

Millets: Making a significant comeback

Pooran Chand¹, Addya Singh² and Neha Jha³

¹Professor, Genetics and Plant Breeding, Sardar Vallabhbhai Patel University of Agriculture and Technology, Meerut-250110, UP-India. Email: pckardam@gmail.com

^{2,3}Ph.D. Scholar, Genetics and Plant Breeding, Sardar Vallabhbhai Patel University of Agriculture and Technology, Meerut-250110, UP-India.

Email: addyasaurabhrkt99@gmail.com and njha27169@gmail.com

[DOI:10.5281/TrendsInAgri.17256278](https://doi.org/10.5281/TrendsInAgri.17256278)

“The history of food, especially in the Indian context, will be left incomplete without giving due importance to millets. As slower and healthier lifestyle of humans, it is realized that some of the most beautiful practices have been left behind. For working towards a better future, there is need to reclaim some of these values. Millets provide us an interesting case study”.

Millets and the history

Millets are a group of highly variable small-seeded grasses, widely grown around the world as cereal crops or grains for human food and as fodder. There is evidence of the cultivation of millet in the Korean Peninsula dating to the Middle Jeulmun Pottery Period (around 3,500–2,000BC). In India, millets have been mentioned in some of the oldest Yajurveda texts, identifying foxtail millet (*priyangava*), Barnyard millet (*aanava*) and black finger millet (*shyaamaka*), thus indicating that millet consumption was very common, pre-dating to the Indian Bronze Age (4,500BC).

Even until 50 years ago millets were the major grain grown in India. From a staple food and integral part of local food cultures, just like many other things, millets have come to be looked down upon by modern urban consumers as “**coarse grains**” – something that their village ancestors may have lived on, but that they had left behind and exchanged for a more “refined” diet. Unfortunately, this said refined diet lacks the nutrients critically important for us (food should be as local and wholesome as possible).

What happened?

Following the western model of development, India and other developing nations have lost out on a lot of useful and meaningful things. Food habits have been one of the biggest

changes. We are forgetting our indigenous foods and chasing standardization. Millets too have been discarded as being too primitive to be used, forgetting the roots. These changes, coupled with state policies that favour rice and wheat, have led to a sharp decline in millet production and consumption. Before Green Revolution, millets made up around 40 percent of all cultivated grains (contributing more than wheat and rice). However, since the revolution, the production of rice has increased doubly and wheat production has tripled.

Will millets comeback?

Probably yes, the millets are making a significant comeback, largely driven by government initiatives in India following the UN's International Year of Millets 2023, as well as growing global recognition of their nutritional and environmental benefits. These once-forgotten ancient grains are gaining popularity for their drought-resistance, low-water requirements, and rich content of fiber, minerals, and antioxidants, making them a climate-smart and healthy alternative to rice and wheat.

