



Odisha Millet Mission, the Significance of Indigenous Knowledge and Cultural Practices

Ushoshi Bandyopadhyay¹  and Dr. Archana Patnaik² 

¹ Ph.D. Scholar, Indian Institute of Technology, Kharagpur, India

² Assistant Professor, Indian Institute of Technology, Kharagpur, India
ushoshi15@kgpian.iitkgp.ac.in

Abstract. The Food and Agricultural Organization (FAO) 2013 estimated that more than two billion people worldwide suffer from micronutrient deficiency, also known as ‘hidden hunger’, as only three crops -rice, wheat, and maize dominate the global food system. Also, the advent of a corporate food regime exposed our agri-food system to food insecurity, unsustainable food production, and climate change impacts. The situation is more susceptible in developing nations like India, as a substantial population still depends on agriculture and suffers from hidden hunger due to a monotonous cereal-based diet. Hence, recently there has been an enormous push by the Indian government and Non-Governmental Organizations (NGOs) to make a sustainable transition in our food system by focusing on the production and consumption of underutilized and traditional food like millets with the help of the Indigenous Knowledge System. This resulted in declaring 2023 the International Year of Millets and enacting policies in some states like the Odisha Millet Mission (OMM). In 2017, the Odisha government started the all-encompassing OMM program among the indigenous communities, who are the primary knowledge holders and have their cultural tradition for producing, preparing, and consuming different varieties of millets as part of their local food culture. Community-based organizations like NIRMAN are carrying out the implementation of the mission in specific districts of Odisha to revive millet production and consumption. Thus, with the help of secondary sources and content analysis, the primary aim of this study is to understand the significance of Indigenous knowledge and cultural practices of Odisha’s Indigenous communities concerning the production and consumption of millets under the policy of the Odisha Millet Mission.

Keywords: Indigenous knowledge system, Odisha Millet Mission, Indigenous communities, Green Revolution

1 Introduction

Today, India is a food-surplus nation, yet it is still lagging behind in fulfilling sustainable development goals like SDG 2 – eliminating malnutrition and hunger of all forms (Gulati & Juneja, 2022). According to the FAO report (2020), about 14 percent of India’s population is still undernourished or suffers from hidden hunger due to a

monotonous cereal-based diet comprising only rice and wheat (Sreekala et al, 2022). Even in 2019, over half of the global food production was accounted for by mainly four crops – rice, wheat, maize, and sugar cane (FAO, 2021). The over-dependency on rice and wheat started mainly with the advent of the Green Revolution policies in the 1960s, which made coarse cereals like millet disappear from the regular Indian diets (Nelson et al., 2019). On one hand, policies such as the Intensive Agricultural Development Program (IADP) launched in 1960 and the High-Yielding Varieties Programme (HYVP) enacted in 1966 were adopted to make the country food self-sufficient, especially in wheat and rice with modern agricultural techniques and amenities (Arora, 2013). On the other hand, small-scale farmers, artisans, and collectors of various forest products managed a large portion of India's land area using historically evolved methods and indigenous practices generated within the local communities, which have been under the threats of globalization and consequent homogenization of the knowledge system (Brod, 2001).

Contrary to the mentioned facts, in recent years, there has been a push from the Government and Non-Governmental Organisations (NGOs) to include millets in the mainstream policy and agricultural development in India (Patnaik et al., 2017). This resulted in declaring the year 2023 as the International Year of Millets (Banerjee, 2023; Sen et al., 2023), and at the state level, multiple policies and schemes are being enacted for millets revival. One such example is the Odisha Millets Mission, a flagship program started in 2017 among the indigenous communities of Odisha (Sen et al., 2023), who are the primary knowledge holders and have cultural traditions for producing and consuming different varieties of millets as part of their local food culture (Saxena, 2020). Following the approach of content analysis based on secondary resources, the primary aim of this study is to understand the significance of Indigenous knowledge and cultural practices of Odisha's Indigenous communities concerning the production and consumption of millets under the policy of the Odisha Millet Mission.

2 Understanding Indigenous Knowledge

Indigenous knowledge has become a central part of debates in several contexts. Indigenous knowledge is seen by some post-development writers as a potential alternative for advancement among the world's rural poor (Briggs, 2005). In the sustainable development debate, it has occupied a significant position as it allows people to coordinate and maintain cohesion with nature for generations (ibid). In simple terms, 'Indigenous knowledge (IK), also known as traditional knowledge or local knowledge refers to the information, abilities, and perspectives of a community that is used to sustain or advance its standard of living' (Rao, 2006 p. 224). However, indigenous knowledge is not only restricted to Indigenous people but to communities with their unique knowledge based on cultural and societal contexts and provides local decision-making strategies in agriculture, natural resource management, and other spheres (Rao, 2006). Also, it may not always be traditional knowledge as it also

incorporates recent innovations made at the local level (Brodt, 2001). According to Warren (1992), it is ingrained in social customs, institutions, relationships, and rituals and is difficult to codify. This study will mainly focus on the significance of indigenous knowledge in the agricultural contexts in general and at the policy level.

