



## Sustainable Livelihoods Through Millets: The Role of Tribal Women Entrepreneurs

\*Asutosh Mishra<sup>1</sup> and Sujit Majhi<sup>2</sup>

<sup>1</sup>M.Sc. Scholar, Department of Extension Education, College of Agriculture, OUAT, Bhubaneswar, Odisha, India – 751003

<sup>2</sup>Assistant Professor, Department of Extension Education, College of Agriculture, OUAT, Bhawanipatna, Odisha, India – 766001

\*Corresponding Author's email: [asutoshmishra2311@gmail.com](mailto:asutoshmishra2311@gmail.com)

Millets often termed as nutri-cereals, have re-emerged as critical crops for addressing climate resilience and nutritional security in tribal regions of India. Adapted to dryland agro-ecosystems, millets offer ecological sustainability, high nutritional value, and livelihood opportunities for marginalized communities. This article highlights the evolving role of tribal women in millet-based enterprises, focusing on their transition from traditional cultivators to entrepreneurs. Drawing on empirical studies and policy analyses, particularly from Odisha, this article showcases how initiatives like the Odisha Millet Mission and women led Self-Help Groups (SHGs) facilitate capacity building, value addition, and market participation. Despite these advances, structural challenges persist, including limited credit access, poor infrastructure, and weak market linkages. Empowering tribal women through skill development, technology adoption, and inclusive value-chain integration can transform millet processing into sustainable micro-enterprises. Strengthened policy implementation and institutional support are essential to ensure that women's entrepreneurship in the millet sector contributes to resilient food systems, gender empowerment, and inclusive rural development.

**Keywords:** Millets, Tribal women, Entrepreneurship, Sustainable livelihoods

### Introduction

Millets often referred to as nutri-cereals have gained renewed global attention for their capacity to address two interlinked challenges that are climate vulnerability and nutritional insecurity. Unlike water-intensive cereals such as rice and wheat, millets flourish in dryland and tribal agroecosystems, making them essential for communities reliant on rainfed agriculture. Research shows that these crops can withstand climatic stress, require minimal external inputs, and offer high nutritional value due to their rich mineral, fiber, and protein content (Mukherjee *et al.*, 2025). Across the tribal belts of India, millets hold cultural, economic, and ecological significance. Women in particular have traditionally led the tasks of cultivation, seed preservation, processing, and preparation of millet-based foods. Today as government programs and value-chain interventions promote the millet sector, tribal women are increasingly emerging as entrepreneurs who manage processing units, develop value-added products, and participate in collective marketing channels. This transition strengthens household nutrition while simultaneously creating sustainable livelihood opportunities (Pandey *et al.*, 2024; Ritu & Mj, 2025). Understanding the growing entrepreneurial role of tribal women in the millet sector is critical for shaping policies that promote rural development, gender empowerment, and resilient food systems.

## Millets and Tribal Livelihoods

The suitability of millets to resource poor environments makes them indispensable in tribal agriculture. Their drought tolerance, short growing cycles, and resilience to poor soils have been widely documented in agro-climatic studies (Mukherjee *et al.*, 2025). Additionally, millets contribute significantly to dietary diversity and are increasingly recommended to address micronutrient deficiencies. However, despite their ecological benefits, millet producers in tribal areas often face issues such as weak market linkages, inadequate processing facilities, and limited price incentives. These gaps restrict the economic potential of millets (Ritu & Mj, 2025). Strengthening the entire value chain from production to consumption has been shown to improve incomes in tribal communities as observed in value chain analyses from Attappadi taluk of Kerala and similar regions (Ritu & Mj, 2025).

## Tribal Women in Millets: Traditional Knowledge to Entrepreneurship

Women play a pivotal role in millet systems. They handle seed selection, land preparation, weeding, harvesting, and nearly all post-harvest operations such as drying, threshing, and cleaning. Their deep cultural knowledge and hands on experience position them well to participate in and lead entrepreneurial activities. Studies from Odisha reveal that tribal women constitute a major share of millet cultivators in several districts but face barriers related to market access, finance, and decision-making (Pandey *et al.*, 2024). Nevertheless, women's collectives have leveraged this traditional knowledge to preserve indigenous millet varieties and to produce processed items such as flour, malted mixes, laddu, and baked goods for both local consumption and sale.

