



Empowering Dairy Farmers: Odisha Milk Federation's Sustainable Development Model

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(Received: 24 October 2025; Revised: 25 December 2025; Accepted: 20 January 2026; Published online: 08 February 2026)

(Published by Research Trend)

DOI: <https://doi.org/10.65041/BiologicalForum.2026.18.2.8>

ABSTRACT: The main purpose of the paper is to examine the critical role of OMFED (State Milk Federation Co-operative Societies) in spurring the holistic sustainable dairy development ensuring, safer & nutritious milk to customers, technological upgradation, gender equality, robust procurement system, nurturing women farmers into Agriprenuer, timely payment mechanism and livelihood enhancement for small & marginal farmers. The study develops a conceptual sustainable framework encompassing all imperative factors responsible for developing sustainable & resilient dairy ecosystems. The paper develops the conceptual framework supported with existing academic literature & other secondary sources. The study posits five research questions focusing on Gender Parity, Food Safety, Product Innovation & diversification and aligning their strategy with the national mission of doubling the Farmers' Income. The OMFED has taken novel steps to trigger sustainable dairy development to enhance the quality of life for small & marginal farmers. They stringently adhere to GMP and SOP to consistently supply quality milk. They established a robust procurement system & cold chain infrastructure. They conduct training programmes for Women farmers and also provide them with working capital loans to start their own ventures. Their primary focus is to augment financial literacy among the women farmers. They strictly maintain financial probity. They have implemented sustainable intervention such as water conservation, organic fodder & minimizing environmental waste. Their thrust area is product innovation & diversification, helping to switch over from volume-driven to value-driven growth. Few extant studies that focus on sustainable dairy development in Odisha. Unlike prior production-centric studies, gender parity, procurement system, women's livelihood, environmental sustainability, innovation & diversification have been explicitly highlighted the OMFED led Co-operative model in Odisha.

Keywords: Sustainability, Resilience, Co-operative, Gender Parity, livelihood.

INTRODUCTION

A new India is progressing rapidly, self-reliant & casting an indelible impression of inclusive growth in the dairy sector, which accounts for 5% of the national economy. India is the largest producer of milk, dominating a slice of 24% of global milk production. India produced 245 million tons of milk in 2023-24, contributing roughly 18.4% of India's national GDP (NDDB, 2023-24). The Indian dairy market size is valued at 18975 billion rupees in 2024 & moving at a breakneck 12.35% CAGR. The dairy industry is undergoing a revolutionary transformation in Odisha, and OMFED, the state federation, is working spontaneously to uplift rural livelihoods & democratize prosperity. The OMFED empowers over 3.5 lakh dairy farmers across the state, bridging the gap between far-flung areas of rural communities & organised market. It has a strong network of over 4000 milk societies. The OMFED ensures that every farmer of Odisha, especially small & marginal farmers, is financially independent. To achieve

this, OMFED has built a sound conduit for direct procurement, transparency in payments and a strong capacity - building programme. Besides, it also provides a myriad of ancillary facilities to farmers such as veterinary support; cattle feed assistance, fodder cultivation advice & productive enhancement training, which form a knowledge-driven rural ecosystem for farmers to thrive. OMFED plays a very instrumental role in doubling the income for small & marginal farmers, who accounts for 75% of farmers in Odisha. Currently, the milk production in Odisha is 26 lakh tonnes, and per capita availability is 156 gm/day, which is much less than the national average (NDDB, 2018-19). Despite production escalating in the state, cattle production plummeted by 15% between 2012 and 2019 (20th livestock census report, 2019). The state milk federation in Odisha, *i.e.* OMFED, is able to fill the void to a greater extent. Considering the enormity of this situation, sustainability became an indispensable dimension to any dairy enterprise. Although there are ample papers that

study dairy production and its influence on agricultural economic growth, a comprehensive approach to sustainable dairy development has been underrepresented. Hence, there is an urgent need to examine the holistic steps embraced by the dairy co-operatives, especially the state federation, to spur sustainable growth in the dairy sector. Very few contemporary studies have been dedicated to state co-operatives, especially in Odisha, where the state milk federation, *i.e.* OMFED, has initiated numerous steps not only to ramp up the milk production but also to uplift the socio-economic condition of small & marginal farmers. The present study posits the prominent research question to assess the growth parameter of state federation co-operatives (OMFED) based on sustainability steps taken, and framing up the sustainable framework

RQ1: What is the pivotal role played by OMFED in ensuring safe & nutritious milk for every person of Odisha

RQ2: Is OMFED believe in gender parity driving the dairy value chain and creating a sustainable working environment

RQ3: What sustainable path constantly pursued by OMFED for building up a resilient, sustainable ecosystem

RQ4: How do product innovation & diversification contribute to OMFED growth?

