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Transforming agriculture through the Odisha millet mission: A review of policy, practice and outcomes

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Abstract

The Global attention is rapidly being shifted to the revival of millets as a reaction to the interconnected challenges of climate change, nutritional insecurity, biodiversity loss, and the sustainability of conventional cereal-based agricultural systems. In this regard, the Odisha Millet Mission (OMM) recently termed as “Shree Anna Abhiyan” has emerged as India’s prominent state-led initiative, launched by the Government of Odisha in 2017, in order to foster climate-resilient, nutrition-sensitive, and inclusive agricultural development. The current literature integrates and reviews various existing literature on evolution, architecture, implementation and outcomes of Odisha Millet Mission along with examining the mission’s approach towards production support, procurement, processing, value addition, market development and inclusion of millets into public food and nutrition programmes. The mission has contributed in a number of ways, as the existing evidence indicates, for example, the revival of millet cultivation through expansion of cultivated area, improvements in productivity, strengthened institutional procurement, enhanced market linkages, and greater participation of Women’s Self-Help Groups. Moreover, the integration of millets into the Public Distribution System, Mid-Day Meal, and Integrated Child Development Services has allowed it to be known as a novel model bridging agricultural development with food and nutrition security. Having said that, this paper also describes some challenges faced in relation to procurement infrastructure, processing capacity, market expansion, and the limited availability of rigorous evidence on long-term impacts on household income, nutritional outcomes, and institutional performance. It concludes with the remark that Odisha Millet Mission might offer a holistic model encompassing different aspects of agriculture in regions having similar socio-economic and environmental challenges

Keywords: Odisha millet mission, millets, climate-resilient agriculture, nutrition-sensitive agriculture, value chain, food security, rural livelihoods, sustainable agriculture

Introduction

In the history of agriculture, the Green Revolution was a crucial landmark that resulted in increased food production through the widespread adoption of high-yielding varieties (HYVs) of staple crops, mainly rice and wheat, together with expanded irrigation, synthetic fertilizers and pesticides. Together, these technologies collectively ensured higher agricultural productivity and helped fight hunger in developing countries (Pingali, 2012; Evenson & Gollin, 2003; and Gollin, Hansen and Wingender, 2021) [7, 11, 22]. The Green Revolution was also important in advancing the idea of maximum crop yields, beneficial to the nutritional and ecological trade-offs. The policy focused on a limited number of staple crops, contributing to the gradual neglect of traditional nutrient-rich crops and reducing agricultural biodiversity and dietary diversity (Bouis & Saltzman, 2017; Bouis *et al.*, 2019; Pingali, 2012; Müller & Krawinkel, 2005) [3, 4, 15, 22]. According to Fanzo *et al.* (2018) [8], hunger still exists in the form of iron, vitamin A, and iodine deficiencies worldwide, despite advances in global food production, highlighting the gap between food quantity and nutritional quality. This gap needs to be bridged by adopting different strategies that prioritize nutrition, caloric sufficiency, dietary diversity and environmental sustainability (United Nations, 2015; Yilmaz & Yilmaz, 2025) [26, 27].

Introducing millets in the modern context has almost fulfilled all demands since millets possess inherent resilience to drought, rainfall and other climatic issues, enabling them to perform well under dryland, rainfed and marginal production environments where major cereals often fail (Bandyopadhyay *et al.*, 2017; Kole *et al.*, 2015) [1, 13]. This makes them highly adaptable in hilly regions also, where tribal and other communities consume it as staple food. (Behera, 2017; Passi & Jain, 2014) [2, 21]. In addition, millets are rich in micronutrients and fibre that help suppress persistent hunger. Therefore, this body of literature suggests that millets are not only an alternative but also a climate-adaptive approach for overall growth of a person (Bandyopadhyay *et al.*, 2017; FAO, 2018; FAO, 2023) [1, 9, 10]. The United Nations General Assembly also declared 2023 the International Year of Millets, following India’s proposal, highlighting the importance of spreading awareness. The following years of Green Revolution witnessed significant decline in the production and consumption of millets. According to Nelson *et al.*, (2019) [16], emergence of national agricultural strategy during 1960s, highlighted high yielding varieties of rice and wheat in order to focus on food self-sufficiency, which led to the exclusion of indigenous coarse cereals from production systems, public procurement and consumer food baskets. However, millets have regained

