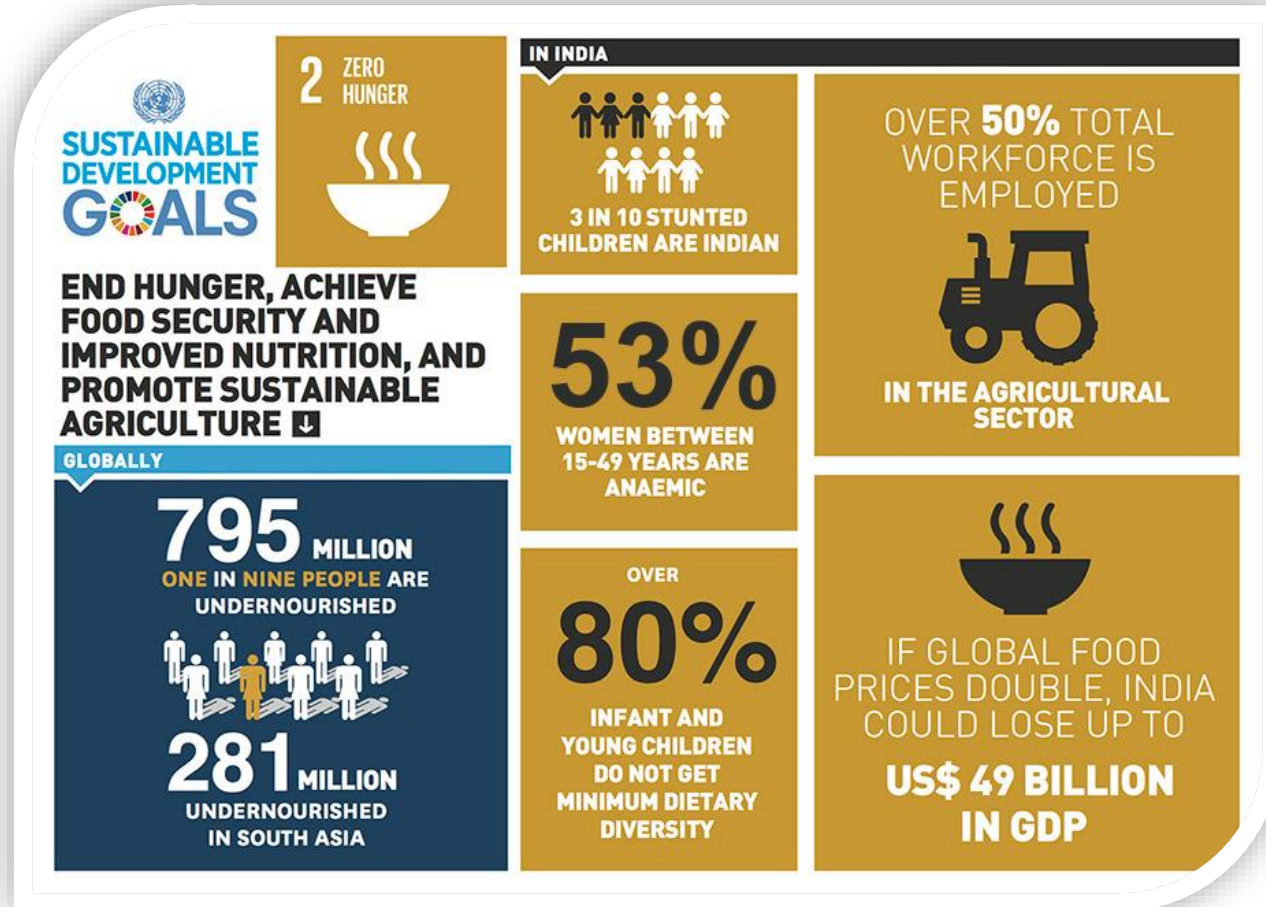


# Bridging the disconnect between agriculture and nutrition in India

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# Malnutrition is a global problem



Source: <http://in.one.un.org/page/sustainable-development-goals/>

**Agri-Horticulture remedies for nutritional maladies and to strengthen food based approaches to eradicate malnutrition**

M S Swaminathan

Agriculture – Crops, Animal husbandry and fisheries

# Bridging the disconnect between agriculture and nutrition

## Farming System for Nutrition

- The FSN model is a location-specific, inclusive model based on the resource endowments and specific environment that shall address the nutritional needs of families.
- Underlying the concept of FSN is a principle that household food production is important to the diets of farm families, particularly small holders.

## MSSRF's Approach and Key focus areas

1. Developing and demonstrating location specific model farming system for nutrition
2. Establishing a Grid of Garden of nutri-rich plants in MSSRF Field centres/ KVKs in association with SAU
3. Creating a cadre of Community Hunger Fighters in the focused locations
4. Communicating to stakeholders through various media for awareness and behavioural changes especially empowering women
5. Policy advocacy with the evidences from the above research

## Food based approach to eradicate malnutrition and bringing nutrition focus to farming systems

- Food-based strategies, focus on the necessity of improving diets (including availability of nutri-rich food, dietary diversification) in both quantity and quality in order to overcome and prevent malnutrition.
- This is expected to provide multiple benefits including:
  - Bridging the disconnect between agriculture and nutrition
  - Bringing nutritionally important crops to the Farms
  - Awareness on nutrition related issues to the consumers and
  - Consumption of nutritive and balanced diet (diversity) by the people and leading towards a healthy society

