^[9]:

- Women contribute 70.36% of total labor hours in member dairy households
- Men contribute 29.64% of labor hours
- This substantial contribution is accompanied by correspondingly higher income generation for women
- Time investment increases women's self-confidence through independent income generation

Productivity and Quality Metrics

Aanchal Dairy achieved significant improvements in milk marketing and quality ^[5]:

- Implementation of cold chain infrastructure reduced milk spoilage from 35% to 8%
- Quality testing protocol implementation increased Grade-A milk from 42% to 78%
- Bulk milk cooler installation enabled 48-hour milk preservation maintaining nutritional quality
- State Food Safety Authority certification achieved across all processing facilities

Challenges and Sustainability Considerations

Structural Challenges

Despite significant achievements, Aanchal Dairy and women's participation face ongoing challenges ^[8]:

- Geographic constraints: Hilly terrain increases transportation and logistics costs
- Climate variability: Seasonal fluctuations in milk production affect income stability
- Land holdings: Small and marginal farmer dominance limits economies of scale
- Technology adoption: Limited digital infrastructure in remote villages affects recordkeeping and market information access

Social and Cultural Factors

Gender-related barriers persist despite cooperative membership ^[9]:

- Patriarchal decision-making structures may limit women's autonomy despite cooperative membership
- Household-level gender norms may restrict women's participation in meetings and leadership positions
- Male control over larger herd sizes limits women's capacity to increase production
- Discrimination in land ownership restricts collateral availability for credit access

Policy and Market Factors

External factors affecting sustainability ^[5]:

- Milk price volatility affects member returns
- Competition from organized dairy sector businesses
- Subsidy structures favoring large-scale operations
- Regulatory compliance costs, particularly for food safety certification

Discussion and Recommendations

Key Findings Summary

This research documents Aanchal Dairy as a transformative institutional innovation for women's empowerment in Uttarakhand. The evidence demonstrates that:

- 1. Institutional Framework Works:** The three-tier cooperative system provides effective local governance, market linkage, and member support mechanisms ^[5].
- 2. Economic Impact is Substantial:** Women members experience 40-60% household income increases and 300% milk production growth through cooperative participation ^[8].
- 3. Empowerment is Multi-Dimensional:** Beyond income, women gain enhanced decision-making participation, self-esteem, and agency ^{[6][7]}.
- 4. Scalability is Proven:** Expansion from 300 to 5,680 women farmers across 320 villages demonstrates model replicability ^[8].
- 5. Secondary Benefits are Significant:** Educational, health, and nutrition outcomes improve for member households ^{[6][7]}.

Recommendations for Strengthening Women's Empowerment Through Aanchal

Institutional Strengthening

1. Enhance leadership training for women in cooperative governance roles, targeting
2. 50% female representation in managing committees
3. Establish dedicated women's federation units with gender-sensitive policies and services
4. Develop digital platforms for transparent information sharing and record-keeping
5. Strengthen backward linkages to provide subsidized quality feed and veterinary inputs

Financial Inclusion

1. Expand credit access through cooperative credit schemes with women-specific lending terms
2. Establish savings and insurance schemes tailored to seasonal income patterns
3. Facilitate access to government dairy development schemes and subsidies
4. Support women's acquisition of land titles for collateral purposes

Human Capital Development

1. Scale up training programs covering clean milk production, fodder management, and herd health
2. Integrate financial literacy and business management education
3. Develop youth engagement programs to attract young women to dairy enterprise
4. Support cooperative member participation in national/state-level capacity building programs

Market Development

1. Expand value-added product lines (paneer, ghee, yogurt, cheese) to increase member margins
2. Strengthen brand recognition of Aanchal products in regional and national markets
3. Develop direct-to-consumer marketing channels and e-commerce platforms
4. Ensure fair pricing mechanisms that reflect quality premiums to member producers

Gender and Social Inclusion

1. Implement gender awareness programs addressing patriarchal barriers within and beyond cooperatives
2. Create safe spaces for women's collective voice and grievance redressal
3. Promote women's land ownership and property rights through supportive policies
4. Monitor and report gender-disaggregated outcome metrics

Policy Implications

The Aanchal Dairy case study offers critical policy lessons:

1. **Cooperative-Centered Development:** Institutional dairy cooperatives offer more sustainable and equitable pathways for rural development compared to individual or private-sector models.
2. **Gender-First Design:** Policies explicitly targeting women's participation show superior outcomes in both economic and social dimensions^[10].
3. **State-Civil Society Partnership:** Collaboration between government, cooperatives, and NGOs (as demonstrated with Himmotthan Society partnership) accelerates impact

scaling.

4. **Infrastructure Investment:** Public investment in cold chain infrastructure, processing facilities, and transportation is essential for cooperative sustainability.

Conclusion

Aanchal Dairy represents a significant milestone in advancing women's empowerment in Uttarakhand through the cooperative dairy movement. With 27,520 registered members, 551 milk societies, and operations spanning all 13 districts, Aanchal demonstrates the potential of institutional dairy cooperatives to transform rural livelihoods at scale.

The evidence presented in this research paper shows that women's participation in Aanchal cooperatives results in:

- **Economic Empowerment:** 40-60% household income increases with 300% milk production growth
- **Social Empowerment:** Enhanced decision-making participation and self-esteem
- **Sustainability:** Long-term institutional structures ensuring stable market linkages and fair prices
- **Multi-Generational Impact:** Educational and health benefits extending to children and community

However, realizing Aanchal's full potential requires sustained commitment to institutional strengthening, gender-sensitive policy design, and continued investment in rural infrastructure and capacity building. The cooperative model, when combined with explicit gender focus and supportive policy environments, offers a replicable pathway for advancing both agricultural productivity and social equity in marginalized rural communities.

As India advances toward its dairy sector vision of ₹2 trillion by 2035, models like Aanchal Dairy provide critical evidence that gender-inclusive cooperative institutions are not merely social objectives but essential drivers of agricultural modernization, food security, and inclusive rural development. Women dairy farmers, when organized through formal cooperative structures with appropriate support systems, become powerful agents of community transformation and sustainable development.

Conflict of Interest

Not available

Financial Support

Not available

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