their position by showing their ability to withstand adverse conditions and provide adequate nutrients. (Bandyopadhyay *et al.*, 2017; Kole *et al.*, 2015; Passi & Jain, 2014) ^[1, 13, 21]. India has been leading as the world's largest producer of millets, accounting for more than 80% of Asia's production and approximately 41% of the global millet market, while the declaration of 2023 as the International Year of Millets has advanced national efforts to mainstream millet production and consumption through coordinated policy interventions (Rao & Basavaraj, 2015; Pradhan & Wali, 2022; FAO, 2023) ^[10, 23, 24]. Henceforth, millets not only qualify as traditional food but also as a strategy for sustainability.

In addition to this, the Odisha Millet Mission (OMM) recently renamed as "Shree Anna Abhiyan", launched by the Government of Odisha in 2017, stands as a powerful initiative for the revival of millets. It aims towards improved production practices, procurement, processing, value addition, institutional marketing and consumer awareness, surpassing the conventional goals. It was initially implemented in selected tribal blocks, and participation is now increasing steadily. Along with expanding the ideas of agronomic practices such as the System of Millet Intensification (SMI), line transplanting and line sowing, the mission attempts to combine millets into public food and nutrition programmes, including the Public Distribution

System (PDS), Mid-Day Meal (MDM) and Integrated Child Development Services (ICDS) (Directorate of Agriculture & Food Production, Government of Odisha, 2019) ^[6]. The mission seeks to connect different institutions like government departments, research institutions, civil society organisations, farmer collectives and women's Self-Help Groups (SHGs) in procurement, processing, value addition and marketing which makes it distinguishable. Therefore, it integrates three important aspects of India, namely, agricultural development, rural livelihoods and women's economic empowerment (Development Monitoring and Evaluation Office, 2020) ^[5].

Despite its popularity among policymakers, government reports, and academic studies, previous studies lack an unbiased assessment of the Odisha Millet Mission programme. The studies have covered important aspects of the programme like procurement systems, public distribution, nutritional interventions, women's participation but they have also neglected in the overall analysis of how this programme combine climate resilient agriculture and value-chain development. Adding to that, there is a growing need of evaluation of the state-led millet initiatives in order to safeguard future policies and replication. In line with that, this paper tries to present comprehensive details of OMM, including the achievements and challenges faced by it.

Table 1: Evolution of the Odisha Millet Mission (OMM)

Year	Policy milestone	Key developments	Significance
2017	Launch of Odisha Millet Mission	OMM launched by the Government of Odisha with an initial focus on reviving millet cultivation in tribal and rainfed regions. The programme commenced in 30 blocks across 7 districts.	Marked a shift from conventional crop-centric policies towards an integrated strategy linking climate resilience, nutrition and farmer livelihoods.
2018	First phase of expansion	Strong farmer participation and positive programme response led to expansion to 55 blocks covering 11 districts.	Demonstrated the scalability of the pilot intervention and growing institutional commitment.
2019	Strengthening implementation	The mission expanded further to 72 blocks across 14 districts, accompanied by strengthened procurement systems and wider programme implementation.	Signalled the transition from a pilot programme to a state-wide development initiative.
2021	Further geographical expansion	The mission incorporated four additional blocks, extending programme coverage across the state.	Reflected continued policy commitment and consolidation of programme implementation.
2023 onwards	National and global recognition	Following the International Year of Millets (2023), Odisha's experience gained wider recognition as an important state-level model for millet promotion and value-chain development.	Positioned OMM as an influential policy model for nutrition-sensitive, climate-resilient agriculture.

Source: Compiled and synthesised by the author from Mohanty (2020) ^[14], NITI Aayog (2023) ^[17], FAO (2023) ^[10] and related literature.

