

# Constraints Perceived by Tribal Farmers in Production and Post-harvest Practices of Small Millets

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## ABSTRACT

Millet farmers are not getting remunerative prices to their produce due to various constraints like lack of assured markets, lack of mechanization and less awareness on improved production techniques. Despite these challenges, millet farming has the potential to play a significant role in ensuring food security and nutrition in the future. State and Central governments, research institutions, and the private sector are working to address the constraints involved in production and post harvesting of millet. To understand and overcome these challenges, millet federations or millet FPOs is need of the hour. The present study was conducted in 3 FPOs (Balanagar, Manyam Devarkadra and Mahbubnagar) promoted by ICAR-IIMR in Tribal area of Mahbubnagar district of Telangana. A total of 120 samples were used for collecting the data with the help of well tested interview schedule. The study was conducted during the year 2022-23. Descriptive statistics like frequency, percentage, averages and standard deviations were used for analyzing the data. The study highlighted the constraints involved in production and post-harvest practices of small millets. Strengthening extension services, promoting new varieties and quality seeds, and improving awareness about technology and modern farming practices can contribute to increased productivity and economic well-being for millet growers. Additionally, addressing labor and market-related challenges, can further help millet growers to achieve economies of scale.

**Key words :** Millets, Constraints, Extension services, Quality Seeds, Technology

## Introduction

Millets known by various names like “Nutri-Cereals,” “Coarse Cereals,” “Cereals of the Poor,” or “Shree Anna,” hold a special place in Indian agriculture, being one of the oldest crops cultivated in the country. These millets are broadly categorized into two groups: major millets (Pearl millet, Sorghum and Finger millet) and minor millets which comprise of Little millet, Barnyard millet, Kodo millet, Foxtail millet, Proso millet, and Browntop millet. Millets are not only highly nutritious but also pos-

sess antioxidant properties that contribute to a well-rounded diet (Das and Rakshit, 2016). In Indian agricultural landscape, millet farming plays a pivotal role, particularly for small and marginal landholders, constituting up to 86 percent of the farming community. However, several challenges have emerged due to the growing population, such as limited land available for millet cultivation, scarcity of labor, and the capital required to procure agricultural inputs (Rouamba *et al.*, 2021). Millets are known for their resilience to various climatic conditions, making them a viable choice for cultivation

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(Virendra *et al.*, 2022; Venkattakumar *et al.*, 2019).

Challenges in millet cultivation and consumption includes low productivity of small millets, need for nutritional profiling of various cultivars across all major millet growing areas, non-availability of end-product specific cultivars, lack of improved primary and secondary processing facilities, less shelf-life of millet food products etc (Kumari *et al.*, 2018; Prasanth and Murugan, 2021). Despite these challenges, millet farming has the potential to play a significant role in ensuring food security and nutrition in the future (Pradhan *et al.*, 2022). Governments, research institutions, and the private sector are working to address the constraints involved in production and post harvesting of millet (Pushpa and Kumar, 2023). To understand and overcome these challenges millet federations or millet FPOs is need of the hour (Gokul *et al.*, 2019). Millet Farmer Producer Organizations (FPOs) are collaborative associations formed by millet cultivators with the aim of strengthening their collective influence, boosting productivity, and advancing sustainable farming methods within the realm of millet cultivation (Sahoo *et al.*, 2022). Millet FPOs concentrate on the specific aspects of millet farming and its associated activities, making them pivotal players in assisting millet farmers, encouraging millet-centric agriculture, and resolving the hurdles confronted by those engaged in millet cultivation (Sangappa *et al.*, 2023; Tikon *et al.*, 2022). In the above context a study was conducted with the objective to identify the constraints involved in production and post-harvest practices of Small millets.

## Methodology

The present study was conducted in Mahbubnagar district of Telangana. 3 FPOs namely Balanagar, Manyam Devarkadra and Mahbubnagar Millets FPOs promoted by ICAR-IIMR, Hyderabad in Telangana were selected purposively based on the maximum area under millet cultivation. From each FPO 20 women and 20 men millet growers were selected randomly and thus making a sample of 40 from each FPO. A total of 120 tribal millet growers were taken for the present study. A well tested interview schedule was used for collecting the data from the respondents. The interview schedule was also prepared in local language (Telugu) by considering the millet growers literacy gap. The farmers were asked to rank the constraints faced by them based on

their experiences. The collected data was converted into quantitative terms for analyzing the data. Descriptive statistics like frequency, percentage, averages and standard deviations were used for analyzing the data. To find out the most significant constraints faced by the millet growers in production and post-harvest management, Garrett's ranking technique was used.

