STRENGTHENING VALUE CHAIN ACTORS FOR
SCALING UP THE REACH OF NUTRITION-DENSE
SMALL MILLETS

Muniappan, Karthikeyan;

© 2018, DHAN FOUNDATION

This work is licensed under the Creative Commons Attribution License
(https://creativecommons.org/licenses/by/4.0/legalcode), which permits unrestricted
use, distribution, and reproduction, provided the original work is properly credited.

Cette œuvre est mise à disposition selon les termes de la licence Creative Commons
Attribution (https://creativecommons.org/licenses/by/4.0/legalcode), qui permet
l’utilisation, la distribution et la reproduction sans restriction, pourvu que le mérite de la
création originale soit adéquatement reconnu.

IDRC Grant/ Subvention du CRDI: 108128-002-Scaling Up Small Millet Post-Harvest and
Nutritious Food Products (CIFSRF Phase 2)
Strengthening value chain actors for scaling up the reach of nutrition-dense small millets

M. Karthikeyan, V. Vediappan, Paramasivam, M. Palanisamy, P. Saravanan, G. Karthikeyan, Bijaya Nayak, Manikandana, Kailash, Subha, Mohanalingam & Suma

Scaling up Small Millet Post-harvest and Nutritious Food Products Project
Scheme of presentation

- Why small millets?
- Need for strengthening SM value chain
- Initiatives taken
  - Improving production
  - Establishing decentralised processing
  - Strengthening food enterprises
  - Promoting consumption
- Learning
Why small millets (SM)?

- Triple burden of malnutrition - Undernutrition, Micronutrient deficiencies & Obesity together
- Increasing burden of non-communicable diseases
  - Diabetes, cardiovascular and intestinal disorders, cancer

Decline in diversity of diets is one of the imp. reasons

Including SM in the diets could be part of solutions!

Finger Millet  Proso Millet  Kodo Millet  Foxtail Millet  Barnyard Millet
Why small millets?...

1. Better nutrition than rice & wheat
   - More macro nutrients (protein & fat), micro nutrients (vitamins & minerals) and dietary fibre

2. Medicinal properties
   - Low glycemic index, satiety, preventive and curative properties

3. Part of biodiverse cropping system - offers a basket of services & goods

4. Climate resilient crops

5. Nutritious fodder

In spite of these advantages, the production and consumption of SM have drastically declined!
Declining consumption & moving out of the states

Production constraints

Post harvest constraints

Inadequate attractive products

Inadequate awareness

Inadequate access

Catalyst: Participatory multi-stakeholder action

INTEGRATED MULTIPLE CONSTRAINTS

NASCENT TECHNOLOGY AND MARKET DEVELOPMENT
Earlier Market Chain of Small Millets

Small Millet Farmers → Small Traders → Big Traders → Large Processors in Region (semi-processing) → Large Processors out of Region (2000 km away)

Wholesalers of Bulk Products → Retailers of Bulk Products → Consumers

Millet Porridge Vendors
Current Regional Market Chain of SM

Small Millet Farmers → Small Traders → Big Traders → Large scale Processor in Region (full processing) → Large scale Processors out of Region

Small scale Processor

FPOs → KTL

Equipment Manufacturers

Village Processor

Improved services

Wholesalers of Bulk products → Food Enterprises → Retailers of Bulk & VA products → Consumers

Wholesaler of Value added food products

Consumer organisations

Millet Porridge Vendors

 DHAN Foundation  M. Karthikeyan  karthikeyanrfd@gmail.com  05/12/2017
Improving production

Production issues

1. Food crop - Not preferred
2. Cash crop - Lack of competitiveness

a. Fast declining crop and varietal diversity
b. Low productivity
c. High drudgery, particularly for women
d. Less developed markets
e. Unorganised production
1. Enhanced farmers’ access to varietal diversity
   - 132 local varieties characterised
   - DNA barcoding evolved for SM
   - 1-4 farmer preferred varieties/crop identified thro’ PVS

