



Small millets

Small millets, big potential: diverse, nutritious and climate smart

In developing countries, lack of dietary diversity is one of the key factors behind malnutrition and the prevalence of non-communicable diseases such as diabetes. Small millets, grown as a complement to existing crops, could offer an answer. Performing well in marginal environments, they have superior nutritional properties, including high micronutrient and dietary fiber content, and low glycemic index. However, there has been a drastic decline in production and consumption of small millets, mainly due to limited productivity, high drudgery involved in their processing and negative perceptions of small millets as a food for the poor. In response, farmer-led research, innovative promotional efforts, and inclusion of small millets in public food programs - introduced under the *Revalorizing Small Millets in Rainfed Regions of South Asia* project - have brought increases in their production and consumption. But integrated and focused public support is now needed for context-specific production and processing technologies, for effective promotion by the private sector and for inclusion in government food schemes, in order to bring back small millets to farms and food baskets.

What are the issues?

- Despite their superior nutritional qualities and climate resilience, cultivation of small millets in India declined from 7.22 million hectares to 2.29 million hectares between 1961 and 2009 (DHAN & WASSAN, 2012).

Did you know?

- Small millets include finger millet (*Eleusine coracana*), kodo millet (*Paspalum scrobiculatum*), little millet (*Panicum sumatrense*), foxtail millet (*Setaria italica*), proso millet (*Panicum miliaceum*), and barnyard millet (*Echinochloa colona*). Each has specific nutritional benefits.
- All small millets are rich in dietary fiber and have low glycemic index.
- Known as nutra-cereals, ready-made mixes of foxtail, little and barnyard millets have proven therapeutic value for diabetics.
- Small millets can be grown in the most marginal areas and can adapt to a wide range of growing environments.
- Small millets require only one-fifth of the water needed for rice cultivation.

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- In India, among children under five, 48% have stunted growth, 43% are underweight and 19.8% are wasted. Nepal also has a very high rate of child malnutrition with half (49%) of children under five having stunted growth and one third (39%) being underweight. One in four (24%) women of reproductive age has chronic energy deficiency; 23% of Sri Lankans are undernourished.
- While cereals provide a cheaper source of dietary calories, small millets provide vital micronutrients like vitamin B, calcium, iron, folic acid and sulfur, as well as dietary fiber, making them a valuable tool in the fight against malnutrition.

Why the decline in small millets?

A number of factors are responsible for a steep decline in the production and consumption of millets.

- There is very limited research investment on finger millet in Nepal and Sri Lanka, even though it has a significant role in food security. While Nepal's recently introduced *Seed Vision 2013-2025* advocates support for finger millet, no practical mechanism is in place. In India, research investment is very limited in small millets other than finger millet.
- Small millets are neglected in terms of support for both production and promotion, compared to other crops.
- Even when government schemes promote millets, only major millets and finger millets are a priority. Other small millets remain in the shadows.
- In marginal, rainfed areas, farmers are losing interest in cultivating small millets due to high labor requirements and the tedious work of preparing harvested grains for consumption.

Children enjoying millets

India is running the world's largest supplementary nutrition program, Integrated Child Development Services (ICDS), to address malnutrition in children. To create a model for effective integration of small millets in the menu of ICDS, a pilot was initiated in Srikakulam district of Andhra Pradesh with the Department of Women Development and Child Welfare. The pilot serves small millets-based foods to 160 children in 10 feeding centers for 16 days out of the total 26 feeding days in a month. The modified menu supplies 14 times more fiber, five times more iron, 2.6 times more calcium, 1.5 times more phosphorus, 1.4 times more protein, five times more thiamine and 1 to 1.5 times more magnesium and zinc per month when compared to the regular rice-based menu. The majority of mothers are very happy that if this millet-based food is served continuously their children will be healthy; some elders are happy that this brings back millets into their regular farming and food systems.