Policy origins and evolution of Odisha millet mission

Millet cultivation has been historically significant in farming and food culture across tribal population. However, millet farming had begun to decline before the launch of the Odisha Millet Mission. In accordance with experience of Green Revolution, the agricultural policies of the state got inclined towards irrigated rice-based production systems and the subject of traditional cereals was ignored quite evidently in domains like research, procurement, extension services and market support. As a result, there was a reduction in the area under millet cultivation, the availability of traditional seed varieties and household consumption of millets especially among younger generations and urban consumers. However, the irony is that this decline appeared in a state where a large portion of the tribals and rural people continue to depend on millet and this shows the gradual weakening of agricultural system that used to be adaptive to fragile agro-ecological

conditions and local food cultures. Therefore, these factors, namely climate vulnerability, nutritional insecurity, declining agrobiodiversity and rural livelihoods, collectively form the basis of the context for creating policies and the formulation of the Odisha Millet Mission in 2017 (Pradhan & Wali, 2022) ^[23]. During the initial years of the initiative Govt. of Odisha approved 2808 cr rupees projected towards the sustained development of the programme across regions (ThePrint, 2022) ^[25].

Institutional Architecture and Programme Design of the Odisha Millet Mission

The mission was thought to be unconventional and different from traditional agricultural programmes. Instead of focusing solely on crop production, the mission gives importance to the entire agricultural value chain influencing the revival of millets. Hence, it incorporates topics such as support for seed

systems, improved agronomic practices, extension services, procurement mechanisms, processing infrastructure, market development, and consumer awareness in designing the programme for millet production and consumption.

One of the crucial features of the mission is in its distribution of governance structure including several stakeholders across different levels, which may include the Department of Agriculture and Farmers' Empowerment, research institutions, civil society organisations, non-governmental organisations, farmer collectives and local administrative agencies. At the grassroots level, extension personnel, village-level functionaries and community organisations facilitate farmer mobilisation, technology dissemination and programme implementation, which enable coordination from the state level to individual farming communities. Because of this particular governance structure, OMM stands separate from the traditional top-down agricultural programmes, encouraging local participation and context-specific implementation strategies.

Under this mission, the production of millet is accompanied by interventions that strengthen post-harvest management and market linkages. Farmers are motivated to consider improved cultivation practices, including the System of Millet Intensification (SMI), line transplanting and line sowing, as well as community-managed seed systems designed to improve productivity while conserving traditional millet cultivation. Apart from production, institutional procurement, decentralised processing facilities and value-addition activities seek to improve market access and generate greater economic returns for producers. Moreover, the interventions are further strengthened by including millets in public food distribution and nutrition programmes, fulfilling the nutritional needs of the people (Directorate of Agriculture & Food Production, Government of Odisha, 2019) ^[6].

As mentioned earlier, women's participation in the millet value chain is a distinctive feature of the mission. Women's Self-Help Groups (SHGs), operating under the Mission Shakti initiative, play a key role in processing, value addition, preparation of millet-based food products and marketing activities. In order to go beyond agriculture, the mission aims to promote entrepreneurship, employment generation and rural women's economic empowerment through Millet Shakti Cafes and the preparation of value-added products supplied to nutrition programmes (Orissa diary, 2022). Undoubtedly, the Odisha Millet Mission represents a holistic model involving agricultural production, nutrition, market development and social inclusion.

The Odisha Millet Mission Value Chain: From Farm to Plate

This mission understands that every phase of the supply chain, from input provision to final consumption, needs to be strengthened for the successful revival of millets. Therefore, it focuses on both producer incentives and consumer demand. The design has the potential to include institutional support throughout the post-harvest and marketing stages and to reduce market uncertainty. The value chain begins with production-oriented interventions, supported by extension services that facilitate technology dissemination and capacity building among farming households.

Except for production, the mission states mechanisms for institutional procurement, which provide relative stability in market access for millet growers. Procurement centres are established as an important link between producers and public institutions, reducing marketing uncertainty. The procured grain enters two complementary paths. The first one is the distribution through public nutrition and food security programmes, including the Public Distribution System (PDS), Integrated Child Development Services (ICDS) and Mid-Day Meal (MDM) schemes, thereby improving the accessibility of nutritious millet-based foods among vulnerable population groups. The second pathway promotes decentralised processing and value addition through women's Self-Help Groups (SHGs), which produce a range of millet-based products including ready-to-eat and processed food items, generating additional employment and entrepreneurial opportunities within rural communities (Pachauri, 2021, Outlook planet, 2023) ^[19, 20].

Another factor that distinguishes the Odisha Millet Mission from the traditional one is its integration of production, procurement, processing, and nutrition into a single domain. The mission simultaneously focuses on different aspects like the connection between farmers and institutional markets, expansion of consumer demand through public nutrition programmes and distributed enterprises. Here, the value chain functions as the institutional foundation for further growth.