2. Location specific SAP identified & disseminated

3. Improved harvester introduced

4. Supported organised production & marketing
   a. Organising FIGs, Federations/ FPOs
   b. Effectively engaging in value chain

Establishing decentralized processing

Issues with processing

– Centralised processing with high foodmiles
– Less nutritious output due to bran loss
– Poor performance of decentralised processing equipment
  • Less rice recovery
  • High cost of processing
– Lack of specific support to small scale processors
1. Developed processing equipment

a. Improved centrifugal huller prototypes
   a. Reduced foot print, weight and height and improved energy efficiency
   b. Improved versatility to meet village, micro and medium level enterprise needs

b. Pneumatic grain cleaner

c. Improved grader

d. General design improvements
   i) Safety
   ii) Functionality
   iii) Versatility
   iv) Women friendly

DHAN Foundation
M. Karthikeyan karthikeyanrfd@gmail.com
05/12/2017
2. Commercialisation & scaling up through equipment manufacturers

Supporting five equipment manufacturers

- Improving their equipment
- Promotion/ popularisation
- Linking with potential buyers
  - Participation in trade fairs
  - Facilitation for on-line sales
    - Marketing through Indiamart
    - Website development
3. Supporting establishment / revival of SMPUs of different scale

- Demonstration of processing equipment in strategic locations
- Supporting startups in equipment purchase, installation and building capacity

Results
- Reached 29 districts in 8 states with 97 community level & 31 regional level processing units
- Trained 148 persons in Odisha, Tamil Nadu, Andhra Pradesh and Uttarakhand
- Supported 18 existing processing units
Strengthening food enterprises

1. Research on the health benefits & storage

2. Developed appealing healthful products with TNAU

- Standardized 42 traditional and modern products & 14 therapeutic products
3. Supporting food enterprises for commercialisation

- **Product devt:** Capacity building on product preparation, nutrition analysis and sensory evaluation
- Capacity building on food hygiene & safety and packaging
- Compliance with government protocols
- Improving visibility
- Facilitating B2B linkages
- Info on supportive schemes

**Results**

- 12 standardized products
- 20 have introduced new products
- 24 increased their scale of ops.
- 10 initiated production in Eastern India

Padmeshree Foods, Tamil Nadu
4. Supporting millet porridge vendors

Issues
- Poor image in terms of hygiene and food safety
- Lack of recognition of their role as food provider

Support given
- Trainings and support for i) Adoption of food hygiene & safety practices & ii) FSSAI registration

Results
- 65 improved food hygiene
- 38 got FSSAI license

Millet Porridge Vendor in Madurai
Promoting household consumption

Issues

• Drudgery in manual hulling in production regions
• Deskilling over generations on use in regular diet
• Low social status
• Less awareness on the health benefits
• High price of small millet products
• Inadequate availability
1. Developed promotion materials
   a. Film on cooking demonstration in regional languages
   b. A music album of motivational songs developed
   c. A radio program
   d. Awareness posters

2. Promoting in production regions
   A combination of awareness raising, skill building & huller assembly provision

Folklor art for awareness raising
SMPU in Koraput, Odisha
Recipe demonstration
3. Promoting in non-production areas

- Organised large scale awareness programmes (WALKATHON)
- Value addition demonstration on a large scale
- Nutrition education and campaign through community radio and other media

4. Set up a market initiative- KTL

- 120 tonnes sold at 30 to 50 % lower price
- Reaching the poor through women/ farmer organisations

5. Pilots on introduction of SM in PFPs

i) In ICDS in Srikakulam district, AP by WASSAN- 160 children
ii) In schools at Malkangiri Dt., Odisha - 4162 students
Major learning

• Nutrition dense NUS need value chain approach
• Engaging multiple actors is essential
• A combination of approaches to be followed - Production based consumption, Market provision & Provision by State
• It is possible to reach ‘bottom of the pyramid’ consumers through innovative mechanisms
• State support is essential for establishing value chain and scaling up in different regions
• Our learning has relevance to many Asian and African countries
Acknowledgment:

We thank IDRC and GAC for their support and encouragement!