2.1 Indigenous Knowledge through Agricultural Lens

Indigenous People are the guardians of knowledge for a large portion of the world's food biodiversity because they have managed and preserved their own cultural traditions for gathering, preserving, preparing, and consuming their local foods (Kennedy et al., 2022). A few features of indigenous knowledge that make it more relevant for a sustainable food system are its lower emphasis on capital and utilizing locally available resources, adaptive strategies to be used during crisis periods like drought or flood, diversified production system, etc. (Behera, 2021). In order to attain food security and sustainable agricultural output across generations, farmers, primarily in poor nations, have planned agricultural production using their IK (Lwoga et al., 2010). For example, a study by Kumar (2014) revealed how the local farming communities in the North-Western part of India are utilizing their traditional and indigenous skills to mitigate the intense climate change effects. This north-western region is known for dryland agriculture with severe droughts and occasional flooding; therefore, the communities have traditional water conservation techniques like the protection of ponds, johad, nadi, etc. for agricultural purposes and replenishing the water table. Also, based on their indigenous knowledge, they grow less water-intensive crops like Khejri and Bare plants (Kumar, 2014). More than 200 traditional practices relating to agriculture, food production, and biodiversity preservation were documented by Singh et al. (2010), who evaluated the Adi, Monpa, and Khasi tribes of northeast India. In a recent study by Meena et al. (2019), the indigenous communities of Panji Valley in Himachal Pradesh who are following traditional agricultural practices like crop diversification and mixed cropping techniques to adapt to climate change, have been examined. However, it is not about being dependent upon the indigenous knowledge system, as the amalgamation of different subsets of the indigenous and modern knowledge systems is more prevalent nowadays. For instance, Brodt (2001) based his study on local plant cultivation techniques and management in the Raisen district of Madhya Pradesh to understand the knowledge system operating in Raisen. The mainstream notion is that global science practices are replacing indigenous sources of knowledge, but the study argues that such a complete loss of knowledge is not empirically true. For example, Brodt (2001) observed that the religious aspects of certain sacred trees in the villages are not lost due to technological modernization. However, there were a few elements of indigenous knowledge that got replaced by modern aspects, like the practice of intercropping techniques, or using cow dung and buttermilk as natural fertilizers replaced by government-subsidized fertilizers and chemicals (Brodt, 2001). Hence, it can be argued that the debate between modern (scientific) and indigenous knowledge has been blurred and emerged into a more 'entangled' version of the knowledge system, reflecting the realities of every day.

3 Methodology

This study uses reviewed secondary sources like journals, reports, and news articles by following a content analysis of the materials. Krippendorff (2004) defined content analysis as a method of research that enables consistent and trustworthy conclusions to be drawn from written materials (or other meaningful content) to their specific application environments. In other words, it is a research approach used to interpret the meaning of content (Gheyle & Jacobs, 2017). Therefore, the content of Odisha Millets Mission (OMM) has been examined thoroughly to understand the significance of indigenous culture and knowledge in the policy process.

4 Discussion

4.1 Millet as an Indigenous Food

Millets are known as one of the traditional food grains in India, with diverse varieties like sorghum, pearl millet, finger millet, foxtail millet, little millet, and many more whose evidence can be found in several historical sources (Kennedy et al., 2022). It is also a part of the staple diet and traditional agricultural practices among multiple indigenous and tribal communities in India, which has been captured well through empirical studies conducted over a time period. For example, Saxena (2020) studied one of the ancient practices of the indigenous community in the Kandhamal district of Odisha, i.e., the seed festival known as 'Burlang Yatra' (Indigenous Biodiversity Festival), where farmers from the Kutia Kondh community who traditionally grow and consumes millets participate in the festival. The study reported that every year, the festival takes place during the post-harvest season, where farmers from millet-growing villages come together to revive their connection with millet-based farming and their youths to preserve their indigenous knowledge and practices. Another study by Behera (2021) also reflected on the Kondh community of Kandhamal, where it was observed that these indigenous people consider Mother Earth to be an important agent in deciding crop survival growth and determining weather. He found that the shifting cultivation of sorghum, kodo millets, and finger millets was practiced by the tribals on a rotation basis in alternate years in the same piece of land to maintain soil fertility and production diversity through collective efforts. The southern part of India has been well-captured by scholars like Jayashree and Aram (2019), who have examined the indigenous practices of the 'Malayali' tribe of Koli Hills, Tamil Nadu, to protect millet cultivation. They observed that the tribe start their agricultural season with the ritual 'Oor Mugatham' where the community leader chooses the varieties of millets to be cultivated in the upcoming season. They also reported that the traditional seed-saving practices in clay pots are still followed by a few families and passed down over generations as a part of their custom. Cultural Anthropologist Finnis (2008) and scholars like Gruère et al. (2008) have also talked about the indigenous farming community in the Koli Hills of Tamil Nadu, who were devoted to consuming and producing minor millets, which declined with the advent of commercial farming.