Reasons for Millets Comeback

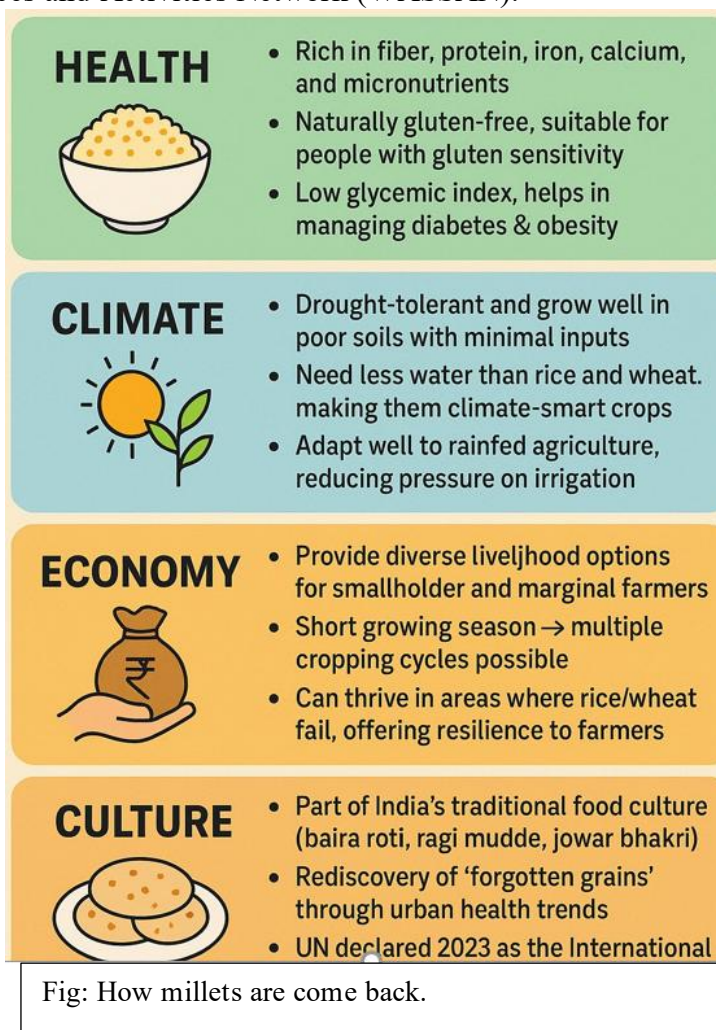
- **Nutritional Value:** Millets are high in fiber, protein, iron, calcium, and antioxidants, supporting digestive health and providing essential minerals. They are also a great option for those with gluten sensitivities as they are naturally gluten-free and ideal for celiac and gluten-sensitive consumers. They have low glycemic index, which in helps managing diabetes and obesity. Millets also support gut health due to prebiotic properties.
- **Climate Resilience:** As climate-smart crops, millets are hardy, drought-resistant, and require significantly less water to grow than traditional crops like rice and wheat. Millets are short growing season, reducing crop failure risks and ideal for climate-stressed regions.
- **Sustainability:** Millets are lower carbon footprint compared to rice (no methane emissions from flooded fields). These can be grown with minimal fertilizer and pesticides. Millets also promote crop diversity and reduce dependence on just rice and wheat.
- **Government Support:** In India, the International Year of Millets 2023, proposed by Prime Minister, has spurred a national effort to promote millet cultivation, consumption and boosting awareness.
- **Economic Benefits for Farmers:** Millets are often considered a good option for farmers, as they are easy to plant, grow quickly in poor soil conditions, and can provide a sustainable income. Governments (esp. India) promoting millets in public

distribution, midday meals, exports and growing global market for "ancient grains" in health-conscious urban populations.

- **Shifting Consumer Trends:** A growing awareness of millets' health benefits, coupled with efforts to change the perception of these grains as a "poor man's food," is increasing their appeal in modern diets.
- **Cultural & Culinary Revival:** The traditional recipes of millets (ragi roti, bajra khichdi, foxtail millet dosa) are being rediscovered. Modern innovations like millet pasta, noodles, energy bars, bakery products are attracting younger consumers. The restaurants, startups, and food-tech companies branding them as "smart foods."

How millets are being reintroduced?

- **Public Initiatives:** In India, programs like the Public Distribution System (PDS) and Mid-day Meal Scheme are being used to reintroduce millets into diets, according to the Watershed Support Services and Activities Network (WASSAN).
- **Commercial Products:** Various organizations and companies are developing and marketing millet-based products, making them accessible and appealing to urban consumers.
- **Culinary Innovation:** Efforts are underway to integrate millets into modern cuisine and dietary habits, promoting them as a versatile and healthy food staple, not just for traditional cooking.
- **Farmer Education:** There is a focus on educating farmers on improved millet cultivation techniques to ensure a sustainable supply of these valuable grains.



Importance of different types of millets

There are two broad categories of millets, namely major and minor millets. While pearl millet, sorghum, finger millet and foxtail millets come in the category of being the major millets, others such as *sama*, *qodo*, *chinna* etc., are considered minor millets. Many of the minor millets are endangered, as they are getting depleted, and some of them have even totally been eliminated.

