



POLICY BRIEF NO. 4

## A policy path for Strengthening the Processing in Millets Ecosystem in India

### What is the Issue?

India is the largest producer of millets in the world and immense national and state efforts have been put in to revive millet production, distribution and consumption in the country. Processing of millets is a vital link between production and consumption as it improves their sensory and edible quality<sup>1</sup>. Processing of the millets namely sorghum, pearl and finger millet, which don't have a hard indigestible husk, is easy as it needs minimum processing (cleaning and grading) after harvest<sup>2</sup>. However, significant drudgery and time are involved in the processing of small millets namely little, proso, kodo, barnyard, foxtail and brown top millets, considering the hard indigestible husk layer. There are significant gaps in the availability of modern millet processing equipment in our country. A study conducted in Odisha revealed that standardized set of millet processing equipment are not locally accessible<sup>3</sup>. The available processing machines are an improvised version of paddy processing machinery, which are significantly inferior in efficacy and quality. This also reflects the gaps existing in research and development around millet processing.

### Overview

Inadequate availability of efficient millet processing equipment in our country, is one of the key limitations of the millet ecosystem.

<sup>1</sup> Karthikeyan M. Small millets in mainstream diets: promoting decentralized processing infrastructure.

<sup>2</sup> <https://themillet.org/processing-millets/>

<sup>3</sup> Assessment and Documentation of Good Practices, Lessons Learned and Preparation of Policy Briefs for Millets Mainstreaming, Odisha Millets Mission

It can be addressed by encouraging research and development to bring highly competitive processing equipment in the market. Concerted efforts focused on developing and implementing innovative technological solutions has the potential to bridge the existing gaps in millet processing.

## Key Challenges?

1. **Limited availability of processing machines:** The custom hiring centers (CHC) are not able to provide standardized set of millet processing equipment to the farmers.<sup>4</sup> It is reported that Standardization of sieve type and size is difficult due to variations in grains of the same type.
2. **High rental cost associated with the millet processing machines:** A study conducted among the farmers of Odisha reported that CHCs charge high rents for various processing machines. This limits their usage as farmers feel that it would increase the cost of production<sup>5</sup>
3. **Lack of customized sieves in the market:** There are different varieties of grains and for that there is a need for customized sieves for dealing with different types of small millets and for all pre and post hulling operations. Lack of customized sieves reduces the efficiency of the equipment and quality of the output.<sup>6</sup>
4. **Limited electricity supply in the villages:** Irregular electricity supply in the villages is one of the key limitations pointed out by the farmers of Odisha.<sup>6</sup>
5. **Lack of Technical expertise among the operators:** Shortage of skilled operators who understand the grains and are trained in using the right machine is one of the major challenges in cleaning small millet grain with minimum bran loss.
6. **Lack of innovation and technology:** Most of the machines available in the market are not user friendly as it is difficult to clean the inside of the machine daily, as grit, dust, mud and broken grains accumulate inside the covered bed with motor.<sup>5</sup> Overall the existing technology is not competitive enough to address the increased demand in the millet production.<sup>6</sup>

## Why is this Important?

Gaps in the availability of competitive millet processing equipment would limit the production, distribution and consumption of the millets, which could eventually shrink the whole ecosystem.<sup>7</sup> It is vital to ensure the availability of advanced processing equipment to improve the quality of millet processing and for quality output. In addition, it should keep a right balance between processing and nutritional value unlike the existing large scale processing, that compromise on the nutritional output of the small millets by removing the bran layer completely.<sup>8</sup>

<sup>4</sup> Assessment and Documentation of Good Practices, Lessons Learned and Preparation of Policy Briefs for Millets Mainstreaming, Odisha Millets Mission

<sup>5</sup> <https://dhan.org/smallmillets2/file/Assessment%20report%20of%20existing%20SM%20processing%20equipment%20in%20India.pdf>, variations in varieties, cultivation practice

<sup>6</sup> Assessment and Documentation of Good Practices, Lessons Learned and Preparation of Policy Briefs for Millets Mainstreaming, Odisha Millets Mission

<sup>7</sup> Karthikeyan M. Small millets in mainstream diets: promoting decentralized processing infrastructure.

<sup>8</sup> <https://themillet.org/processing-millets/>

## How policy can support?

- **Invite investments in millets processing R&D from the private sector:** Strengthening R&D initiatives through private sector participation will fast track the invention of optimized technology tool for millet processing, which requires minimum operational expertise.
  - Promote grants and fellowships and subsidies for stakeholders and startups to come up with advance technology innovations
- **Renewable Energy:** Incentivize and promote innovations that promote use of renewable energy such as solar energy in processing which can bring sustainability, and address the issue of irregular electricity availability in villages. It will also considerably reduce the cost in long run.
- **Decentralization of CHCs:** Strengthening of the small-scale processing units (Village level) and custom hiring centers with adequate technology to make the millet processing machines accessible to the farmers at an affordable cost.
- **Standardization of existing techniques:** Establish defined standard operating procedure for each processing equipment available in the market to make them more user friendly, particularly for women who play a key role in production and processing of millets. In collaboration with CFTRI, Dhan Foundation assessed existing small millet processing equipment like the grader, destoner and dehuller, etc., and identified the key issues as low flexibility, energy inefficiency, low hulling efficiency and difficulty in usage and cleaning. They also proposed structural and functional modifications to improve the sieving efficiency, separation mechanism (in huller), ease of use, maintenance and servicing.
  - Establish quality standards for machines based on scientific evidence, which can bring efficiency
- **Create an Innovation Ecosystem:** Efforts should be taken to establish collaboration among manufactures, research institutions, and end users to promote cross learning so that new innovation can be developed based on real-time requirements. DHAN Foundation India, McGill University, Canada, and Tamil Nadu Agricultural University, jointly implemented an action research project titled —Scaling up Small Millet Post-harvest and Nutritious Food Products (b/w December 2015 to April 2018). Main objective was to develop and apply ways for scaling up small millet processing and value addition technologies<sup>9</sup> to reduce the drudgery of women and improve the nutritional and diet related health security in India. These concerted efforts resulted in the development of the hulling and processing assemblies to meet varying operating requirements at the village.

<sup>9</sup>Scaling up Small Millet Post-harvest and Nutritious Food Products Project.2018

## Summing up

Inadequate availability of efficient millet processing equipment in our country, is one of the key limitations of the millet ecosystem. It is important to address this issue by adopting policy decisions that encourage Research and development to bring highly competitive processing equipment in the market. The policy makers should facilitate efforts that are focused on developing and implementing innovative technological solutions that has potential to bridge the existing gaps in millet processing.

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