Agricultural Outcomes: Millet Revival, Area Expansion and Productivity

As stated in the existing literature, the mission has successfully fulfilled its primary objective of area expansion under millet cultivation, advancements in crop productivity and progress in agronomic practices. The implementation of the programme has expanded geographically from a limited number of pilot blocks in 2017 to several districts. Along with that, the programme has also witnessed increasing farmer participation, suggesting growing acceptance of millet cultivation among farming communities. In order to highlight the economic side of millet cultivation, the mission has tried to integrate production technologies with institutional procurement and market support.

Different interventions have been practised to maintain the ecological advantages associated with millet cultivation, such as the System of Millet Intensification (SMI), line transplanting and line sowing, community-managed seed systems, and extension services. According to the Development Monitoring and Evaluation Office (DMEO), the area under millet cultivation increased from 2,949 hectares to 5,182 hectares, while productivity improved by approximately 120% during the early phase of programme implementation. Although these numbers indicate better performance, previous studies state that sustained progress requires continuous extension support, seed availability, and farmer participation.

The significance of the Odisha Millet Mission lies in its successful reorientation of attention toward traditional crops, the conservation of agrobiodiversity, and the strengthening of the adaptive capacity of farming systems. It has contributed to the broader aims of crop diversification, climate resilience, and the long-term sustainability of rainfed agriculture.

Table 2: Evidence on Agricultural Outcomes of the Odisha Millet Mission

Outcome Dimension	Evidence from Literature	Overall Assessment
Area under millet cultivation	Expansion from pilot implementation with reported increase from 2,949 ha to 5,182 ha during the initial phase	Strong evidence of programme expansion
Productivity	Approximately 120% increase in yield reported during the early implementation phase	Positive short-term evidence, but long-term evaluations remain limited
Adoption of improved practices	Introduction of SMI, line sowing, line transplanting and community seed systems	Institutional support strengthened production systems
Farmer participation	Progressive expansion across blocks and districts indicates increasing participation	Reflects growing acceptance and policy commitment
Climate resilience	Revival of traditional drought-resilient crops suitable for rainfed agriculture	Strengthens adaptive agricultural systems

Source: Synthesised by the author from the reviewed literature.

Economic Outcomes: Procurement, Market Development and Farmer Livelihoods

The Odisha Millet Mission has addressed the problems faced by millet growers by developing institutional marketing mechanisms. Earlier, despite adequate ecological stability, millet cultivation was characterised by weak market linkages, limited procurement infrastructure, low price realisation, and inadequate value addition. The Odisha Millet Mission has recognised the importance of market access and demand creation by ensuring inclusive farming strategies.

Institutional procurement has emerged as a central pillar of this strategy. By establishing procurement centres and linking millet producers with public procurement systems, the mission has reduced market uncertainties. The increased number of participating farmers and the increase in the quantity of millet procured suggest that the needs have been met. Therefore, the expansion of procurement has served as an institutional mechanism.

Other than this, studies have highlighted the importance of decentralised processing and value addition in improving rural livelihoods. Women's Self-Help Groups (SHGs), particularly under the Mission Shakti framework, are crucial in processing, packaging and marketing millet-based products. This has given rise to local entrepreneurship by generating employment and providing platforms such as Millet Shakti Cafes (Orissa diary, 2023) ^[18]. Moreover, it has given the chance of experiencing diverse rural income sources and strong local value chains. It has ended the limitation of farmers' participation in being seller of raw grain only. Clearly, the mission believes in the all-inclusive idea and executes it by including women's groups, local enterprises and rural communities.

As we understood the benefits, there are also certain limitations that need to be addressed. Existing literature argues that there are transportation constraints arising from the limited availability of procurement centres and inadequate decentralised procurement and processing infrastructure in some regions. It also lacks evidence on long-

term impacts on farm income, profitability, or household economic welfare. Hence, this limitation provides an important topic for further research on sustained livelihood impacts.

Nutritional Outcomes and Food System Transformation

The Odisha Millet Mission programme extends beyond production of millets to public food distribution and nutrition schemes. It connects food systems like farming, markets, public institutions and consumers. The inclusion of millets within the Public Distribution System (PDS), Integrated Child Development Services (ICDS) and Mid-Day Meal (MDM) scheme has been identified as an innovative idea of policy transformation. These institutions are responsible for creating a demand in the market for millet production and for reducing the gap of accessibility of nutrient-rich foods among school children, pregnant and lactating women and economically weak households. Thus, the Odisha Millet Mission addresses both the supply and demand side of the food system, as compared to the traditional agriculture programme focusing only on market support.