## Results and Discussion

Constraints faced by the millet growers during production and post-harvest management was shown in Table 1. The constraints were categorized into four dimensions (i) Information/input related (ii) Labor related (iii) Market related and (iv) Harvest related. In information/ input related constraints, lack of guidance by extension personnel was noted as major constraint faced by small millet farmers i.e., due to insufficient provision of technical support by external sources. Non-availability of new varieties was the second major constraint faced by farmers due to limited knowledge or awareness regarding the selection and availability of small millets. The third important constraint faced by the small millet farmers was non-availability of good and quality seeds, lack of awareness and access to technology.

Under Labour related constraints majority (100%) of the participants agreed high labour charge as the major constraint followed by non-availability of labour on time (83.33%). These two constraints are interlinked to each other as the skill level and expertise made the labour to demand high charge. As the selected areas are tribals they dont have other source of income and farming is their major source and due to this all were engaged in fields and at the time of harvesting labour became the major challenge. To address these constraints, improving awareness and exploring automation and technology can be used to reduce the dependence on labour.

Under market related constraints, fluctuations in millet market price was the prime constraint faced by the farmers. Insufficient market knowledge made the farmers to address this issue as the major constraint. Organizing buyer seller meet with millet growers on regular basis will assist the marketing. The second constraint faced by the farmers was the presence of excess intermediaries. This can be addressed by promoting farmer producer organizations (FPOs) and enabling direct farmer to buyer

**Table 1.** Constraints in Production and Post-Harvest Management of Minor Millets

Sl. No.	Constraints	Male farmers (n1=60)		Women farmers (n2=60)		Total (n=120) Farmers		Rank
		Farmers	%	Farmers	%	Farmers	%	
Information/input related								
1	Lack of awareness of the technology	36	60.00	54	90.00	90	75.00	4
2	Lack of access to technology	28	46.67	48	80.00	76	63.33	5
3	Lack of guidance by extension personnel	55	91.66	56	93.33	111	92.50	1
4	Non availability of good quality seeds	26	43.33	34	56.67	60	50.00	3
5	Non availability of HYV	58	96.67	50	83.33	108	90.00	2
Labour related								
1	Non availability of labor on time	56	93.33	44	73.33	100	83.33	2
2	High labor charges	60	100.00	60	100.00	120	100	1
Market related								
1	High cost of transportation	38	63.33	48	80.00	86	71.67	3
2	No assured market price	58	96.67	54	90.00	112	93.33	1
3	Less buyers of the produce	38	63.33	24	40.00	62	51.67	4
4	Presence of excess intermediaries	58	96.67	46	76.67	104	86.67	2
Harvest related								
1	Lack of storage facilities	12	20.00	30	50.00	42	35.00	3
2	Lack of Processing facilities	60	100.00	47	78.33	107	89.16	1
3	Lack of awareness about harvesting machine	59	98.33	44	73.33	103	85.83	2

relationships through online platforms and local markets. The third important constraint was high cost of transportation as the available market or Mandi are far away from the market followed by less number of buyers for the produce. This issue can be addressed by creating more market opportunities through e-commerce platforms as the access to physical market is becoming a problem for the farmer.

Under harvest related constraints, lack of processing facility was the major constraint faced by the farmers followed by lack of storage facilities for millets and lack of awareness about millet harvesting machine. Investment in storage infrastructure is more important to prevent post-harvest losses. Agricultural extension programs and training initiatives should be implemented to make farmers adopt modern mechanized harvesting techniques (Sahoo and Rout, 2023). Establishment of primary processing at FPO farm gate will help millet growers to overcome these constraints.