RQ5: Does OMFED mission is aligned with the national mission “**Doubling the farmer income**”

Literature Review. The Indian agricultural sector is undergoing through a rapid transformation, and sustainability has always been an important parameter, providing impetus to growth. The livestock sector supports the livelihood of around 66% of the families (Boliko, 2019). The milk itself contributes 33% of rural households’ gross income (Sarkar & Dutta, 2022). The dairy sector witnessed a consequential leap in business due to technological innovation, improved infrastructure facilities, and the setting up of a stringent quality system that rigorously monitors milk quality at every point of the value chain. Despite being one of the largest producers, the low productivity poses a major issue for India, and Odisha is no exception. India needs to produce 300-400 million tonnes of milk by 2050, and to achieve this humongous target, Odisha can play a major role. Besides, there must be a balance between dairy management practices, sustainable livelihood and environmental practices (Alvez *et al.*, 2013). As estimated, dairy farming accounts for 60-65% of small & marginal farmers’ total annual income (Low & Gereffi 2009). This spawned socio-economic transformation in the rural population (Karmakar & Banerjee 2006). According to Bosshard (2000), sustainability in dairy farms should encompass all activities performed by dairy farmers to bolster the quality of output. Though there is an ample definition of sustainability proposed by the researcher conjunction with different contexts (Shearman, 1990; Kelly, 1998). There are abundant studies on the production aspects of dairy (Pawar, 2001; Staal *et al.*, 2008), but other areas remains unexplored, such as marketing & veterinary infrastructure. Some studies have stated the impact of livestock production and its logistics, processing and consumption on climate

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(De Vries and de Boer 2010). The study by Yadav and Rao (2024) averred that the existing policy has elevated the farm income of small & marginal farmers. There are a few crucial internal factors that drive milk production: feed & fodder production, feeding management, herd management, housing system, milking system and general management (Moran, 2009). According to Gerosa & Skoet (2012), rising disability income in developing countries augment the consumption of milk and its value-added products. In the Indian context, both external and internal factors contributed significantly to the rise in milk production. These are high-yielding breeds, quality & balanced feed, veterinary aid, health coverage, improvement of the productivity of village pastures, farmers’ training & breeding technology & processing infrastructure have significantly contributed to the rise in milk production (Acharya, 2016; Kumar *et al.*, 2013; Gupta, 2011). Besides, the revolutionary role of IT & immaculate payment transparency are the noteworthy factors that influence the milk production (Chakravarthy *et al.*, 2000). Devendra (2001) suggests a few strategies to enhance milk production sustainably, including interdisciplinary research, integrated resource management, and fostering a conducive relationship among all stakeholders in the dairy sector. Some studies favored the active participation of people in economic activity; increasing output and ensuring equitable distribution among stakeholders, aiding the organization grow sustainably (Shukla & Singh, 2009).

MATERIAL AND METHODS

The study is based on a conceptual research design. It involves the development of a theoretical framework /model through the analysis of existing literature. The data is gleaned through academic articles, books & other relevant sources. The study is confined to qualitative analysis.

Analysis:

RQ1: What is the pivotal role played by OMFED in ensuring safe & nutritious milk for every person of Odisha?

Today, consumers are highly health-oriented; hence, the demand for clean, hygienic & nutritious food has become a necessity. The OMFED delivered high-quality, safe milk & dairy products to lakhs of households every day. They have a strong cold chain infrastructure comprises of 11 chilling plants and 19 milk chilling centre’s, supported by sophisticated testing labs. The federation stringently follows SOPs & GMP to ensure that the highest-quality milk reaches consumers without a trace of adulteration. Every drop of milk is sourced from farmers, rigorously tested at the procurement stage, and processed in modern chilling plants under strict food safety protocols. The voyage of pasteurisation to packaging OMFED maintained the global quality standard and nutritional value to preserve the taste & freshness. The state milk federation figured out the state’s nutritional imbalance in the diet; hence, they rolled out health dairy products like probiotic curd, A2 milk, low-fat milk & fortified variants to combat with the nutritional imbalances. OMFED gives paramount importance to food safety, traceability & nutritional

balance. It has a robust distribution centre that covers rural, suburban, and urban areas. OMFED truly believes that for a healthier state & Nation, every family should have access to the goodness of milk.