The mission has undoubtedly reshaped the perception of consumers who once attributed millet to the poor people's food in many regions. People were giving more preference to rice and wheat as compared to millet. According to previous studies, several initiatives such as awareness campaigns, promotion of millet-based recipes, community demonstrations and the establishment of Millet Shakti Cafés have changed people's perspective on millet, which shows that a complete food system needs consumer behaviour, food culture and dietary preferences along with improvements in agricultural production (Orissa diary, 2023) ^[18].

This brings us to the need to conduct research on rigorous assessments of dietary intake, micronutrient adequacy and long-term nutrition outcomes at the household level in order to strongly assess the mission's contribution.

Table 3: Evidence on Nutritional Outcomes of the Odisha Millet Mission

Nutritional dimension	Evidence from the literature	Overall synthesis
Integration with public food programmes	Millets incorporated into PDS, ICDS and Mid-Day Meal schemes	Strengthened institutional demand while improving access to nutritious foods.
Dietary diversification	Promotion of millet consumption through public nutrition programmes and awareness initiatives	Supports diversification beyond rice- and wheat-based diets.
Consumer awareness	Awareness campaigns, millet festivals, recipe promotion and Millet Shakti Cafés	Improved public recognition and acceptance of millets.
Food systems integration	Production, procurement, processing and nutrition programmes linked within one policy framework	Demonstrates a comprehensive food systems approach rather than a crop-specific intervention.

Source: Synthesised by the author from the reviewed literature.

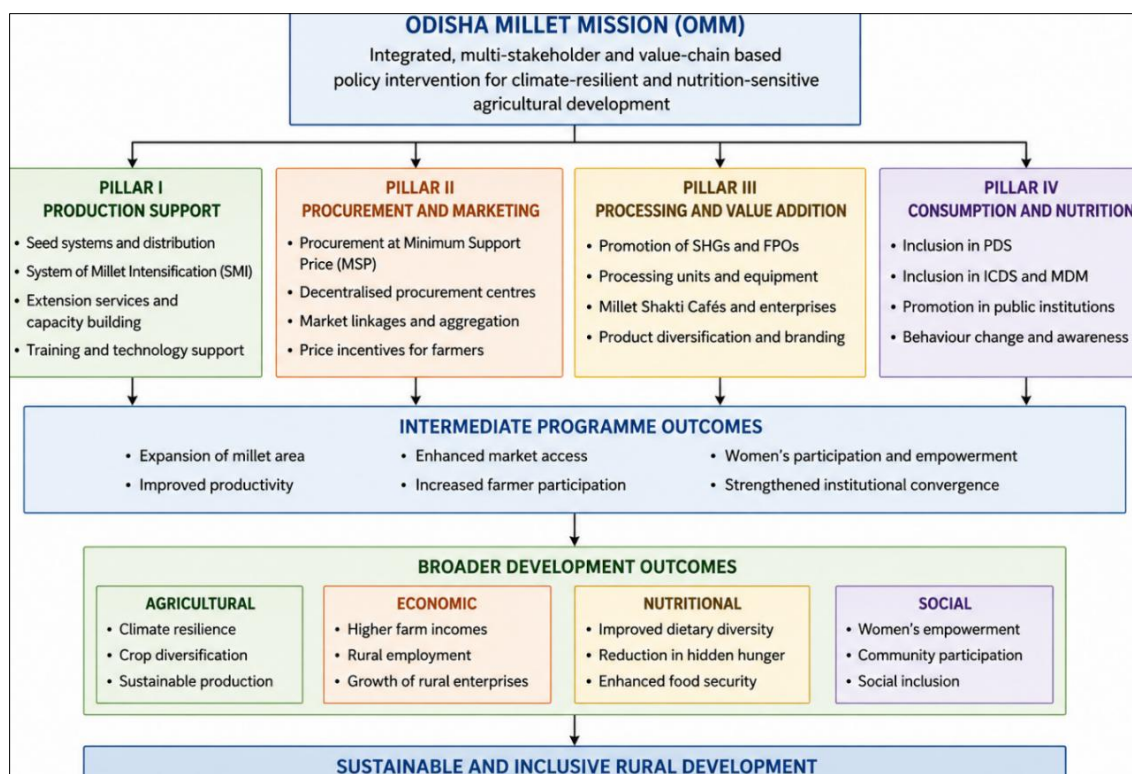
Social and Institutional Outcomes: Women's Empowerment, Community Participation and Governance