Each millet has an importance of its own. While some millets, such as finger millet, are full of calcium, some like jowar have potassium and phosphorus, and foxtail is

fibrous while kodo is rich in iron. Therefore, it is advisable to keep rotating the kind of millets we are eating. We should also remember that we should not mix millets and should only eat one grain in a meal as each grain has its own requirement as the medium for digestion and mixing them can create imbalances in body.

Some important points regarding millets:

- Due to its high resistance against harsh conditions, millets are sustainable to the environment, to the farmer growing it, and provide cheap and high nutrient options for all.
- Nearly 40 percent of the food produced in India is wasted every year.. Millets do not get destroyed easily, and some of the millets are good for consumption even after 10-12 years of growing, thus providing food security, and playing an important role in keeping a check on food wastage.
- Millet is fibrous in content, has magnesium, Niacin (Vitamin B3), is gluten-free and has a high protein content.

Challenges of millets cultivation: The major challenges in millet cultivation (covering production, processing, and marketing) are:

1. Agronomic Challenges

- Low Productivity – Millets generally yield less compared to rice/wheat due to limited breeding improvements.

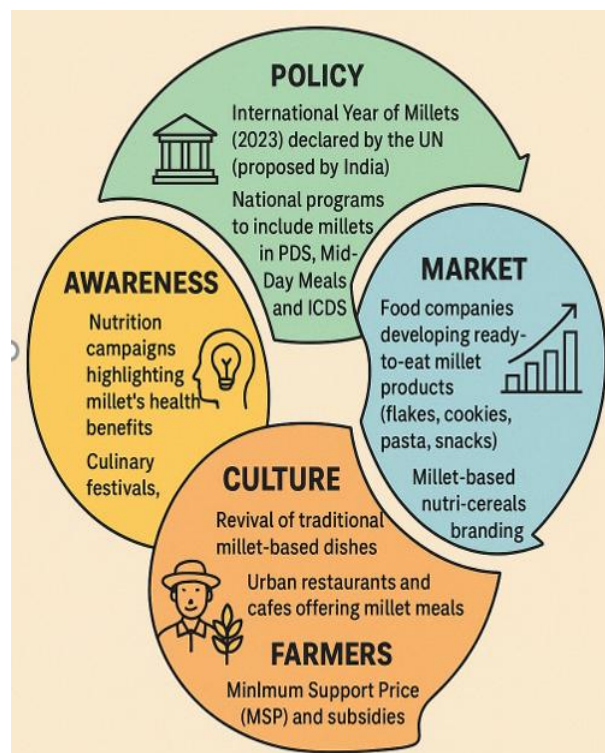


Fig: How millets are being reintroduced

- Marginal Lands – Often grown on poor, rainfed soils with low fertility.
- Climate Vulnerability – Though drought-tolerant, extreme weather (erratic rains, heat stress, delayed monsoon) affects yields.
- Pest and Disease Pressure – Shoot fly, stem borer, downy mildew, smut, and blast cause significant losses.
- Seed Availability – Limited access to quality, improved, and diverse seed varieties.

2. Input and Resource Constraints

- Low Fertilizer Use – Farmers apply very little nutrients, leading to poor crop performance.
- Limited Irrigation – Mostly rainfed, with little support from irrigation infrastructure.
- Mechanization Issues – Small-seeded millets are difficult to sow/harvest with standard machinery.

3. Post-Harvest and Processing Challenges

- Small, Hard Grains – Difficult to dehusk and polish compared to rice/wheat.
- Lack of Processing Facilities – Few modern mills; mostly traditional labor-intensive processing.
- Storage Problems – Susceptibility to insect/pest infestation in storage.