RQ2: Does OMFED believe in gender parity driving the dairy value chain and creating a sustainable working environment?

The growth of the Nation hinges on the development & empowerment of women. Gender inclusivity is the pillar of the organization. In Odisha thousands of women are associated with milk co-operatives. The unflinching efforts of OMFED to incorporate women into their dairy mainstream. The crucial role of SHG & Women-driven producer organization is lending immense growth to the organization. OMFED provides a golden platform for women not just to contribute but to be an integral and inextricable part of the dairy value chain. Right from milking to marketing & from governance to product innovation, women play a pivotal role. OMFED conducts regular training programmes to sensitize women to technological changes, develop and step up the financial literacy, and inculcate entrepreneurial skills. The transparent payment system and mobile-based transactions impart financial leverage and empowerment to women. They are now the decision-makers in their households and enjoy respect in their communities. Gender focused transformation not only fosters inclusive growth but also influences child and family development and rural entrepreneurship. The OMFED's quest for a gender-centric, sustainable approach has increased their family's disposable income and self-confidence. By inducting Women as active stakeholders, it aims to build up resilient & stellar rural economy where women & children thrive.

RQ3: What sustainable path is constantly pursued by OMFED for building up a resilient, sustainable ecosystem?

Sustainability is not confined to pages; it must be implemented at the grassroots level to mitigate climate change. The OMFED realized that sustainability is the need of the hour to protect future generation. They have revamped their business model in such a way that it renders benefits to people and the planet while also deriving profit. The dairy development must be in tandem with the environment. OMFED launched a venture to produce organic fodder, manage cattle nutrition management and reduce chemical use. To conserve energy, they have introduced solar-powers chillers in remote areas of Odisha, thereby reducing their inordinate reliance on diesel-based generation. OMFED dairy is resorting to clean energy through switching over to a bio gas plant, recycling slurry & cow dung. To bolster sustainable livelihood, the federation has successfully deployed energy-efficient equipment in pasteurisation & packaging. They have taken novel steps towards eco-friendly packaging, exploring biodegradable & recyclable materials to minimise

environmental waste. Every unit of OMFED is connected with water conservation, water segregation & reusability practices. Their entire approach is in consonance with the Green India Mission, which emphasizes the net-zero goal & promoting sustainable agriculture.

RQ4: How do product innovation & diversification contribute to OMFED growth?

Contemporary consumption is shifting towards healthier products. OMFED embraced this transition with open arms by revamping its entire product line to meet evolving consumer preferences. They have introduced a new range of dairy products like Probiotic dahi, A2 milk, spiced Buttermilk, Chenna-based sweets, Paneer & unique flavours of Ice-cream. They have worked diligently in the areas of quality certification & modern packaging. They have expanded their distribution channel from conventional trade to modern trade. Their products are available online, in supermarkets & hypermarkets, milk parlours and even through refrigerated vending kiosks. The state co-operatives are heavily focused on imperative aspects of the supply chain, such as traceability, block chain, and customer feedback systems. They are trying to rejuvenate diminishing local cultures through products and paving the way for extensive branding & distribution. The OMFED is making a shift from volume-driven to value-driven growth. The consumer should realize that OMFED is the branded dairy powerhouse and that it is a consumer, customer and farmer-centric federation.

RQ5: Is OMFED's mission aligned with the national mission "Doubling the farmer income"?