The Odisha Millet Mission has helped in generating a participatory governance model that takes into account different social institutions like community organisations, civil society institutions and women's collectives from the start to the end of the programme implementation. The mission believes in collaborating with multiple stakeholders such as government departments, research institutions, non-governmental organisations (NGOs), farmer groups and Women's Self-Help Groups (SHGs). Previous studies have acknowledged that this method of decentralization is one of the defining strengths of the Odisha Millet Mission programme.

The mission has ensured participation of women through the integration of Mission Shakti SHGs, which has helped them go beyond agricultural production to include millet processing, value addition, entrepreneurship, food preparation and marketing. For women, being economically independent at the local level has become possible because of the initiatives like Millet Shakti Cafes and community-based processing enterprises (Orissa diary, 2023)^[18]. They have not merely stayed as an unpaid household labour anymore, extending the mission's broader goal to women economic empowerment.

Previous studies have also foregrounded that community participation has played a crucial role in the implementation of the mission. Activities such as farmer mobilisation,

training programmes, community-managed seed systems and decentralised extension activities have motivated collective involvement and helped in spreading improved farming practices. These participatory methods have strengthened local institutions and increased farmers' confidence in adopting improved cultivation methods. The involvement of civil society organisations and local institutions has also helped in reaching tribal and remote regions, where traditional extension systems have faced numerous hurdles in implementation. These arrangements establish that the success of the mission depends not only on technological innovations but also on efficacious local governance mechanisms that can support the programme in the long run. Despite these advancements, the literature points to several institutional challenges that continue to affect implementation of the Odisha Millet Mission. Differences in districts' capacity to implement the programme, gaps in processing and procurement infrastructure, and variations in the effectiveness of local agencies may shape outcomes in different ways. Although participatory governance is central to the Odisha Millet Mission, relatively little empirical research has examined administrative performance, the quality of local governance, and the long-term sustainability of community participation. There is therefore a need for further research to understand how these institutional and structural factors influence the effectiveness of the programme across different socio-economic and agro-ecological contexts.



Source: Author's conceptualisation based on the reviewed literature

Fig 1: Conceptual Framework of the Odisha Millet Mission

4. Challenges, Evidence Gaps and Future Research Directions

4.1 Implementation and Operational Challenges

There are challenges in the implementation of the Odisha

Millet Mission as mentioned by existing literature in spite of the major progress made. When it will expand over longer periods of time, the problems will make more sense so as to sustain its benefits. The mission has contributed significantly

in increasing the cultivation of millet and improving institutional procurement while problems still exist at different points in the value chain. Farmers and other stakeholders may face difficulties related to procurement facilities, processing, transportation, access to markets, and the demand for millet products. The above-mentioned challenges suggest that it is not sufficient enough to just expand the mission. It also needs stronger institutions and support systems to remain effective in the long run (Jena, 2021; Mohanty, 2020) ^[12, 14]

The major challenge listed by previous studies is the unequal availability of procurement and processing facilities at the ground level. Expansion of procurement system has yet not ensured the establishment of procurement centres across all districts. This, increases the transportation costs and makes it difficult for farmers living in remote villages and tribal areas to access markets. The existence of a smaller number of processing facilities limits opportunities of adding value to millet and makes it difficult to develop the value chain. Such infrastructure gaps can also discourage farmers from continuing millet cultivation, particularly when they have to bear high costs to transport and market their produce (Jena, 2021) ^[12].

According to previous studies, there is difficulty in creating sustained consumer demand for millets. Instead of increased awareness of nutritional and environmental benefits, rice and wheat continue to be the main staple foods in many households. Hence, increasing millet production may not be the only solution to sustain millet sector in the long run. Greater consumer awareness, development in different millet-based products, and improved market opportunities have to be created. Demand from public institutions and private markets, along with gradual changes in people's food choices, will be crucial in determining the future growth of the programme (Mohanty, 2020) ^[14].