4. Market and Policy Challenges

- Weak Market Linkages – Poor procurement systems and price instability.
- MSP & Procurement – Though MSP exists for some millets, government procurement is limited.
- Consumer Awareness – Low demand due to perception as “poor man’s food.”
- Competition from Major Cereals – Rice and wheat dominate PDS (Public Distribution System).

5. Socio-Economic Challenges

- Small & Fragmented Landholdings – Mostly grown by marginal farmers.
- Labour Intensive – Requires more effort in sowing, weeding, and processing.
- Migration & Declining Interest – Younger farmers prefer cash crops.

In summary: Millets are climate-resilient and nutritious but face hurdles of **low productivity, poor processing technology, weak markets, and limited policy support**. Addressing these will be key for their mainstream comeback.

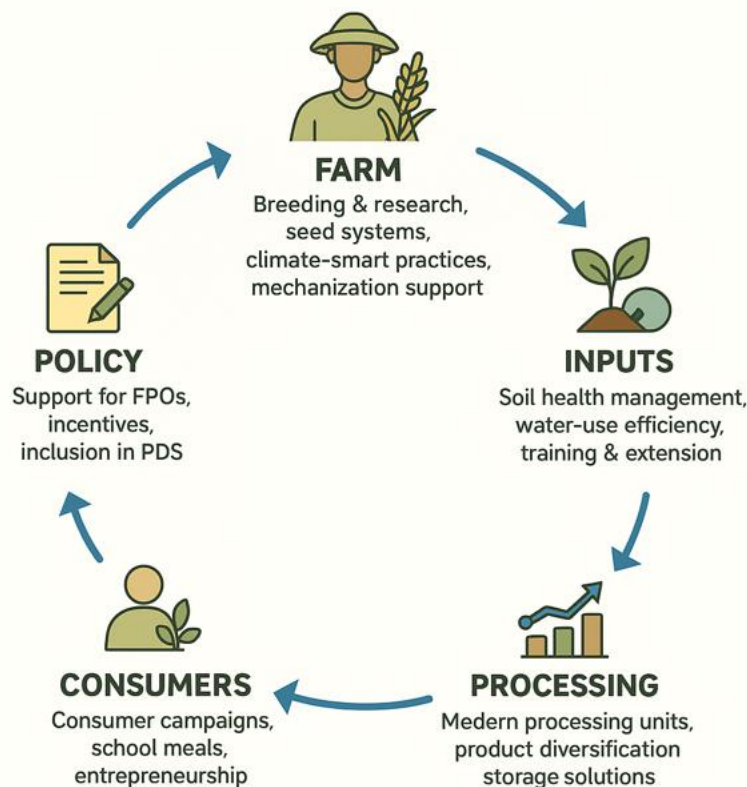


Fig. The way forward for millet production

Winds of change for millets

Today, a lot of efforts are being put to increase the demand of millets in India and the world, including changing the mindset of the people. Many organizations are coming up in support of this cause. Efforts are being taken to educate farmers about better millets growing techniques. A lot of importance is given to them because of their non gluten tendency. Many recipes with millets as the base have been floating around too. One example of a major boost for the cause can be given by the Smart Food campaign.

Smart Food with the tagline ‘*good for you, good for the planet and good for the smallholder farmer*’ is an initiative that will initially focus on popularizing millets, and sorghum and has been selected by LAUNCH Food as one of the winning innovations for 2017.

Smart Food will be taken forward as a partnership and many organizations have already teamed up to popularize millets. In India, this includes Indian Institute of Millet Research (IIMR), National Institute of Nutrition (NIN), MS Swaminathan Research Foundation (MSSRF) and Self-Employed Women’s Association (SEWA). Millets’ popularity is slowly rising again and many efforts are going on to make them mainstream again. A balanced approach to bring this crop back in the public consciousness will go a long way to

solve some of the major food issues in the country.

Conclusion

Millets are making a strong comeback worldwide in diets, agriculture, and policy circles. Their resurgence is tied to health, climate, and sustainability factors. Millets are back because they are nutritious for people, resilient for farmers, and sustainable for the planet.