OMFED impacted the livelihood of small & marginal farmers by doubling their farm income. Their effort is to transform dairy from a supplementary livelihood into a primary income stream for a lakh of households in Odisha. They have streamlined price stabilization, online money transfer, a capacity-building programme & their immaculate direct procurement policy, ensuring that dairy farmers enjoy steady & transparent earnings. It also provides high-quality cattle breeds to farmers & timely rendering of various veterinary services at the farmers' doorstep without any cost. They have various AI centres & provide cattle insurance to small & marginal farmers. Due to their deep distribution facilities, they have succeeded in eradicating middlemen to a greater extent, thereby enhancing the farmers' margin. They have collaborated with various national schemes such as PM Matsya Sampada Yojna and the animal husbandry scheme, so that small & marginal farmers have a steady & consistent daily income from milk sales. The OMFED mission is to achieve full inclusive growth and build co-operative-led development. They are leaving no stone unturned to develop the resilient dairy infrastructure, which is fully aligned with rural prosperity, financially viable & sustainable.

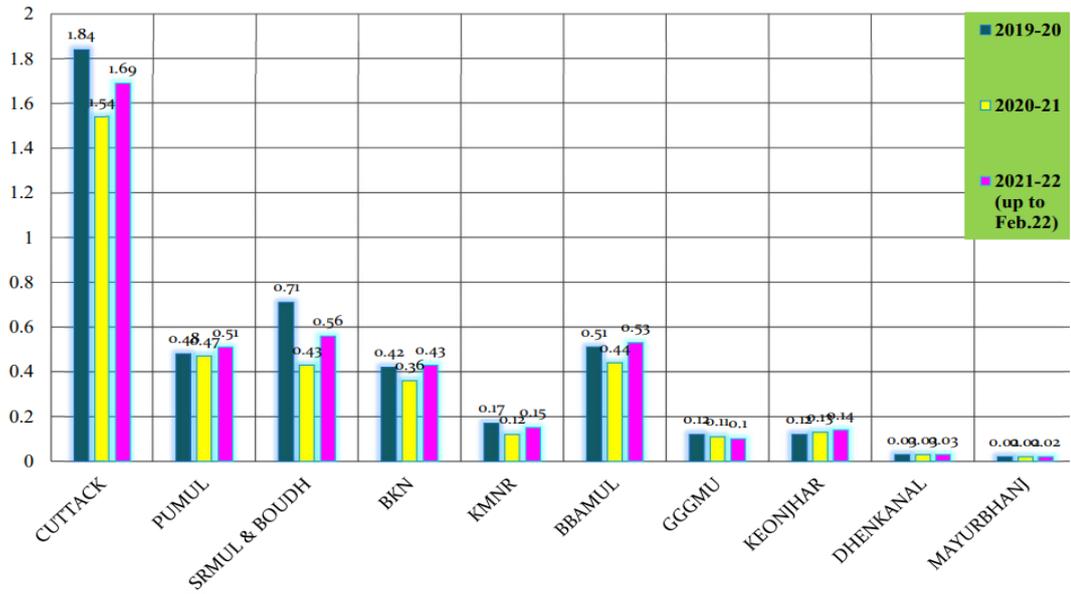
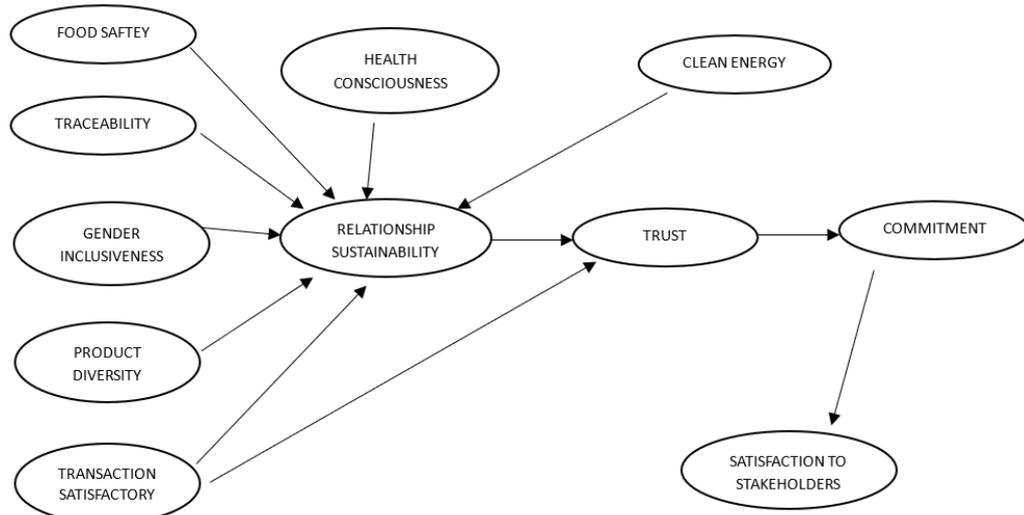