The other challenge in the implementation of the programme is, institutional coordination which is to bring together different institutions and stakeholders, including government departments, research organisations, NGOs, farmer groups, and women's SHGs. Even though their contribution has helped the programme to extend to different communities, the real task lies in the coordination between these groups. The success of the programme depends upon the expansion of the programme into more areas, maintaining coordination among stakeholders, ensuring that activities are implemented properly, and monitoring progress at the district level etc.

The way forward

Existing gaps suggest that research needs to extend beyond mere description of Odisha Millet Mission and examine its effectiveness over time. In order to understand whether participation in the programme has made a difference to agricultural productivity, farm income, household resilience, and nutritional outcomes, more quasi-experimental and longitudinal studies are needed. Data from different districts, agro-ecological zones, and socio-economic groups will provide a clearer picture of how local institutional conditions and environmental factors affect the outcomes of the programme. It will also help in programme performance across regions and groups of beneficiaries. There is scope of future research where the areas that have received less attention can be examined, which may include climate

adaptation, biodiversity conservation, carbon-efficient food systems, the participation of women in millet value chains, and consumer behaviour in urban markets. It has become important to study millet production alongside nutrition, environmental concerns, and rural development since the global attention to sustainable food systems grows further. Research that brings these areas together can help provide a better understanding of the wider effects of the mission (Pachauri, 2021) ^[20]. It will influence future policy decisions in Odisha by providing instructions for regions where farmers depend on rainfed agriculture and face similar problems related to climate change and nutritional insecurity.

Conclusion

The Odisha Millet Mission has been an important initiative by the state that looks to promote millets in the context of sustainable agriculture, nutritional security, and climate resilience. As indicated by existing studies, the aim of the mission goes beyond promoting millet cultivation and includes institutional procurement, decentralised processing, value addition, public food distribution, and community participation. In this regard, it distinguishes itself from agricultural programmes focusing primarily on increasing production. Different stages of the millet value chain bring together agricultural, nutritional, institutional, and livelihood concerns along with it. The mission provides an example of how traditional and climate-resilient crops can be revived with the help of government policies in order to address the wider needs of rural communities.

Evidence shows that the Odisha Millet Mission plays a key role in reviving millet cultivation by increasing the cultivated area, encouraging greater farmer participation, and improving productivity along with helping in strengthening of institutional procurement systems. The programme extends beyond agricultural production as indicated by the factors; development of decentralised processing facilities, the involvement of women's Self-Help groups, and the inclusion of millets in public nutrition programmes. These factors have associated millet cultivation with climate-resilient agriculture, food and nutrition programmes, women's economic participation, and rural development. Therefore, this programme has a broader implication as compared to the traditional agricultural support programme. Adding to that, earlier studies have also mentioned several limitations in the implementation and research about the Odisha Millet Mission. Decentralised procurement infrastructure, processing capacity, market development, and consumer demand have been found to affect the mission in different regions. Even though studies have provided solutions for programme implementation and institutional development, there are limitations regarding long-term effects on household income, nutritional outcomes, resilience, and institutional performance. Hence, more research is needed on these areas in order to develop a clearer understanding of the mission in future.

The mission offers important insights into the policies in different regions that face problems such as climate variability, nutritional insecurity, and dependence on rainfed farming. It suggests that in order to improve farming practices, the traditional crops are needed to be brought back into wider cultivation. The mission also involves strengthening institutions, developing better markets,

supporting value addition, encouraging community participation, and creating steady demand among consumers. The Odisha Millet Mission is a vivid example of how government support can strengthen local food systems. In order to understand whether similar approaches can work in different regions and to sustain its progress, its evaluation should be continued and its results should be used in future policy decisions.

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Author's contribution

The author is solely responsible for the conceptualization, literature review, interpretation, and writing of the manuscript. The author critically reviewed the manuscript and approved the final version for submission.