## Value Addition, SHGs, and Market Linkages

Value addition greatly enhances millet profitability. Research indicates that women led finger millet enterprises generate higher household incomes, support nutritional security, and promote local employment through small-scale processing (Patel *et al.*, 2025). Self-Help Groups (SHGs), Farmer Producer Organizations (FPOs), and community cooperatives have enabled women to pool resources, access microcredit, and share skills. Research on millet interventions in Odisha demonstrates that SHG involvement significantly increases women's participation in production decisions and provides stable platforms for enterprise development. Institutional procurement such as inclusion of millets in Mid-Day Meals, ICDS, and Public Distribution Systems offers stable demand. Women entrepreneurs supplying processed millet products to these schemes have reported better income security and reduced market risks (Pandey *et al.*, 2024).

## Millet-Based Micro-Enterprises Among Tribal Women in Odisha

In Odisha, tribal women are increasingly transforming traditional millet processing into structured micro-enterprises, supported by training, policy frameworks, and value-chain interventions. A recent empirical study on millet-based entrepreneurship in Odisha documented that tribal women who constitute a majority of millet growers in their communities possess strong traditional knowledge but face structural challenges in converting agricultural engagement into successful business ventures due to limited access to markets, finance, and institutional support (Pandey *et al.*, 2024). The research further notes that policy instruments such as the Odisha Millet Mission have opened entrepreneurial possibilities across the millet value chain by providing targeted assistance to women Self-Help Groups (SHGs) and community enterprises, including opportunities for processing, value addition, and market linkages. However, implementation gaps and socio-economic barriers continue to restrict many women from fully benefiting from these programs (Pandey *et al.*, 2024). Strengthening support systems, encompassing skills training in product development, packaging, and marketing, as well as improved access to credit and institutional buyers is essential to help tribal women turn millet processing from a kitchen activity into viable and sustainable enterprises.

## Challenges in Enterprise Development

Despite visible progress, tribal women entrepreneurs face systemic constraints:

- **Limited access to credit:** Lack of collateral and limited financial literacy restrict investment in processing machinery and packaging (Pandey *et al.*, 2024).
- **Weak market linkages:** Inadequate market information and branding skills hinder access to premium markets.
- **Infrastructure gaps:** Poor storage, transportation, and processing facilities increase post-harvest losses (Ritu & Mj, 2025).
- **Uneven policy implementation:** Although policies promote millet cultivation and processing, many grassroots groups still struggle to access support schemes effectively.

## Enablers for Sustainable Growth

Evidence from multiple studies highlights several enablers that strengthen the millet enterprises of Tribal women:

1. **Capacity building:** Training in processing, food safety, entrepreneurship, and digital marketing enhances confidence and business efficiency (Kandpal *et al.*, 2025).
2. **Value chain integration:** Strengthening links between producers, processors, and markets especially through FPOs helps women secure fair prices (Ritu & Mj, 2025).
3. **Technology adoption:** Small scale dehuskers, pulverisers, and solar dryers reduce drudgery and improve product quality (Patel *et al.*, 2025).
4. **Supportive policies:** Nutrition missions, millet promotion schemes, and women focused rural entrepreneurship programs can multiply livelihood outcomes when implemented effectively.

## Conclusion

Millets present a viable pathway for achieving climate resilient agriculture, improved nutrition, and sustainable livelihoods in tribal regions. The evidence discussed highlights that tribal women with their rich indigenous knowledge and growing engagement in value addition and enterprise development are central to realizing this potential. In Odisha, supportive initiatives such as the Odisha Millet Mission, SHG-led interventions, and value-chain strengthening efforts have enabled women to move beyond subsistence processing toward micro-enterprises. However, persistent challenges related to finance, infrastructure, and market access must be addressed. Strengthening capacity building, institutional linkages, and policy implementation can further empower tribal women, ensuring that millet-based enterprises contribute meaningfully to inclusive rural development and women's economic empowerment.

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