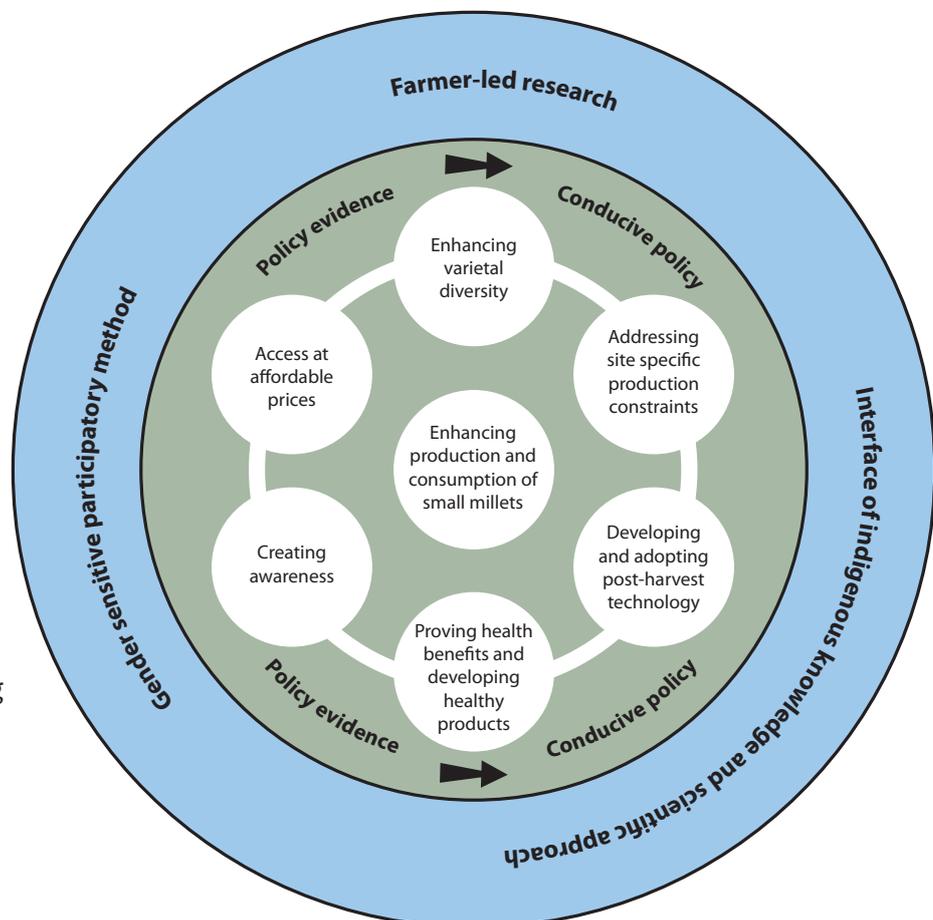


Figure 1. REMISA approach for small millet promotion

An innovative way of bringing millets to the urban poor

In the context of rising urban poverty, pushcart porridge vendors (PPV) play a significant role in meeting the food requirements of the urban poor by selling nutritious millet food. On average, each PPV reaches 48-95 consumers per day, of whom 73% are casual laborers. The general perception is that food served by PPVs is not hygienic. The RESMISA project provided training in hygienic food handling practices and facilitated 80 PPVs in Madurai, Tamil Nadu, to be licensed by the Food Safety and Standards Authority of India (FSSAI). This has led to a 30-35% increase in customer numbers. Investing in this market channel would be a way to reach a large number of people; the model could also be replicated in other cities.

Evidence of change in the lives of small millet farmers

The *Revalorizing Small Millets in Rainfed Regions of South Asia* project is working to increase the production and consumption of small millets in eight regions in India, Nepal and Sri Lanka. Small farm machineries like threshers and dehullers have significantly reduced (by 35-90%) the drudgery of women in processing millet in preparation for cooking. In addition, small millet recipes have been promoted in schools and child care centers and more schools are interested in including small millet in their food scheme. Innovative approaches, such as promotion

through street food vendors and women's federations have been adopted to reach poor families. The project was able to reach over 100,000 people to create awareness of the importance of small millet based foods in their diets.

What are the policy implications?

Small millets need a comprehensive and integrated development strategy on an extensive yet location-sensitive scale.

Promotion through public support

Small millets ought to be included in the Indian public distribution system (PDS), based on regional production and consumption patterns, capitalizing on the National Food Security Act. The quantity supplied needs to be increased gradually towards a monthly allocation of 10 kg per household. Small millets should likewise be included in the menus of various food-based welfare schemes implemented at state level.

Promotion through markets

Establishing small processing units within a radius of 5 km from the village: Investment support should be provided to local entrepreneurs for the installation of processing units for dehulling and flour making of location-specific small millets. Local entrepreneurs already running small mills can be given preference, as they have the necessary infrastructure and clientele in place. This will boost home consumption and the



A woman taking up improved planting methods of finger millet

local economy. Wherever possible this activity can also be linked to active women self help groups.

Small millets clusters: Cluster initiatives should be introduced, covering 1,000 hectares, or 2,000 farmers, or a number of villages (as appropriate), where grains are gathered and processed for commercial distribution. These clusters will produce ready-to-cook grain for shops, rural markets and supermarkets.

Ready-to-eat small millet food entrepreneurs: Support should be given to micro-, small- and medium-entrepreneurs producing millet-based foods. These entrepreneurs will increase market visibility for millets and introduce new products, more acceptable to contemporary tastes. Special approaches should be designed to incentivize informal entrepreneurs not covered by the micro enterprise definition, including pushcart porridge vendors, who are patronized by large segments of the poor population.

Awareness-raising

Awareness-raising should be given high funding priority within the small millet clusters. The lack of awareness about millets and the negative image of these crops that persists in certain areas could endanger supply focused interventions, such as the introduction of millets in PDS. Awareness-raising should also be carried out at the level of the consumers in the non-producing regions, for example through the mass media and school curricula.

Women promoting small millets

The Women Kalanjiam Federations of Salem region, supported by the DHAN Foundation, have promoted small millets among their 30,000 member families. This was triggered by the WALKATHAON, a public awareness event in February 2013, in which an oath was taken by members to incorporate small millets in their diet. Around 20,000 interested members purchased 1 kg each of little millet, kodo millet, barnyard millet and foxtail millet, and tried them in their homes. About 40% of the women members have declared a wish to incorporate small millets on a regular basis. To meet this increasing demand, the collective of women's federations at Salem started an outlet selling the millet varieties; another two are in the pipeline at Veerapandi and Ayodhya Pattanam.

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