References

1. Bandyopadhyay T, Muthamilarasan M, Prasad M. Millets for next generation climate-smart agriculture. *Frontiers in Plant Science*. 2017;8:1266. doi:10.3389/fpls.2017.01266
2. Behera M. Assessment of the state of millets farming in India. *MOJ Ecology & Environmental Science*. 2017;2(1):00013. doi:10.15406/mojes.2017.02.00013
3. Bouis HE, Saltzman A. Improving nutrition through biofortification: a review of evidence from HarvestPlus, 2003 through 2016. *Global Food Security*. 2017;12:49-58. doi:10.1016/j.gfs.2017.01.009
4. Bouis HE, Saltzman A, Birol E. Improving nutrition through biofortification. In: Fan S, Yosef S, editors. *Agriculture for improved nutrition: seizing the momentum*. CAB International in association with the International Food Policy Research Institute; 2019. p.47-57. doi:10.1079/9781786399311.0047
5. Development Monitoring and Evaluation Office. *Best practices: women and child development sector*. NITI Aayog; 2020.
6. Directorate of Agriculture & Food Production, Government of Odisha. *Odisha Millets Mission: taking millets to millions*. National Workshop Booklet. 2019.
7. Evenson RE, Gollin D. Assessing the impact of the Green Revolution, 1960 to 2000. *Science*. 2003;300(5620):758-762.
8. Fanzo J, Davis C, McLaren R, Choufani J. The effect of climate change across food systems: implications for nutrition outcomes. *Global Food Security*. 2018;18:12-19. doi:10.1016/j.gfs.2018.06.001
9. Food and Agriculture Organization of the United Nations. *The future of food and agriculture: alternative pathways to 2050*. FAO; 2018.
10. Food and Agriculture Organization of the United Nations. *International Year of Millets 2023*. FAO; 2023.
11. Gollin D, Hansen CW, Wingender AM. Two blades of grass: the impact of the Green Revolution. *Journal of Political Economy*. 2021;129:2344-2384. doi:10.1086/714444
12. Jena D, Mishra S. Procurement and public distribution of millets in Odisha: lessons and challenges. Policy Brief PB1RRAN0121. Revitalising Rainfed Agriculture Network; 2021.
13. Kole C, Muthamilarasan M, Henry R, Edwards D, Sharma R, Abberton M, *et al.* Application of genomics-assisted breeding for generation of climate resilient crops: progress and prospects. *Frontiers in Plant Science*. 2015;6:563. doi:10.3389/fpls.2015.00563
14. Mohanty B. *Odisha Millet Mission: the successes and the challenges*. Vikalp Sangam; 2020.
15. Müller O, Krawinkel M. Malnutrition and health in developing countries. *Canadian Medical Association Journal*. 2005;173(3):279-286. doi:10.1503/cmaj.050342
16. Nelson ARLE, Ravichandran K, Antony U. The impact of the Green Revolution on indigenous crops of India. *Journal of Ethnic Foods*. 2019;6(1):8. doi:10.1186/s42779-019-0011-9
17. NITI Aayog. *Promoting millets in diets: best practices across States/UTs of India*. 2023.
18. Orissa Diary. *Millet Shakti Cafes: through millets OMM empowers women*. 2023 Jun 29.
19. Outlook Planet. *Odisha Millets Mission: reviving millets in farms and plates*. 2023 May 2.
20. Pachauri S. *How millet production can empower women farmers, strengthen agriculture*. Down To Earth. 2021.
21. Passi SJ, Jain A. *Millets: the nutrient-rich counterparts of wheat and rice*. Press Information Bureau, Government of India; 2014.
22. Pingali PL. *Green Revolution: impacts, limits, and the path ahead*. *Proceedings of the National Academy of Sciences*. 2012;109(31):12302-12308. doi:10.1073/pnas.0912953109
23. Pradhan PP, Wali VS. *Odisha Millet Mission: an incredible journey of millet promotion in Odisha*. *Agriculture World*. 2022;8(11).
24. Rao PP, Basavaraj G. Status and prospects of millet utilization in India and the global scenario. In: *Millets: promotion for food, feed, fodder, nutritional and environment security*. *Proceedings of the Global Consultation on Millets Promotion for Health & Nutritional Security*. ICAR-Indian Institute of Millets Research; 2015. p.197-209.
25. ThePrint. *Odisha Cabinet approves ₹2,808 crore for millet mission*. 2022 Aug 13.
26. United Nations. *Transforming our world: the 2030 Agenda for Sustainable Development*. United Nations; 2015.
27. Yilmaz H, Yilmaz A. Hidden hunger in the age of abundance: the nutritional pitfalls of modern staple crops. *Food Science & Nutrition*. 2025;13:e4610. doi:10.1002/fsn3.4610