In a recent study by historian Hazareesingh (2021), the tribal female farmers of Ramanagara district, Karnataka, and their local culture of food and farming practices associated with ragi or finger millets have been explored through oral history. For these women, ragi is associated with their culture and history, hence as a community, they express these meanings through songs, offerings, and rituals related to producing, preparing, eating, and sharing ragi. For example, he noted that singing is strongly associated with these women farmers when they prepare finger millet using the grinding stone. According to him, the stone's motion when it crushes the seed creates the rhythm for women to sing ragi-grinding songs. Therefore, it can be argued that traditional agriculture as part of the indigenous knowledge system equally comprises a community's collective awareness to reproduce their social and cultural practices surrounding the crops and a controlled effort to abstain the members from exploiting the environment.

4.2 Odisha Millets Mission and Indigenous Communities

In recent years, the Government of Odisha has recognized the nutritional benefits and resilience of millet in challenging climates. Consequently, they initiated a program called the "Special Programme for Promotion of Millets in Tribal Areas of Odisha," also known as Odisha Millets Mission (OMM), starting in 2017-18 (Sen et al., 2023). This program operates through four main components: production, processing, marketing, and consumption (Jena & Mishra, 2021). What makes this program unique is its collaborative institutional framework, where the government, civil society, and academia work together, complementing and supporting each other (Jena & Mishra, 2021) by specifically targeting the tribal regions. The government website on Odisha Millets Mission has mentioned that now the mission has been successfully extended to 177 blocks of 30 districts covering over 20 lakh farmers. The detailed objectives of the mission have been broken down into the following parts on the website of OMM:

- Promoting household-level consumption
- Conservation and promotion of millet landraces
- Setting up a decentralized processing unit
- Improving productivity of millet crops
- Promotion of millet value-addition enterprises
- Promotion of FPOs and market facilitation

The preservation of local landraces of millets as an objective under the mission is an especially important step through which the revival of millet cultivation and consumption among the indigenous and tribal communities can be well established.

4.3 Preservation of Indigenous Seeds through OMM

Throughout history and tradition in Odisha, millets have formed an integral component of Indigenous and/or local small-scale food systems. These crops have served various purposes, including being consumed as food by humans, used as feed for poultry, fodder for livestock, and even utilized as sources of biofuel (Saxena, 2020). For ages, tribal farmers have served as guardians of various millet varieties that have helped them in adapting to pests' attacks and climate changes (OB Bureau,

2023). And the absence of standardized scientific operating procedures prevented the government from offering sufficient support to the tribal communities that have diligently preserved this invaluable treasure (OB Bureau, 2023). Therefore, under the Odisha Millet Mission (OMM), the Agriculture and Farmers' Empowerment Department has formulated a standard operating procedure (SOP) to identify, assess, and approve traditional millet varieties through the seed system for landraces (Express News Service, 2023; OB Bureau, 2023). Thus, it was noted that with cooperation from the farmers, participatory variety trials have been carried out at the block level to select preferred seed varieties (Mohanty, 2023). The majority of the farmers belonging to diverse tribal groups favored local and traditional varieties of seeds over the improved ones. The FPOs were given the responsibility to multiply these seed varieties through multiple seed multiplication programs and community seed banks (Mohanty, 2023). What was more unique about this policy is to highlight the agency of marginal tribal farmers in sharing their point of view on keeping the records of landraces through crop diversity, their preferences, and the development of seed standards (Express News Service, 2023). Overall, 163 millet landraces have been retrieved (Express News Service, 2023), and specifically, 63 varieties of ragi or finger millet landraces have been identified and preserved in the state seed testing laboratory (Mohanty, 2022). It has been estimated that Odisha is on the verge of becoming the pioneer state in the country to officially release traditional millet landraces preserved by tribal custodian farmers (OB Bureau, 2023). In a news interview, Niramjan Mahanta, the Joint Director of the Department of Agriculture and Farmers' Welfare stated that millets, which were once central to tribal culture are being recognized and asserted under the OMM (Mohanty, 2023).

5 Conclusion

To sum up, it should be considered that the resurgence of millets in Odisha is primarily occurring in the districts where these grains were historically and traditionally cultivated and consumed within a diverse Indigenous farming system (Saxena, 2020). Despite a general decline over the years, farmers in these regions have persisted in cultivating millets, albeit in smaller and more restricted areas (Niyogi, 2018). Hence, it can be argued that the survival of millets in these indigenous cultural layers, to a certain extent, made possible such successful enactment of the Odisha Millets Mission among the communities. Also, in the past, there were no dedicated initiatives for rainfed agriculture, which resulted in the marginalization of farmers, particularly those from indigenous and tribal backgrounds (Raina et al., 2022). Therefore, preserving the traditional seed varieties by considering the opinion of neglected actors can reduce the social stigma of millets associated with backwardness and poor people's food and restoring the indigenous community's dignity. This model was further taken up by the central government which has urged all states to embrace the Odisha Millets Mission model to encourage the cultivation and promotion of millets, pulses, and oilseeds (Choudhury, 2023).

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