Fig. 1. Milk Procurement of Member MUs of OMFED (LkgPD)
 Source: <https://omfed.com/statistics/PROCUREMENT2010.pdf>



Fig. 2. Turnover of OMFED
 Source: <https://omfed.com/statistics/TURNOVER2010.pdf>

Conceptual Framework



RESULTS AND DISCUSSION

Sustainability is the convergence of three pillars: people, profit and planet. The OMFED has struck the right balance between the three elements. OMFED has positioned itself as a resilient dairy co-operative in Odisha, setting the precedent for other private dairy co-operatives in the state.

People approach: Gender inclusivity is the core driver of creating a sustainable organisation. It is a people-centric movement and truly believes in giving equal empowerment to men & women. They follow a 360-degree peer-to-peer review for young talent to thrive and create a harmonious relationship among employees. The 2.5 lakh farmers are connected with the dairy co-operative, illustrating their profound trust in the federation. The federation has a neat & clean direct procurement policy of milk, expeditious payment & strong feedback system, clearly providing an advantage to the federation compared to its competitors. They conduct regular training & capacity building programmes for female farmers to inculcate entrepreneurship skills. They strive to create financial independence for the women in Odisha.

Planet approach: OMFED's reliance on clean energy is a stepping stone towards sustainability. They have set up a biogas plant, solar panels, wastewater management, and the recycling of cow dung & slurry is fully oriented with circular economy principles. The use of eco-friendly packaging, including biodegradable materials, demonstrates their avid commitment to nature. They are following the arduous path of net-zero emissions. These efforts directly support national environmental policies, such as the **Green India Mission**, and are consistent with the calls by De Vries & de Boer (2010) to trim livestock-related emissions.

Profit approach: The OMFED followed a sustainable path, taking cognizance of profit for its multiple stakeholders. They have ameliorated the economic condition of many farmers, especially small & marginal farmers, across Odisha. They have a prompt payment structure in order to eradicate the middlemen, thereby increasing their profit margins. They provide regular veterinary services to dairy farmers, provide high-quality fodders & timely cattle insurance. These steps not only augment their farm income but also boost up the milk quality & its products. They have diversified their product line to meet consumer's evolving and dynamic preferences. They have successfully collaborated with many national dairy schemes in India, ensuring local producers access to national resources. According to Yadav and Rao (2024); Acharya (2016), such institutional support mechanisms are essential for enhancing farm incomes, and OMFED embodies this through co-operative-led economic transformation.

CONCLUSIONS

This study underscores the pivotal role of Odisha Milk Federation (OMFED) in fostering sustainable dairy development in Odisha, India. By adopting a holistic approach that empowers dairy farmers, promotes gender equality, and incorporates eco-friendly practices, OMFED has pioneered a co-operative-led development

model. In line with national objectives, such as doubling farmers' incomes, OMFED's initiatives have positively impacted the livelihoods of small and marginal farmers. This research offers valuable lessons for policymakers and stakeholders, highlighting the potential of dairy co-operatives to drive sustainable growth, social justice, and environmental sustainability. By emulating OMFED's model, other dairy co-operatives and development projects can help to achieve sustainable development goals in the dairy sector.

Practical implication: The study proffers a comprehensive conceptual framework that act as a beacon for policymakers, marketers & Co-operative institutions to embrace this model across Odisha to enhance the income of small & marginal farmers. The OMFED model helps to build resilient, inclusive & sustainable dairy ecosystem.

FUTURE SCOPE

The further research can be empirically validate on the proposed conceptual framework through primary data collected from dairy farmers, Women farmer and Co-operative officials from different districts of Odisha. The researcher can use PLS (Partial Least Square) technique to vet the causal relationship among the aforementioned constructs in the conceptual model.

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How to cite this article: Shantanu Raj, Aditya Ranjan Samal and Sanat Mishra (2026). Empowering Dairy Farmers: Odisha Milk Federation's Sustainable Development Model. *Biological Forum*, 18(2): 54-59.