Entrepreneurship in Millets in India

*Millets value chain and marketing trends*

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About the Know Millets Webinars

- Different aspects of millets
  - Ecology
  - Historical context
  - Sustainable food systems
  - Community centric
  - Nutrition & Socio - economics
  - Technology & Engineering

*Sustainable food systems perspective*

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In this presentation

- Motivation: Nutrition

- Conveying Nutrition
  - Grain Structure
  - Processing & Storage challenges

- Opportunities

- Summary
Motivation: Nutrition

▲ Not just one super food

▲ Wide range of variability
   ✷ Variety
   ✷ Cultivation practices
   ✷ Processing

▲ Nutrition on the chart is not always in the food

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Grain Structure

- **Husk**
  - Hard cellulosic, indigestible

- **Bran**
  - Extremely nutritious

- **Germ**
  - Protein rich

- **Rice Kernel**
  - Source of energy
Bran ‘s da boss!

Composition
- Fibers
- Minerals
- Fatty acids

Structure
- Thin
- Fragile
Processing Challenges

- Machines
  - Performance
  - New ideas

- Facility & Process
  - Pest management
  - Flexibility for optimization

- Skill sets
  - Operating machines
  - Maintenance & Service

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Storage Challenges – Shelf life

▲ Pest infestation
  ✈ Extremely nutritious – other species use it
  ✈ Most probably infested as it came in

▲ Rancidity
  ✈ Oil, fibres and minerals
  ✈ Less damaged bran, slower oxidation

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Conveying Nutrition

- Bran costs money!!

- Components of the solution
  - Shorter supply chains
  - Machine improvements
  - Skill Development
Opportunities

⚠ Production – Sustainable farming
 ✦ Products – seeds, nutritional inputs, tools, etc.
 ✦ Services – skilling and training, contracts, etc.

⚠ Processing
 ✦ Closer to Farm – pre cleaning, grading
 ✦ Closer to Plate – hulling, milling, secondary processing

⚠ Consumer products – limited only by our imagination ...
  ... and our skills at convincing others!!
Production – Sustainable farming

▸ Products
  ✤ Seeds
  ✤ Nutritional inputs
  ✤ Tools

▸ Services
  ✤ Skilling & training
  ✤ Contracts & turnkeys

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Processing

▲ Closer to Farm
  ➣ pre cleaning
  ➣ grading

▲ Closer to Plate
  ➣ Hulling
  ➣ Milling
  ➣ Secondary processing

The IDRC – DHAN Community scale Small Millet Processing
Summary of Material Flow

Legend
- Machine
- Secondary product
- Primary product

- Farm cleaned Millet grains
- Huller
- Grader (with Aspirator)
- Grader
- Destoner
- Final Manual cleaning
- Destoner
- Destoner
- Destoner
- Destoner
- Destoner

- Dust & Light MOTG
- Large size foreign material: pebbles, mud balls, straw, etc.
- Small grains foreign material: pebbles, mud balls, etc. - as soil additive
- Unfilled grains – high Q component for cattle / bird feed
- Premium Q grains/seeds
- Pebbles – soil additive

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smallmillets@dhant.org
Tue 6 December 2016

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Consumer products

▸ Ready to cook
  ▪ Poha, Puffs
  ▪ Pasta, Noodles

▸ Heat & Eat
  ▪ Bran and its fatty acids

▸ Ready to eat
  ▪ Sweets & Savouries
  ▪ Breakfast cereal mixes
  ▪ Nutri bars/balls
Summary

♦ Nascent sector
  ◆ High growth opportunities
  ◆ Rewards for sustained efforts

♦ Opportunities for
  ◆ Innovation
  ◆ Novel solutions

♦ Sustainability Dividends

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Thank you!

For more info ...

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