

The Context

Many developing countries are facing the double burden of malnutrition, with hidden hunger on the one side and obesity on the other side. In India, there is large-scale prevalence of stunted growth among children and anaemia among pregnant women (IFPRI 2014) and obesity is increasing across the rural and urban areas (Kalra et al. 2012). Furthermore, chronic and non-communicable diseases are on the rise. Increasing research and epidemiological evidence link the declining dietary diversity to these health issues (Khoury et al. 2014). Small millets are one of the important traditional food groups that have been moved out of the food basket in recent times (Ramachandran 2007). Small millets include finger millet, kodo millet, little millet, foxtail millet, proso millet, and barnyard millet. Small millets offer better nutrition with various micronutrients like vitamin B complex, calcium, iron and sulphur, high dietary fibre and low glycemic index than rice and wheat (Saleh et al. 2013). They are known as both preventive and curative foods. Small millets are climate smart crops with ability to adapt to a wider range of growing environments. Despite these advantages, cultivation and consumption of small millets have declined across the world. In India, the area under cultivation declined from 7.26 million ha to 1.98 million ha (a decline of 56.4% in finger millet and 82.5% for the other small millets) between 1965-66 and 2011-12 (Government of India 2014). One of the important reasons is the drudgery related to dehulling of the small millets faced by the women in the producing regions. Consumption is also restricted due to inadequate availability of ready-to-cook and ready-to-eat small millet products in local markets at affordable prices. This limits consumption by the poor and lower middle class consumers, who are most affected by malnutrition.

The Project

Combating the twin burden of undernutrition and overnutrition

To address the twin burden of undernutrition and overnutrition, an action research project titled "Scaling up Small Millet Post-harvest and Nutritious Food Products" was initiated with the support of CIFSRRF. The main objective of the project is to 'develop and apply ways for scaling up small millet processing and value addition technologies to reduce drudgery of women and improve the nutritional (and diet-related health) security in India'. The present project is a scale up project of two earlier CIFSRRF projects and attempts to address the factors limiting consumption of small millets mentioned above. The project

plans to scale up appropriate scale small millets processing equipment and appealing small millet food products.

Scaling up the reach of appropriate scale small millets processing equipment

The major problems with the processing of small millets- little, foxtail, kodo, barnyard and proso millets- are difficulty in removing extraneous matter, heterogeneous quality of grains, lower head rice recovery and difficulty in separating hulled and un-hulled grains. The earlier projects developed and tested two prototypes of dehullers (1 centrifugal and 1 rubber roller types) to address these issues. The machines developed increased hulling efficiency, and reduced broken percentage and bran loss. They reduced the drudgery of women in the small millets production regions significantly by reducing the time involved in dehulling by 70 %. Unlike the large-scale mills in operation, the prototypes resulted in more nutritious small millet rice and grits through better retention of bran, which has more fibre and micronutrients. The current project will fine tune the small millet equipment to suit varying requirements. Business development support will be offered to equipment fabricators to scale up their operations across India to meet the requirements at the village, micro enterprise and SME levels.

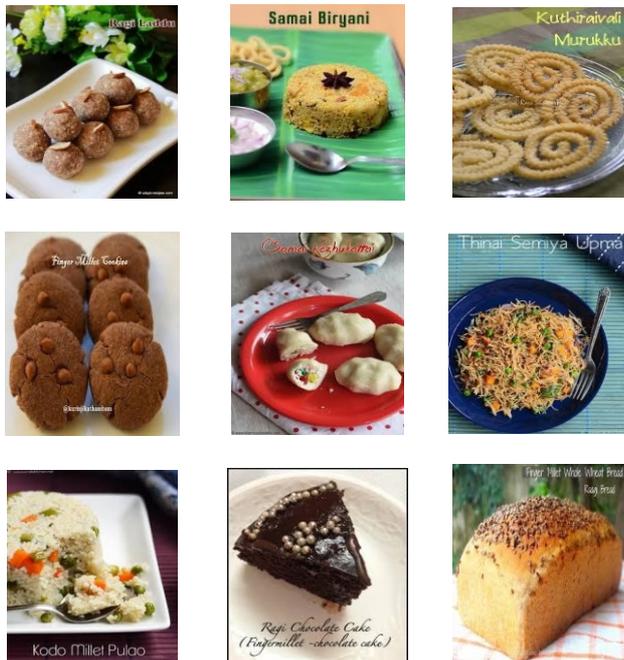


Scaling up the reach of appealing small millet food products

Lack of appealing nutritious small millet products is one of the important reasons for not being able to break the social stigma associated with the consumption of small millets (known as the grains of the poor). Earlier CIFSRRF projects have developed over 40 small millet traditional and modern food products. These products raised the profile and appeal of small millets among rural and urban consumers and represent an interesting opportunity for food business enterprises. The project plans to expand the availability and access to small millet food products



to large number of consumers through private and public efforts. This will be done through offering business development support to SMEs and micro enterprises and Farmer Producer Organisations and introduction of millet in the product line of some of the big food players.



Scaling up approach

The overall scaling up approach of the project includes strengthening of equipment manufacturers and food service providers in the small millets value chain for increasing their operations, including private, public and social entities. The specific strategies are to 1) offer customised business development support; 2) offer business enabling support; 3) facilitate innovative collaboration across the small millets value chain, including introduction of small millet products into public food programs; 4) build the awareness and capacity of end users and 5) advocate evidence based policy.

Project objectives

1. To scale up the reach of de-hulling and processing equipment and appealing small millet food products.
2. To test different business, market development and service provision approaches across the small millets value chain to improve consumption of small millets in rural and urban areas.
3. To inform key policy makers and other important stakeholders on the best practices and policy interventions needed for scaling up the adoption of small millets processing and value addition technologies.
4. To build the awareness and capacity of end users and consumers of small millets processing equipment and value-added millet-based food products.

Expected results

1. Increased capacity of up to five equipment manufacturers to meet varying dehulling / processing equipment requirements at village, micro enterprise and SME levels in India.
2. Increased capacity of 10 SMEs, 150 micro enterprises and 3 FPOs for expanding the reach of appealing small millet products to over 150,000 consumers on a sustainable basis.
3. Develop a proven business model for increasing the availability of dehulling equipment and adoption of small millet products in India.
4. Inform policymakers on best practices and policies for increasing the availability and consumption of small millets.
5. Increased awareness and familiarity about suitable small millets processing equipment and small millets food products among the end users, especially women, civil society groups and SMEs.

Project partners

Principal partners : **DHAN Foundation, India & McGill University, Canada**

Core partner : Tamil Nadu Agricultural University, India

Private partners : AVM Engineering Industries, Victor Agro Sales, Kalanjiam Thozhilagam Limited & Earth 360 Eco Ventures ;
Additional partners will be identified.

Country : India

Funding : CA\$ 1.5 Million or ₹. 72.63 Million

Duration : December 2015 to March 2018

Supported by : **International Development Research Centre (IDRC) & Global Affairs Canada (GAC)**

Web link : <http://www.dhan.org/smallmillets/>
<http://www.dhan.org/smallmillets2/>

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