



MAINSTREAMING MILLETS

POLICY BRIEF NO. 5

A Case for Strengthening Millet Value Chain through Value Added Millet Products

What is the Issue?

India is among the biggest producers of millets in the world. Considered a climate resilient crop, millets have substantial potential to expand dietary diversity in food baskets. Millets are used in several traditional foods; however, the lack of large-scale industrial demand discourages farmers from cultivating them. The hard seed coat of millets increases their storage value but makes it difficult to process and cook quickly. Among the major limiting factors to millet consumption is the limited availability of ready-to-cook (RTC), ready-to-eat (RTE) and value-added millet products that have longer shelf life and have higher palatability.

Key Challenges?

1. **Limited credit channels for private entrepreneurs for RTE/RTC processing:** Millets are gluten-free and thus have lower elasticity, affecting their utilization as a base grain for RTE/RTC products.¹ However, there is substantial literature on varied techniques for treating and converting millets into value-added products. RTE/

Overview

Millets are classified as “coarse grains” and are a part of staple diet in some parts of rural India. While millets are nutritionally superior to cereals, their consumption is skewed to subsistence farmers or families belonging to lower income strata. There has been newfound demand in urban markets, however it is yet not significant to accelerate movement across value-chain.

¹ Saleh, Zhang et al (2013), “Millet grains: nutritional quality, processing, and potential health benefits”, Comprehensive Reviews in Food Science and Food Safety, Vol 1 2.

There is a need to encourage mechanization and create a conducive environment for pivoting research & development efforts to the private sector, with government support, identifying RTE/RTC processing as part of the MSME sector creating employment opportunities, especially for women.

“There are many reasons why millets are not a regular product in the consumer basket. One of the reasons is the fact that not many processing technologies have been developed yet. It's not enough to just brand a commodity and take it to the market, an entire value chain is needed.”

- Dr B Dayakar Rao,
Principal Scientist,
Indian Institute of Millets
Research

RTC millet products are not recognized as a specific MSME intervention and therefore lose out on credit access through various government schemes.

2. **Significant price spread in the value-addition chain:** Lack of decentralized production units leads to movement of most millets from production regions to distant processing regions such as Nashik, Maharashtra, crowding out local production and inflating the cost of processed millet products.
3. **Limited marketing of millets:** The lack of investment in processing facilities impacts marketing of millets vis-à-vis other cash crops, with no encouragement (through advance credit/ guaranteed buyers) from intermediaries or producers. It is cultivated for subsistence reasons only and does not translate into income generation for the farmer, despite lower input costs and it being an easy crop to grow.

Why is this Important?

Demand for RTE/ RTC millet products can boost incomes for small farmers through a crowding-in effect in the backward market linkages with the farming sector. Further the highly nutritious nature of millets along with the low glycemic index and high calcium and iron content can positively impact India's nutrition landscape. The addition of milled millet flour (foxtail, barnyard, finger millets) to wheat flour increases protein, fat and ash² concentration while reducing the carbohydrate concentration. Composite flour can be used as nutrition-dense option for supplementary feeding programs³. Grown largely in tribal areas, and with significant labor participation of women, local level millets processing can play a substantial role in enhancing tribal incomes and provide economic opportunities to women farmers.

What should Policy Makers Do?

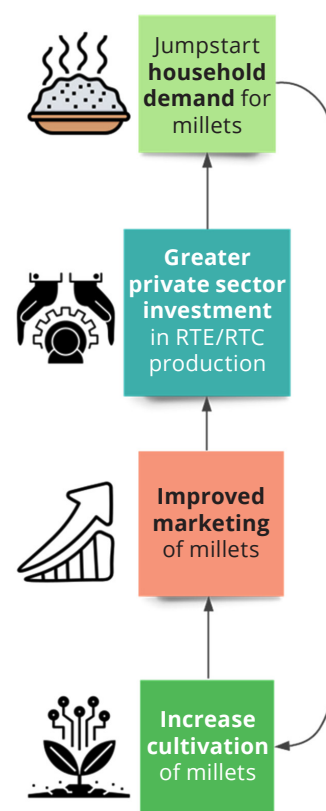
1. **Invite investments in millets processing R&D from the private sector:** Strengthening research & development initiatives through the private sector will accelerate the invention of cost-effective, large-scale processing techniques for millets. Policymakers can encourage innovation by subsidizing R&D efforts and sharing

² <https://people.umass.edu/~mcclemen/581Ash&Minerals.html>

³ Singh, P. and Raghuvanshi, R.S. (2012) Finger millet for food and nutritional security. African Journal of Food Science, 6 (4). pp. 77-84.

intellectual property rights (IPR) with successful private ventures.