## Conclusion

A comprehensive approach to millet farming that includes infrastructure development, education, mechanization, and value addition has the potential to transform the millet sector and lead to a number of benefits for farmers, consumers, and the environ-

ment. It can lead to increased incomes for farmers, reduced food wastage, more sustainable and profitable agricultural sector, ultimately improving food security and the overall well-being of millet farming communities. Skill enhancement, mechanization, improved labour management, and promoting technology adoption can collectively reduce the reliance on manual labour, enhance the overall productivity of farming, and alleviate the challenges associated with labour constraints. Addressing market-related constraints is also essential for the sustainability and profitability of millet farming. By providing millet farmers with better market information, reducing the role of intermediaries, and improving market access through online platforms and local markets, millet farmers can achieve fair prices and better income, ultimately contributing to the growth of the millet industry. These strategies can enhance the resilience and economic well-being of millet farmers.

## References

- Das, I.K. and Rakshit, S. 2016. Millets, their importance, and production constraints. In: *Biotic Stress Resistance in Millets* (pp. 3-19). Academic Press. 101-111.
- Gokul, V.U., Balaji, P. and Sivakumar, S.D. 2019. Role of actors in Farmer Producer Organization (FPO) based millet value chain. *Madras Agricultural Journal*. 106(Special): 288-291.

- Kumari, P., Singh, G., Saran, D. and Thanuja, P. 2018. Constraints face by the farmers in the marketing of Pearl millet in Jhunjhunu district of Rajasthan. *Journal of Pharmacognosy and Phytochemistry*. 7(4): 1720-1721.
- Prasanth, A. and Murugan, P.P. 2021. A study on constraints faced by finger millet growers in adoption of nutrient management practices in Krishnagiri district of Tamil Nadu. *The Pharma Innovation Journal*. 10(12S): 1724-1727.
- Pradhan, N., Netam, P.K., Yadav, P., Sunkar, H. and Sahu, Y. 2022. Identification of problems and suggestions of popular minor millet growers. *Asian Journal of Agricultural Extension, Economics & Sociology*. 31(5): 35-39.
- Pushpa, J. and Kumar, G. A. 2023. Constraints Faced by Millet Farmers and Millets Processing Units in Madurai District. *Asian Journal of Agricultural Extension, Economics & Sociology*. 41(5): 25-28.
- Rouamba, A., Shimelis, H., Drabo, I., Laing, M., Gangashetty, P., Mathew, I. and Shayanowako, A.I.T. 2021. Constraints to pearl millet (*Pennisetum glaucum*) production and farmers' approaches to striga hermonthica management in Burkina Faso. *Sustainability*. 13(15): 8460.
- Sahoo, M. and Rout, S. 2023. Farmers' Perceptive on Private Extension Services. *Indian Res. J. Ext. Edu.* 23 (4): 41-45.
- Sahoo, S. L., Das, S. and Sahoo, B. 2022. Impact of Farmer Producer Organization (FPOs) on economic empowerment of the member farmers. *Indian Res. J. Ext. Edu.* 22(2): 59-64.
- Sangappa, Rafi, D., Laxmi, B., Charishma, E., Prabhakar, I., Kumar, P.A., Jha, S.K. and Sathyavathi, C. 2023. Farmers' Perception towards Climate and Millet Producer Organizations. *International Journal of Environment and Climate Change*. 13(9): 2754-2761.
- Tikon, F.U., Hassan, C.K., Ahmed, B. and Bako, J.P.D. 2022. Assessing Institutional characteristics, Factors influencing Profitability and Constraints of Millet Farming in Wukari Local Government Area, Taraba State, Nigeria. *Nigeria Agricultural Journal*. 53(2): 20-26.
- Virendra, P.K., Tiwari, K., Pandey, P. and Singh, D.P. 2022. Socio-Economic Upliftment of Tribal Women through FPO in Bastar District of Chhattisgarh. *Indian Journal of Extension Education*. 58(4): 144-148.
- Venkattakumar, R., Mysore, S., Venugopalan, R., Balakrishnan, B., Narayaswamy, B., Atheequlla, G.A., Paripurna, A. and Reddy, T.M. 2019. performance of farmers producers' organizations (FPOs) and associated factors in Karnataka: producers' perspectives. *Indian Res. J. of Ext. Edu.* 19 (2): 7-12.
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