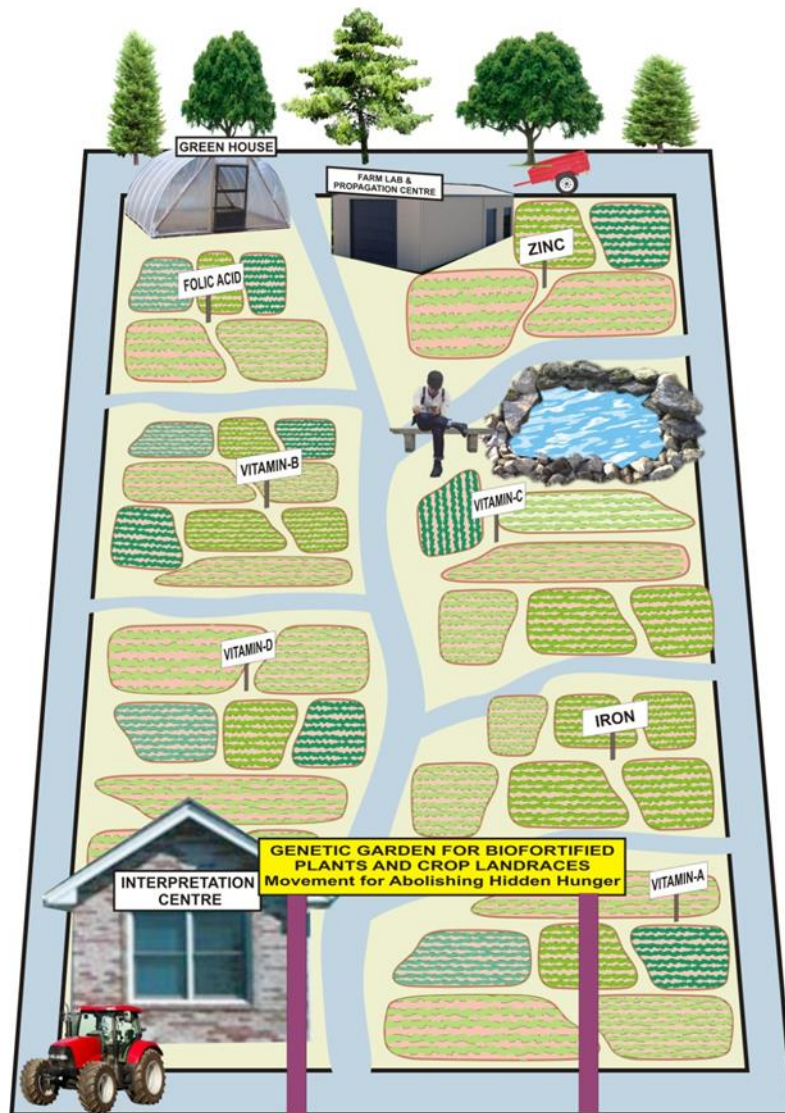
# Fostering agriculture-nutrition linkages among farmers

Formulating and piloting a suitable strategy for fostering agriculture-nutrition linkages among farmers. This strategy would include some key elements such as:

- exploiting the scope available to intensify the production systems - cultivate pulses as inter-crop and bund-crops or relay or fallow crop,
- Harness the homestead land wherever available to promote nutri-gardens that have a combination of green leafy vegetables, roots and tubers, fruits and other vegetables;
- tapping the available potential of inland water bodies to expand fish and duck production, with due attention given to developing fish/duck hatcheries;
- focusing on breed, feed and disease management in dairy and poultry sector with particular attention to improving the extension services for reaching technical knowledge among farmers on care practices and
- promoting behaviour change by improving the farmers knowledge on nutrition and the need to cultivate nutritious crops for household consumption and among non –farmers on the need to demand and consume nutritious food.



# Gardens of Nutri-rich Plants



Not to scale

## Naturally biofortified plants *Moringa oleifera* Lam. - Drumstick

### MSSRF collections

Traditional varieties collected from Tamil Nadu so far: 54  
Hybrid varieties : 2

*Current Science (in press)*



25 x iron in spinach  
17 x calcium in milk  
15 x potassium in bananas  
10 x vitamin A in carrots  
9 x protein in yogurt

*National Geographic, November 2012*

## Biofortified plants through plant breeding

### Orange-fleshed sweet potato

- \* Orange fleshed sweet potato contains  $\beta$  carotene and anthocyanin which are cheap source of vitamin A and antioxidants
- \* Orange fleshed sweet potato can combat vitamin A deficiency in developing countries

#### ST-14



$\beta$  carotene 10.50 mg/100g

#### Sree Kanaka



$\beta$  carotene 8 mg/100g

## Community Hunger Fighter (CHF) for Nutrition Awareness

- Create Nutrition awareness in nearby villages
- Establishment of household level Nutri-gardens
- Collection of nutri-rich plants from the Mother Nursery and distribute to FSHG members
- Advisories to pregnant and lactating mothers
- Coordinating with the Anganwadi workers on health & sanitation activities

Name of the CHFs	Responsible Villages
Ms. Asmati Pujari	San-Taliaguda, Jholaguda, Kuspar & Nayakguda
Ms. Chanchala Harijan	Kusumguda, Khutuguda, Bandhiaguda & Ambaguda
Mr. Trilochan Muduli	Boliguda, Paliguda, Rauliguda & Banuaguda
Mr. Tripati Gouda	Aminguda, Sundhiguda, Gurumaiguda, Janiguda, Dangrimaliguda & Bariguda



## Policy Advocacy

- M&E, project learning and impact analysis strategy
- Policy advocacy with evidences for appropriate changes that are required to facilitate adoption of FSN approach by stakeholders including Government

## MSSRF's major projects on Agriculture and Nutrition

- LANSA – DFID, UK
- Nutrigarden Program – Grand Challenges India
- FSN Advocacy among government officials – Tata Trusts
- Promotion of FSN through government programs - RKVY, Odisha
- Research on introducing Nutrition Sensitive Agriculture components in the ongoing agricultural practices - JICA