- The Government of India upgraded the Directorate of Sorghum Research to the status of the **Indian Institute of Millets Research (IIMR)**⁴ in 2014 to transform millets from a subsistence crop to a climate-resilient nutri-cereal enterprise for equitable prosperity. Under the incubation services offered by IIMR, RTE/ RTC technologies developed in-house are shared with entrepreneurs for three years, extendable for two more years. An example of this is nutri-hub, the Department of Science & Technology (DST), Govt. of India supported Technology Business Incubator. It is a unique and first of its kind innovation to cater start-ups needs in the Nutri-cereals sector in the country, encouraging budding Entrepreneurs to promote the growth of Millets.
- Entrepreneurs should be encouraged to develop their technologies and provided need-based government loans/ subsidies after technical vetting of the concept. Private partners should be given a limited-period Intellectual Property Right to recover costs. This will enable the optimized use of allocated funds towards promising RTE/ RTC processing technologies developed through private seed capital.



2. **Incentivize private sector participation in RTE/RTC segment:** Participation of private sector entrepreneurs will aid in flexibly responding to consumer demands (such as for ragi cookies, pizza bases, noodles, jowar flour etc.) and facilitate better price discovery for value-added products.
 - IIMR offers various incubation services for start-ups ranging from technology consultancy, go-to-market strategies, mentoring and funding access through accelerator programs under its “Nutrihub” initiative. However, allocations in its parent Ministry of Agriculture and Farmers’ Welfare are spread across various segments (crop, horticulture, animal husbandry etc.); the exact fund set aside for the Nutrihub is unclear. Agricultural engineering attracts less than 2% of the total funds allocated to this Ministry⁵.
 - The Ministry of Micro, Small & Medium Enterprises has a plethora of credit generating schemes. Entrepreneurs interested in the RTE/RTC space should be given accreditation under the MSME framework to enable easy access to funds.
3. **Decentralize value-added processing:** Millet processing provides a significant opportunity to boost off-farm livelihood opportunities for local women and men. Placing processing units closer to production sites reduces the factory gate pricing of millet products. Off-farm opportunities ensure that cultivators also get a chance to integrate value-addition in their scope of work and reap better monetary benefits. It also makes RTE/RTC millet-based products affordably accessible to rural households⁶. There is an

⁴<https://www.millets.res.in/>

⁵ICAR Budget Book 2018-19 (Non Plan)

⁶DHAN Foundation (2012), “Supporting Millets in India: Policy Review and Suggestions for Action”

additional gender dimension that gets addressed through decentralized processing; typically, women engage in laborious decorticating activities⁷. Situating the processing units close to production sites expands their choice of employment.

OMM has targeted improvement in consumption of millets as much as its production. Through efforts such as millet-based food trucks, café, stalls during sports events millet consumption are being promoted. The development of tasty millet-based recipes is also a key area of work under OMM. Similarly, in Andhra Pradesh, the Agricultural Technological Management Agency has initiated the Comprehensive Revival of Millets Programme, wherein millet processing units have been commissioned and handed over to select entrepreneurs in the Araku Mandal. The agency recognized that the consumption of millets was declining in a high production area as most of the 2000 tons of produce were sent far away for processing⁸.

Policymakers should provide soft loans/ adopt a co-pay model to incentivize decentralized RTE/RTC processing units at sites closer to cultivation. A conscious decision to support processing units run by women entrepreneurs/ Self-help Groups is also suggested. This would assist in leveraging micro-finance, and National Rural Livelihoods Mission (NRLM) funds towards processing millets into RTE/RTC products, while at the same time enable economic empowerment of rural women.

Summing up

Millets are a super-food that has immense potential to improve dietary diversity. It is a hardy crop that is drought- and pest-resistant, is a part of subsistence diet and still faces significant hurdles in its forward market linkage. Production regions and processing zones don't coincide in India, diverting consumption of value-added products to niche, urban markets. Postharvest processing is labor-intensive and often uses milling equipment meant for other grains, reducing grain recovery.

RTE/RTC processing techniques are available, but its gluten-free nature restricts the kind of products created using millets as a base. Identifying the right technology for RTE/RTC production is prohibitively priced. While the Government has a dedicated IIMR for research and enterprise incubation, most projects run on a pilot basis or with private sector partners in a subdued role. There is a need for the Ministry of Food Processing Industries to encourage mechanization and create a conducive environment for pivoting research & development efforts to the private sector, with government aid (need-basis), identifying RTE/RTC processing as part of the MSME sector for credit access, decentralizing processing units to production sites, and creating employment opportunities, especially for women.

⁷ <https://www.downtoearth.org.in/interviews/food/-labour-burden-on-women-millet-producers-must-be-reduced--61748>

⁸ <https://www.thehindu.com/news/cities/Visakhapatnam/millet-processing-unit-opened/article22971782.ece>

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